Van Nuys Airport
Part 150 Study

City of Los Angeles
LOS ANGELES WORLD AIRPORTS

Noise Compatibility Program Report
with
Noise Exposure Maps
and
Noise Compatibility Program Mitigation Measures

February 2007

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with
Noise Exposure Maps (NEM)
and
Noise Compatibility Program (NCP) Mitigation Measures

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VNY Part 150 Steering Committee

Adopted by the VNY Part 150 Steering Committee July 16, 2001

Adopted by the Board of Airport Commissioners July 19, 2001 by Resolution #21489

VNY Part 150 Steering Committee Approved and Concurred with Resolution #21489 on August 8, 2001

First Amendment: January 2003; Revised by Environmental Management Division with added material to comply with comments from the Federal Aviation Administration (FAA) after submittal of the Study.
Second Amendment: April 2006; Revised by Long Range Planning Division to comply with additional comments from the FAA; submittal date of NEM remains January 2003.
Third Amendment: February 2007: Revised by Regional Planning Division to comply with additional comments from the FAA; submittal date of NEM remains January 2003. No changes were made to the mitigation measures contained within the NCP.

February 2007

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NOISE COMPATIBILITY PROGRAM REPORT

I) Introduction

The purpose of a Part 150 Study is to address noise issues emanating from an airport within the context of guidelines established by Federal Aviation Regulations (FAR). The Aviation Safety and Noise Abatement Act of 1979 (ASNA) was enacted, in part, to provide the means by which noise compatibility programs could be developed by local jurisdictions to resolve noise impacts associated with their airport. Part 150 refers to the section of the FAR guidelines that were promulgated to implement the Act and set requirements for airport operators who choose to develop a noise compatibility study, which is a voluntary program. The Federal Aviation Administration (FAA) is the federal agency responsible for ensuring that local agencies adhere to the guidelines. The FAA also provides funding and other assistance to meet these goals.

In order to comply with the federal guidelines a Part 150 study should define the extent of land use incompatibility associated with aircraft noise and develop a program to reduce this incompatibility through changes in aircraft operations, noise abatement projects, and community land use controls. The Part 150 provides a systematic approach for addressing aircraft noise in the vicinity of an airport. It is also a prerequisite for the implementation of noise abatement and mitigation measures that may be eligible for federal funding. Approval of a Noise Compatibility Program does not, by itself, constitute an FAA implementing action. Implementation of air traffic procedures, recommended in a Part 150 study, is still subject to safety, feasibility and environmental review.

Section 150.1 of the guidelines further defines the scope and purpose as prescribing the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. It prescribes single systems for—(a) measuring noise at airports and surrounding areas that generally provides a highly reliable relationship between projected noise exposure and surveyed reaction of people to noise; and (b) determining exposure of individuals to noise that results from the operations of an airport. This part also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. It provides technical assistance to airport operators, in conjunction with other local, State, and Federal authorities, to prepare and execute appropriate noise compatibility planning and implementation program.

Airport Description

Located in Van Nuys, CA in the heart of the San Fernando Valley, Van Nuys Airport (VNY) is ranked as one of the world's busiest general aviation airports. VNY averages approximately one-half million takeoffs and landings annually. More than 100 businesses are located on the 730-acre airport, including six major fixed-base operators and numerous aviation service companies. VNY is one of four airports owned and operated by Los Angeles World Airports (LAWA), including Los Angeles International (LAX), Ontario International

(ONT) and Palmdale Regional (PMD). The airport system operates under the direction of a policy-making Board of Airport Commissioners (BOAC) whose seven members are appointed by the Mayor of Los Angeles.

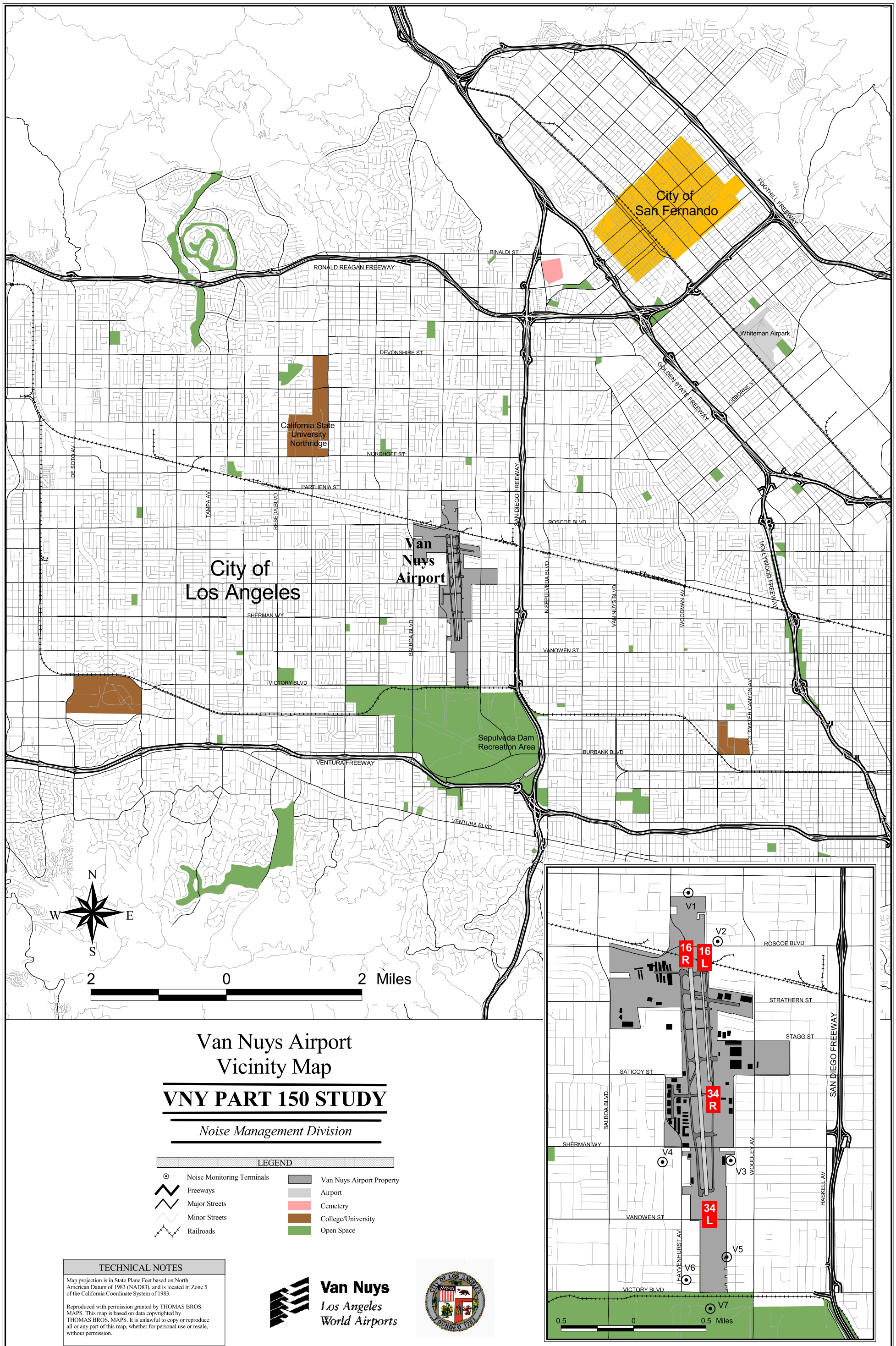
Van Nuys Airport plays a vital role in the Southern California airport system, serving a variety of private, corporate and government aviation needs. By providing a place for general aviation, which encompasses all flying other than scheduled air carrier service or the military, VNY enhances both safety and efficiency at the region's commercial airports. As part of the regional approach to meeting passenger demand, VNY serves an important purpose in reducing congestion and diminishing flight delays at Los Angeles International and other nearby airports. Contributing $1.2 billion each year to the Southern California economy, VNY creates jobs, promotes business and provides essential general aviation and emergency services. Business travelers and tourists using private, corporate and charter aircraft benefit from the airport's convenient proximity to city business, recreation and entertainment centers. The airport also provides a base and maintenance facilities for fire, police, air ambulance, search and rescue and news media aircraft that serve the local community.

There are two parallel runways at VNY each with a north-south orientation. Most of the aircraft landing at VNY arrive from the north and departures are typically to the south. The westerly runway, designated 16R/34L, is an 8,000 foot runway with full instrument landing system, where most operations occur. The easterly runway, designated 16L/34R, is a shorter 4,000 foot runway which is primarily used for touch and go training (see vicinity map).

Background

As indicated in the previous section VNY is one of four airports managed by LAWA. And while LAX, ONT, and PMD are primarily commercial airports, VNY is one of the busiest general aviation airports in the country where scheduled commercial passenger service is prohibited. VNY does, however, have unscheduled jet charter service and numerous corporate jets based at the airport. The increase in recent years of jet aircraft based at VNY resulted in a corresponding increase in noise complaints from the surrounding community. The unique noise patterns of helicopter operations prevalent at the airport also contribute to the noise issues, along with the prominent level of operations from general aviation aircraft. The objective of the Part 150 Study is to address these issues and reduce airport noise impacts in the most equitable and effective manner possible.

This report describes the process and conclusions of the study including the development of Aircraft operational forecasts, the Noise Exposure Maps (NEM), and program recommendations and noise mitigation measures that constitute the Noise Compatibility Program (NCP) for VNY. The report is complemented by supporting background appendices. The Study was developed in compliance with the provisions of the Federal Aviation Regulations Part 150 - Airport Noise Compatibility Planning (14 CFR Ch. 1), promulgated by the FAA. Similarly, the contents of this report conform with the requirements set forth in the Part 150 regulations and guidelines.



Van Nuys Airport Vicinity Map

VNY PART 150 STUDY

Noise Management Division

LEGEND

- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads
- Van Nuys Airport Property
- Airport
- Cemetery
- College/University
- Open Space

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

Van Nuys
Los Angeles
World Airports

This VNY Noise Compatibility Program Report is comprised of five sections:
(I) Introduction; (II) Study Development and Process, which includes an overview of the technical analysis; (III) Public Participation and Consultation, describing the process that went into the formulation of measures recommended in the study; (IV) Noise Contours, Impact Analyses, and Related Maps, focusing on the development of the Noise Exposure Maps (NEM); and (V) the Noise Compatibility Program (NCP). The five year NEM, with mitigation measures (the official NEM, as required by the FAA) along with the NCP are the primary elements of the report, upon which noise mitigation actions will be based. The five year NEM without mitigation measures, and the 11 alternative scenarios evaluated during the study, are also described (starting on page 19 of this report). The preferred scenario, Alternative #9 (page 20), is represented within this report as contained in the five year NEM with mitigation, and as one of the primary focal points of the NCP.

The NEM and NCP have been the subject of several public workshops and numerous public meetings held by the study's Steering Committee. The VNY Part 150 Study has a long history beginning in 1989. In 1992 both the NEM and NCP were adopted by the Steering Committee and forwarded to the Board of Airport Commissioners (BOAC) with the recommendation that it be adopted by the BOAC and submitted to the FAA for their review and approval. The BOAC adopted the VNY Part 150 Study NEM and NCP by Resolution #18204, as recommended by the Steering Committee, at a public hearing held October 5, 1992 at the Airtel Plaza Hotel on Van Nuys Airport. A provision of the BOAC adoption of the Part 150 Study at that time was the approval of a forecast of 100% growth in jet operations over five years to be applied to the Official NEM. In 1993 the FAA rejected the submittal because the aircraft operational forecast was not justified.

In 1996 the Steering Committee reactivated briefly but then did not meet again until April of 2000. This began a series of public meetings that culminated in adoption of the primary elements of this report by BOAC Resolution # 21489 on July 19, 2001. The current submittal contained in this report retains much of the analysis that was conducted prior to the 1992 submittal. This information is still considered relevant to conditions at VNY. In fact, as part of the current Steering Committee's effort in November of 2000 they formally reaffirmed 26 of the original 28 NCP measures that were originally adopted in 1992, which included the preferred alternative scenario. However, primary elements of the Study including the aircraft operational forecasts, the NEMs and the flight track maps have all been updated to reflect conditions at the date of submittal. In addition new measures have been added to the NCP.

Upon FAA approval of the current submittal, LAWA will pursue an active program to implement the measures outlined in the NCP. These measures include a program for pilots to engage in noise abatement procedures in all aircraft operations at VNY, the utilization of a comprehensive noise monitoring and reporting system, an insulation program for residences within the 65 CNEL noise contour, helicopter noise abatement procedures, as well as numerous other measures that were intended to mitigate potential impacts caused by the airport while maintaining the economic vitality of the community.

A significant addition to the NCP from the 1992 version is inclusion of several measures that will require a Part 161 Study to be conducted. These include extension of the existing curfew to apply to all non-emergency jets and helicopters, placing a limit on the number of Stage 3 jets, and establishing maximum daytime noise limits. As part of the commitment to ensure the success of the program, the Steering Committee voted to recommend the establishment of a Noise Roundtable to review progress of the Part 150 Study and to make adjustments to the mitigation measures as may be necessary. The NCP may be reconsidered for potential revision, if necessary, as a result of revisions to the noise exposure maps.

The VNY Part 150 Study was submitted to the FAA in September 2001. In January 2003 the Study was resubmitted to incorporate comments received from the FAA. The amended Study included additional material describing the technical aspects of the Study and a new section that analyzed in greater detail the measures proposed in the Noise Compatibility Program (NCP). The NEM was also updated in the January 2003 submittal. In April 2006 the Study was revised once again based on additional comments received from the FAA. Neither of the amended submittals changed any of the measures in the NCP. The updated NEM from January 2003 remains the NEM as previously submitted and is representative of conditions at the airport in 2006.

II) Study Development and Process

The VNY Part 150 Study was initiated through a grant from the FAA in the amount of $275,000. With a 10% matching fund from the LAWA, a total of $305,555 was originally allocated to the Study. The BOAC accepted the FAA Part 150 Noise Compatibility Study Planning Grant through Resolution No. 15960. After the planning grant was authorized, the LAWA Environmental Management Division staff began the process of assisting the BOAC in establishing a Steering Committee and a Technical Committee to oversee development of the Study. Staff also developed scopes of work and contracts for professional consultant services from several areas of expertise. With the assistance of these consultants, as well as input from the community, other LAWA Divisions and various planning agencies, the Technical Committee conducted research and technical analyses that led to a range of alternatives that were evaluated in the Study.

A) Technical Committee and Steering Committee

Two committees were created by the BOAC to formulate the Part 150 Study. The Technical Committee was comprised of eight members, who represented local, regional, state, and federal planning agencies related to the Van Nuys Airport. These included the Los Angeles City and County Planning Departments, the Los Angeles City Department of Transportation, the Los Angeles World Airports (LAWA), the Southern California Association of Governments (SCAG) Aviation Program, the California Department of Transportation (CalTrans) Division of Aeronautics, the Federal Aviation Administration (FAA), and a representative of the VNY Airport Tenant Association. That committee acted as the technical arm to the Steering Committee by collecting data, reviewing reports prepared by staff and other agencies, and reviewing, analyzing, and providing input on various issues related to the noise study.

The Technical Committee met during 1989, 1990, and 1991 to decide upon: the role of consultants during the Study; the scope and content of surveys dealing with community opinion, economic impact of proposed alternative noise control scenarios; forecasts of future aircraft operation levels; alternative land use concepts, including use of the Bull Creek/Air National Guard Site, which has been subject to extensive planning efforts since it was vacated (refer to Exhibit #1 on page 51 for its location) and general land uses within and surrounding the airport; the location of portable noise monitors, the scope of field surveys, the data to be used in creating noise contours generated by use of the Integrated Noise Model; a wide range of alternative scenarios to reduce noise impact, including those listed in Section B150.7 (b) of the FAR Part 150 Regulations, as well as the alternative noise control maps.

The Technical Committee meetings were open to the public and each meeting agenda had a separate item for public comments. Other items on the agendas were also opened for public input during each meeting. This input was factored into the formulation of the noise compatibility program and the alternative noise control scenarios. The Technical Committee

recommendations, including the preferred alternative Scenario #9, were forwarded to the Steering Committee for their consideration.

The 16 member Steering Committee, that was originally formed in 1989, was comprised of a cross section of residents of the community surrounding VNY, airport tenants, and representatives of elected officials, including three City Council Districts, two Congressional Districts, one County Supervisory District, two members of the Board of Airport Commissioners, and two representatives of the Mayor's Office. The initial Steering Committee met 16 times from December, 1988 to March, 1992, including two highly advertised public workshops in April, 1989 and December, 1991. As noted below, the Steering Committee reconvened and met twice in 1996, three times in 2000 and four times in 2001 for a total of 25 meetings over the course of the Study.

As with the Technical Committee, the Steering Committee meetings were each opened to the public and advertised as such. Each agenda had a separate item for public comments and other items on the agendas were open to public input, providing multiple opportunities for public input. Attendance at the meetings ranged from approximately 50 to 200 people in the audience for an average meeting, to over 300 at the 1991 workshop.

In 1996 the Steering Committee was reactivated and expanded to 21 members including five City Council Districts and additional representatives of the community. Two meetings were held in October and November of 1996 and then the process was suspended again. In 2000 the Steering Committee began meeting again. During that year it had three meetings in April, July and November. In 2001 meetings were scheduled for January, May, June (meeting was cancelled due to a lack of quorum), July, and August when the Steering Committee completed their work on the Part 150 Study. At each of these meetings there were extensive opportunities for public input, which are documented in the minutes of each meeting.

The purpose of the Steering Committee was to receive input from the community, the Technical Committee, other elected officials, and related agencies to consider the most appropriate program in achieving an equitable and effective solution to the noise problem at VNY. A summary of the minutes of the Steering Committee meetings, including the two public workshops, and each of the Technical Committee meetings is included in this report. The full text of all meeting minutes are contained in Volume 2 of 3 of the Background Appendices.

After in depth consideration throughout these meetings of 11 alternative noise control scenarios, and various noise compatibility measures, the Steering Committee adopted the Noise Exposure Maps (NEM) and Noise Compatibility Program (NCP) contained in this report. The Steering Committee forwarded the NEM and NCP to the BOAC with the recommendation that it be adopted and submitted to the FAA for their review. On July 19, 2001 the BOAC adopted the NEM and NCP as approved by the Steering Committee.

Following is a list of the members of the Steering Committees in 1992 and in 2001. Also listed is the Technical Committee and their affiliation or representation:

Table #1: Steering Committee in 1992

Member	Affiliation
Sam Greenberg, Chairman	Board of Airport Commissioners
Robert Chick, Chairman *	Board of Airport Commissioners
Tom Henry, Vice Chairman	Second Los Angeles City Council District
Lisa Barrena	VNY Area Resident
Robert Jackson	VNY Area Resident/Private Pilot
Clay Lacy	Clay Lacy Aviation/Airport Tenant
Joseph McGuire	Raleigh Jet Enterprises/Airport Tenant
Will Ross	VNY Area Resident
Frankye Schneider	Third Los Angeles County District
Rita Schneir	Third Los Angeles City Council District
Don Schultz	VNY Area Resident/BAN
John Slifko	26th Congressional District
Virginia Speilberg	23rd Congressional District
Larry Van Nuys	Mayor's Representative/Resident
Frederick Voorhis	Mayor's Representative/Van Nuys Flight Center/
	Airport Tenant
Sandor Winger	Twelfth Los Angeles City Council District
Commissioner Greenberg passed away in April, 1991 and Commissioner Chick assumed the chairmanship.	

Table #2: Steering Committee in 2001

Member	Affiliation
Patricia Schnegg, Chair in 1996	Board of Airport Commissioners, Vice President
Leland Wong, Chair in 2000	Board of Airport Commissioners
Mark Schaffer, Chair in 2000/2001	Board of Airport Commissioners, Vice President
James Acosta	VNY Area Resident
George Anisman (resigned)	VNY Area Resident
Harry Berg	VNY Area Resident/Private Pilot
Phil Berg	Hughes Aircraft/Airport Tenant
Ken Curry	Peterson Aviation/Airport Tenant
Lori Fernand/David Tierney	24th Congressional District

Morrie Goldman	VNY Area Resident
Tom Henry	Second & Third Los Angeles City Council Districts
Robert Jackson	Mayor's Representative/Private Pilot
Harold Lee	Air Sources/Airport Tenant
Kenneth Millman	11th Los Angeles City Council District
Deuk Perrin/Debbie Dyner	Third Los Angeles City Council District
Mary Rawlings	VNY Area Resident
Don Schultz	Mayor's Representative/Area Resident
Laura Shell/Lori Wheeler	Third Los Angeles County District
Gerald Silver	26th Congressional District
Frederick Voorhis	Van Nuys Flight Center/Airport Tenant
Alma Vorst	VNY Area Resident
Wayne Williams/Anne Carver	Fifth Los Angeles City Council District
Sandor Winger	12th Los Angeles City Council District

Table #3: Technical Committee in 1992

Mike Armstrong	Southern California Assn. of Governments
David Bleasdell	National Medical Enterprise/Airport Tenant
Richard Dyer	California Department of Transportation
John Huttinger	Los Angeles County Planning Department
Maurice Laham	Los Angeles City Department of Airports
Deuk Perrin	Los Angeles City Planning Department
Bahan Pezeshkian	Los Angeles City Transportation Department
Howard Yoshioka	Federal Aviation Administration

B) Professional Consultants

The Part 150 Study at VNY involved a number of complicated and controversial issues pertaining to the perception of impacts associated with airport operations and their relationship to the surrounding community. As such, several professional consultant firms were initially retained to provide the range of expertise necessary to adequately address those issues. The firm of McClintock, Becker Associates provided project coordination for the Study. This firm had extensive experience in Part 150 Noise Studies at other airports and Aviation Master Planning. Michael McClintock acted as moderator at Steering Committee meetings held prior to the 1992 submittal and also provided input to the formulation of alternatives considered during the Study.

Alternative noise control scenarios, which are described on pages 18-20 of this study, were evaluated to comply with Part 150 guidelines. The Noise Consulting firm of Landrum & Brown provided expertise in modeling noise contours that represent each of these alternative scenarios. The FAA required the use of the Integrated Noise Model (INM), or approved equivalent, in generating 24-hour average noise contours resulting from aircraft operations. Landrum & Brown conducted numerous studies utilizing the INM and had prepared Quarterly Noise Reports for LAWA for several years in the past using the INM. In addition to the noise contours, Landrum & Brown utilized their own software, LandTrak, to quantify and analyze the impacts of incompatible land uses within the contours. Landrum & Brown also acted as liaison with the FAA to obtain radar data on VNY aircraft operations, and conducted field studies, that provided the requisite data and parameter inputs to run the INM and perform the land use impact analysis. In the 2001 update to the noise contours the staff of LAWA's Environmental Management Division prepared the NEM and associated land use impact analysis utilizing internal land use data bases and Version 6.0c of the INM.

Dr. David Dubbink, acoustical consultant, provided presentations at Steering Committee meetings of actual noise levels experienced from aircraft under different conditions. Dr. Dubbink made two presentations, at the beginning of the Study and at the meeting before the last meeting in 1992. These presentations were useful in demonstrating the real noise levels associated with aircraft operating at VNY. Actual recordings were played representing different locations on and around the airport and also simulating the reduction in noise impacts from various types of acoustical insulation in residences.

The firm of CommuniQuest was utilized in three aspects of the Study. The first was a community opinion survey done by telephone to 500 households randomly selected in 12 zip codes around the airport. The survey questions were developed by CommuniQuest and revised by the Technical Committee and the Steering Committee. The results of the survey were used by the Technical and Steering Committees in developing the noise compatibility program. The survey results are contained in Volume 1 of 3 of the Background Appendices.

The second effort by CommuniQuest was an offshoot of the community opinion survey. A question asked in the survey was which aircraft type bothers people the most. The highest response was for helicopters. As a result, a Helicopter Study was conducted by CommuniQuest to determine operational patterns and make recommendations to resolve the noise or nuisance perceived to come from helicopters. Most of these measures were included in the NCP. The Helicopter Study is contained in Volume 1 of 3 of the Background Appendices. The third effort by CommuniQuest was outreach to pilots using VNY to implement quiet departure procedures. These noise abatement procedures were considered an important element of the NCP, as adopted by the Steering Committee, and it was decided to begin the process of implementing the procedures prior to adoption of the NCP by the FAA.

C) Data Research and Technical Analysis

1) Fleet Mix and Operations Forecast

The Integrated Noise Model (INM) Version 3.9 from the FAA was utilized in the generation of the noise contour maps in 1992. Information about this earlier INM version is retained in the Study to maintain an historical continuity over the course of the Study, as well as provide a comparative basis to the currently used version of the INM. As indicated previously, version 6.0c of the INM, in compliance with the Part 150 guidelines to utilize the most up to date version of the INM, was used in the generation of the noise contour maps in 2001. The INM requires that the average daily operations at the airport be described in terms of type of aircraft, time of day of an operation, runway use pattern, and flight tracks utilized. At VNY, this information was obtained through a number of sources including FAA flight records, LAWA databases and field surveys. This information is needed to provide the necessary inputs to the INM for it to function and most accurately represent noise impacts associated with an airport. The INM is the required model under Part 150 guidelines used to generate the base case and future case Noise Exposure Maps (NEMs), which graphically demonstrate the extent and level of noise impacts surrounding the airport and are essential elements of a Part 150 Study.

In addition to the input parameters related to the types of aircraft operations the FAA allows for certain adjustments to be made to the noise algorithms contained in the INM for specified aircraft. One of the mitigation measures in the NCP relates to these types of adjustments. Measure # 13 (outlined on page 67 of this report and analyzed on page 87), which embodies scenario # 9 (summarized on page 20), is referred to as the Fly Friendly Program. The purpose of this existing program is to reduce aircraft noise impacts, from those that would otherwise be represented in the INM, by means of operational controls. The provisions of measure #13, which would continue the Fly Friendly Program, were manifested in the Base case and the five-year NEM by making adjustments to the noise profiles of applicable aircraft in the INM. These adjustments reflected actual noise performance factors that result from the program, which were measured and calibrated by the use of existing LAWA noise monitors applied to the specified aircraft types. The location of these monitors is displayed on the exhibits. Approval of the methodology, employed to generate the adjustments, was received from the FAA prior to their application. Refer to volume 3 of 3 of the Background Appendices for a complete description of the methodology, which was developed in conjunction with the consulting firm of Landrum & Brown.

The FAA maintains records on overall operations and more detailed data on aircraft that file flight plans under Instrument Flight Rules (IFR), which are primarily jet aircraft. However, those aircraft not flown under IFR are simply registered as a single operation without regard to the type of aircraft. Therefore, field studies were conducted by LAWA and Landrum & Brown personnel to obtain representative counts of the other types of aircraft for the 1990 base case. These included piston engine, turbo props, military, and helicopters. The IFR flight strip data generated by the FAA control tower were used to

categorize jet aircraft by specific make and model to further refine the accuracy of the INM. This information was updated in the 2001 data base, used for the current (2002) submittal, by taking operational figures from the Oracle data bases used to generate Quarterly Noise Reports as required under the VNY Noise Variance.

The Oracle database is generated from data received from Automated Radar Terminal System (ARTS) flight information which is monitored on a continuous basis. Virtually all jet aircraft operations are registered on the ARTS data system when they file flight plans. Therefore, very precise information is obtained on each individual jet operation including the aircraft type, its altitude over relevant points of its trajectory, and the time of day that it flew. These are important factors in determining the most accurate parameters of noise as generated in the INM, which is used to develop noise contours for the Study.

Unfortunately, such precise information is not available for turboprop, piston and helicopter aircraft operations. A much smaller proportion of these types of aircraft file flight plans. Those types of aircraft that are represented by flight plans are normalized to FAA tower counts by subtracting the jet operations from the total tower counts and then establishing a proportion between each the non-jet operation levels in the ARTS data and the remaining tower counts. However, it is important to realize that jets dominate the noise contours and the noise energy from non-jets is essentially subsumed by the jets. Therefore, precision in jet operations is the most important aspect in arriving at the highest level of accuracy for the NEM.

Touch and go operations are conducted at VNY to perform take-off and landing training in piston aircraft. This training is done on the shorter runway (4,000 feet) on the east side of the airport, designated 16L or 34R, by flying closed loops east of and on the airport. The tracks for these operations are demonstrated on exhibit #10. An estimated figure of 27% of the total tower counts was derived in consultation with the FAA tower chief at VNY, Chuck Chamberlain, to represent the average level of touch and go operations. This estimate was increased to 28% after the FAA ceased the practice of including Burbank overflights in their VNY tower counts. This adjustment was predicated on the fact that the Burbank overflights did not include any of the touch and go operations. Therefore, when the total counts were reduced, to account for the removal of the overflights, the proportion of touch and go operations to the total was increased from 27% to 28%. The proportion changes while the actual number of touch and go operations remains the same. As an example if there were 1500 operations in a day then 27% of this total would equal 405 touch and go operations. Whereas, if 55 of the total count were overflights and these were removed then the total would become 1445 operations. Comparing the 405 touch and go operations to the reduced total of 1445 now equates to 28% of the total.

Also in consultation with the tower chief an estimate of 10% of total tower counts was established to represent the average number of helicopter operations. Similar to the adjustment made to the touch and go operations the 10% figure allocated for helicopter

operations was revised to 10.5% of the total. This adjustment reflects the fact that the actual number of helicopter operations remained the same after the Burbank overflights were deducted from the total. Therefore, the percentage of the fixed helicopter counts, as compared to the smaller total counts, was increased.

Each of the aircraft used in the noise modeling is listed in table # 4. The aggregate operation levels of each jet aircraft type are broken down, within the INM, by daytime (7 am to 7 pm), evening (7 pm to 10 pm) and nighttime (10 pm to 7 am). These operation levels are shown in section five of volume 1 of 3 of the Study's Background Appendices, in the Input Runstream Data/Echo reports for the INM.

The flight track data for all aircraft types is also taken from ARTS data and from LAWA's own Passur system, which is used to monitor aircraft tracks. In reality the totality of all individual flight tracks is spread out evenly over a large fan shaped area with the base of the fan emanating from the end of each of the runways. In order to translate this into a manageable fashion, within the context of INM modeling parameters, a series of average tracks were established to reasonably represent the wide diversity of tracks. These representative tracks are shown on exhibits #4 thru 10. About 80% of the operations typically utilize runway 16R for southerly departures and arrivals from the north. This pattern is reversed when meteorological conditions require departures to the north on runway 34L.

The FAA control tower at VNY closes during the nighttime hours of 10:45 pm and 6:00 am. Therefore, ARTS data cannot be relied upon to gather operational data during these hours. LAWA operations personnel keep a log of all flights during the curfew hours between 10 pm and 7 am, which approximately corresponds with the period the tower is closed. The flight operations data in the curfew logs are derived by monitoring pilot communications. This information is then correlated with the tract information registered during the same time period by LAWA's Passur system. This information is added to the ARTS data to maintain a complete accounting of all jet type operations during each 24-hour period. This provides a highly accurate representation of the primary sources of noise at VNY.

The forecast of the type and number of aircraft operations can potentially be affected by land uses proposed within the airport. However, airfield development currently planned within the next five years should not affect airfield operations. An Airport Master Plan for VNY was recently adopted by the Los Angeles City Council. A key feature of this plan is the continued protection of propeller aircraft use by the establishment of an Aviation Area for Propeller Aircraft. This feature and the other elements of the plan are not expected to cause an increase in airfield operations or change in type of aircraft beyond projected demand that is represented by the forecast in this Study.

Policies on land uses surrounding the airport may also indirectly affect operations as a result of potential new mitigation measures. Community plans in the vicinity surrounding VNY are subject to possible future amendments, which may influence land

use and population characteristics around VNY in a manner that will depend on final provisions contained within those Plans. For example, adverse impact analyses that result from allowing incompatible uses within the impact study area (65 CNEL or larger) can potentially lead to the adoption of restrictions on operations. Therefore any possible changes in aircraft operations will be predicated on impact analyses that are in turn dependant on amendments in those plans. Such potential amendments cannot be predicted at this time and any resulting changes in the forecast would have to done in future amendments to the Part 150 Study.

With respect to other efforts pertaining to land use issues there are 35 noise abatement and mitigation measures proposed in this Part 150 Study's Noise Compatibility Program (NCP). Certain of these measures address land use factors with the objective to reduce noise related impacts. In particular, Measure #3 of the NCP advocates the adoption of program measures to restrict the introduction of new housing within the projected 65 CNEL, unless such property is soundproofed and an avigation easement is established. Although this measure will not have any effect on aircraft operations the implementation of this measure will constrain the increase of additional land uses or population within the noise impacted areas.

The Part 150 Study also requires that a five-year (future case) forecast be made of aircraft operations. Staff utilized several sources of information to develop the aircraft operational forecasts for VNY in the 1992 forecast. These included existing regional forecasts from SCAG, state forecasts from the Division of Aeronautics, and national forecasts from the FAA. Concurrently, a survey was conducted, in conjunction with the Technical Committee, of airport tenants requesting their estimate of projected operations. In addition, regional and national business, manufacturing and economic trends were examined to determine their effect on VNY operations.

The pattern of overall operations had fluctuated at VNY over the years preceding the 1992 forecast, diminishing its applicability to a projected trend analysis of total operations. In 1976, operations reached a peak of 618,694 at VNY, falling to a low in 1988 of 468,779 operations, rising to 507,003 operations in 1989, up to 528,110 operations in 1990, and then falling again to 509,620 operations in 1991. Therefore, greater reliance was put on the other sources referenced in developing the forecast.

However, in the seven years preceding the current base year (2001), which was used in this report, the operational patterns were much more consistent. Therefore, a linear regression trend analysis was considered applicable and was calculated using the existing operational data from 1995 thru 2001 to develop the five-year forecast for the year 2006. Once again, this data was obtained from the current Oracle data base, which is in turn derived from ARTS data, used to prepare quarterly noise reports at VNY in compliance with the State of California variance requirements. This data was complemented by curfew and Passur data, as described previously.

There were adjustments made to the forecasted operations to account for various factors. Several of the aircraft types had sporadic low levels of annual operations, which resulted in negative growth in the forecast years. These were generally larger aircraft that are not frequently used at VNY and included the 707QN, 737-500, and BAC111. It is anticipated that these aircraft will no longer use the airport. The forecasts for these aircraft were set to zero to avoid the negative operation levels that would have otherwise been represented. A review of the actual operations of these aircraft in calendar year 2006 reflect a continued zero level of operations. In the unlikely event these type of aircraft do begin using the airport again then the forecasts would be revised in a subsequent amendment to the Study.

An adjustment was previously made (in the August 2001 draft of the VNY Part 150 Study) to reflect the expected increase in future years of a new aircraft type, the Boeing Business Jet (BBJ). This aircraft is assumed to replace a portion of future operations of other large aircraft types that currently operate at VNY. The 737-700 was designated an appropriate surrogate for the BBJ because the new aircraft is not yet listed in the INM version 6.0c. In the previous draft report operations had been shifted from these other aircraft types to the 737-700 category to represent the expected increase use of the BBJ. However, in the years 2000 and 2001, being used in the current base case, actual operations of the BBJ have been recorded to a sufficient level that it is no longer necessary to shift operations from other aircraft types to represent the BBJ. Therefore, this adjustment was not made in this report.

Another adjustment was made to the three Stage 2 aircraft types, the FAL20, GIIB, and LEAR25 that will be subject to the non-addition rule at VNY. This rule prohibits the addition of any more Stage 2 aircraft to be based at the airport. The operations for these aircraft were set to a fixed level of operations (that are forecasted to occur in 2002) and projected to remain at that level after the year 2002 to account for the prohibitions established as a result of the rule.

The following table illustrates the results of the trend analysis along with the fleet mix and levels of operations for each of the seven years preceding the forecast:

Table #4: Existing (1995-2001) and Forecasted (2002-2006) Aircraft Operations

9/30/02

	Annual operations from 1995 to 2001							Forecasted operations from 2002 to 2006				
INM Type (Version 6c)	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
707-QN*	0	0	2	1	1	0	0	0.0	0.0	0.0	0.0	0.0
727-Q7/Q15 (727EM1)**	166	213	174	203	128	117	112	101.8	87.6	73.3	59.0	44.7
737-300/3B2	32	29	17	0	0	27	34	17.7	17.2	16.7	16.1	15.6
737-400/500*	6	6	8	0	0	1	2	0.0	0.0	0.0	0.0	0.0
737-700	0	0	0	0	13	119	275	212.0	250.4	288.9	327.3	365.8
737-QN (737-N17)**	6	4	1	0	0	1	11	4.5	4.8	5.1	5.4	5.7
757-PW	0	0	0	1	0	0	4	2.5	2.9	3.3	3.8	4.2
A319/320	2	3	2	0	0	0	3	0.8	0.6	0.5	0.3	0.1
A3/A7D/KC135 (military)	80	24	133	163	261	87	99	165.6	176.7	187.8	198.9	210.0
BAC111*	108	137	143	63	13	4	2	0.0	0.0	0.0	0.0	0.0
BAE146	0	0	0	3	0	0	0	0.4	0.4	0.4	0.4	0.4
CIT3	182	226	378	341	359	427	386	470.6	506.1	541.7	577.2	612.8
CL600/CL601/CLREGJ	648	580	623	1,050	1,283	2,271	2,854	2,852.7	3,233.4	3,614.1	3,994.9	4,375.6
CNA500	1,020	971	898	1,336	1,667	1,664	1,425	1,764.8	1,885.2	2,005.7	2,126.1	2,246.6
CNA55B	742	559	502	823	1,022	829	842	953.9	1,002.4	1,051.0	1,099.5	1,148.1
CNA560***	0	0	0	0	0	0	238	258.6	276.3	294.0	311.8	329.5
CNA750	206	388	262	482	975	1,130	1,102	1,347.0	1,521.4	1,695.8	1,870.3	2,044.7
DC8QN (DC8-70)**	0	1	0	0	1	0	0	0.2	0.2	0.2	0.1	0.1
DC9Q7/Q9 (DC93LW)**	32	83	138	132	108	19	17	46.5	39.3	32.0	24.7	17.5
FAL20****	48	49	22	200	230	132	228	260.7	260.7	260.7	260.7	260.7
GII****	1,943	1,953	2,211	3,314	1,667	2,933	2,507	2,805.3	2,805.3	2,805.3	2,805.3	2,805.3
GIIB	1,292	1,772	1,733	1,563	993	2,257	2,026	2,009.5	2,096.4	2,183.2	2,270.1	2,356.9
GIV	1,060	1,208	1,119	1,295	889	3,005	2,892	2,904.2	3,220.7	3,537.2	3,853.6	4,170.1
GV	0	0	0	0	0	273	436	366.0	432.2	498.4	564.6	630.8
IA1125*	308	555	577	80	140	145	104	5.8	0.0	0.0	0.0	0.0
LEAR25****	4,955	5,206	5,288	5,089	6,833	5,870	5,546	6,204.8	6,204.8	6,204.8	6,204.8	6,204.8
LEAR35	4,211	4,796	5,090	5,970	8,109	9,619	9,573	10,874.2	11,901.1	12,927.9	13,954.7	14,981.6
MD81/83	6	14	30	46	44	54	61	73.5	82.8	92.1	101.4	110.6
Jet Subtotal***	17,051	18,778	19,351	22,157	24,736	30,985	30,779	33,704	36,009	38,320	40,631	42,942

Table #4 (continued): Existing (1995-2001) and Forecasted (2002-2006) Aircraft Operations

	Annual operations from 1995 to 2001							Forecasted operations from 2002 to 2006				
INM Type (Version 6c)	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
BEC58P	54,671	55,832	58,618	57,618	58,342	45,838	43,225	45,649.1	43,699.1	41,749.1	39,799.1	37,849.1
C130	10	7	11	7	19	29	0	15.0	15.8	16.6	17.4	18.1
CNA172	61,692	53,618	51,510	56,649	79,561	73,879	71,200	77,886.4	81,354.0	84,821.7	88,289.4	91,757.1
CNA206	31,791	27,375	29,688	29,644	35,053	27,040	27,021	28,285.5	27,942.1	27,598.8	27,255.5	26,912.1
CNA441	40,378	46,024	47,525	57,618	51,211	39,343	24,064	35,363.9	33,270.5	31,177.0	29,083.6	26,990.2
CVR580	0	0	0	30	0	0	14	12.1	13.6	15.1	16.6	18.1
DC3	9	9	3	17	8	13	2	7.6	7.3	7.0	6.7	6.4
DHC6	9,379	9,197	8,532	9,092	12,433	9,946	8,026	9,706.3	9,754.2	9,802.0	9,849.8	9,897.7
EMB120*	216	229	379	134	202	42	69	40.0	4.6	0.0	0.0	0.0
GASEPF	34,203	36,547	32,688	36,753	35,483	29,677	31,607	31,175.0	30,505.9	29,836.9	29,167.8	28,498.8
GASEPV	55,247	56,379	62,543	55,994	55,288	45,245	47,273	46,360.3	44,451.5	42,542.8	40,634.0	38,725.2
HS748A	18	64	15	119	240	288	179	297.3	338.7	380.1	421.4	462.8
SD330	2,034	2,811	2,652	2,206	2,045	1,331	1,741	1,481.7	1,322.8	1,164.0	1,005.1	846.2
SF340	0	51	30	0	76	25	55	56.8	62.5	68.2	73.9	79.7
Propeller Subtotal***	289,649	288,142	294,194	305,881	329,961	272,698	254,476	276,337	272,743	269,179	265,620	262,061
Touch & Go (est.)	140,787	140,796	143,611	148,972	161,612	137,247	129,725	140,067	139,271	138,475	137,680	136,884
Helicopters (est.)	52,618	52,643	53,750	56,066	60,693	51,729	48,685	52,786	52,547	52,308	52,070	51,831
Grand Total***	500,105	500,360	510,906	533,075	577,002	492,659	463,665	502,893	500,570	498,283	496,001	493,718

* These operations were set to zero whenever the trend analysis calculated them as negative (below zero).

** The following four jet aircraft types: 727-Q7/Q15, 737-QN, DC8QN, and DC9Q7/Q9 are Stage 2 aircraft that were phased out of operation in the year 2000; each of these aircraft types have corresponding Stage 3 hushkitted engines (shown in parentheses) that were used in modeling for the years 2000 thru 2006.

***The CNA560 is a new aircraft type with no previous operations upon which a trend analysis could be conducted; therefore, in lieu of a trend analysis the percentage change in each projected year for all jet operations was applied to this category to generate forecasted operations.

**** Operations for 2003 and thereafter for these Stage 2 aircraft types (under 75,000 pounds) were frozen at 2002 levels to account for the non-addition rule.

***** Jet or propeller subtotals may differ due to rounding of individual entries. Grand Total deletes Burbank flyover operations that were previously shown in the 9/25/2000 operations table for the VNY Part 150 Study; the FAA no longer includes these types of operations in the VNY tower counts.

2) Alternative Noise Control Scenarios

The following comments pertained primarily to the alternative scenarios that were considered in the 1992 report. The alternatives were developed and considered to reflect good planning practices and to comply with Part 150 guidelines to address different approaches to noise mitigation. Reference is made here to provide background for the current study. Although the quantifiable analyses that are referenced here are predicated on dated information they nonetheless provide a useful comparative basis between each of the scenarios that were originally considered because the same operational parameters were applied to each of the alternative scenarios. Discussion of all alternatives remains relevant in this study because, as indicated in the current (2001) NCP, scenario #9 remains the preferred alternative. Reference should be made to Volume 1 of 3 of the Background Appendices for the full analysis of each of the alternatives.

A wide range of alternative noise control scenarios was considered during the Study. These included the "Airport Noise Management Guidelines" prepared by the California Aviation Council, an FAA report entitled "Airport Noise Control Strategies" (Report No FAA-EE-86-02), and the alternative measures listed in Section B150.7(b) of the FAR Part 150 Regulations. Based on review of these sources, as well as discussion among the Technical and Steering Committees, a list of 20 alternative scenarios were developed that were tailored to the conditions at VNY. The Technical Committee chose seven from this list. The seven alternative scenarios were analyzed and four more alternatives were added to the list by the Steering Committee in 1991 making a total of 11 alternative noise control scenarios. Another scenario (#12) was recommended by an Ad Hoc Committee, which essentially advocated the adoption of several mitigation measures.

The Integrated Noise Model (INM) was utilized to run noise contour maps for each of the 11 scenarios, as well as the base case and the two five year projected cases for the 1992 report. The first five-year projection was developed using a forecasted annual growth rate of 8% for jet operations or approximately 47% increase over five years. The second five-year projection, which was chosen by the BOAC for use in the Official NEM, used an annual growth rate of approximately l4.9% for jet operations to achieve a l00% increase over five years. All other parameters remained the same in each five-year projection presented in the 1992 report.

More detailed information on the operational parameters and time of day of operations for these base cases and the 11 alternatives are contained in Volume 1 of 3 of the Background Appendices. Also, since the input parameters for the 11 scenarios were derived by applying variations to the five year projection, a second Scenario #9 INM was done using the second five year projection. This was only done for Scenario #9 because it was already established as the preferred alternative. As indicated, this second Scenario #9, predicated on Forecast #2, was adopted as the Official NEM in 1992. A land use impact analysis was also conducted using the contours for each of the 11 scenarios, the base case, the two five year projections, and the second Scenario #9. The detailed land use impact analyses for the scenarios are in the Background Appendix.

Alternative Noise Control Scenarios

The following is a list of the Alternative Noise Control Scenarios that were considered in 1992. As indicated, scenario #9 remains the preferred alternative in the current NCP.

Scenario No. 1 The first alternative would modify the existing restrictions on touch and go (repetitive) training operations. Currently (in 1992 and 2001) touch and go operations are prohibited each day of the week between 10:00 p.m. and 7:00 a.m., from June 21 to September 15, and between 9:00 p.m. and 7:00 a.m. from September 16 to June 20. This scenario would extend the hours to 7:00 p.m. to 8:00 a.m. on weekdays, and would further prohibit touch and go operations 24 hours a day on weekends and holidays. (This alternative was contained in BOAC Resolution No. 16022.)

Scenario No. 2 Currently (in 1992) no aircraft (except for military, law enforcement, and emergency operations) could depart VNY between 11:00 p.m. and 7:00 a.m. if their takeoff noise level exceeds 74 dBA.* This scenario would prohibit takeoff of all aircraft, (once again excluding military, law enforcement, and emergency operations) between 11:00 p.m. and 7:00 a.m. of every day. (This alternative was suggested by the City Council.) (Note: the current (2001) curfew has been amended to 10:00 p.m. to 7:00a.m.)

Scenario No. 3 The third scenario would reduce takeoff thrust/power settings, within safety levels, for all jets departing VNY. Modified noise abatement procedures created by the National Business Aircraft Association would be used for this scenario.

Scenario No. 4 In the fourth scenario only Stage III aircraft would have been allowed to operate after the year 1994.

Scenario No. 5 The 74 dBA* maximum noise limit for takeoffs, which is currently in effect from 11:00 p.m. to 7:00 a.m., would be extended to apply to takeoffs between 7:00 p.m. and 7:00 a.m. (Note: the current curfew was amended to 10:00 p.m. to 7:00a.m.)

Scenario No. 6 The existing maximum takeoff limit of 74 dBA*, from 11:00 p.m. to 7:00 a.m., would be maintained and an additional maximum takeoff limit of 78 dBA* would be established for the remainder of the day from 7:00 a.m. to 11:00 p.m. (Note: the current (2001) curfew has been amended to 10:00 p.m. to 7:00a.m.)

Scenario No. 7 The maximum takeoff limit of 74 dBA* would apply 24 hours a day.

Scenario No. 8 Takeoff thrust/power settings, within safety levels would be reduced for all departing jets, and all aircraft with takeoff noise levels exceeding 78 dBA* would be prohibited. Those aircraft exceeding 78 dBA* were not replaced by any other aircraft in this scenario. Therefore, the jet operations level in this scenario was lower than the operation levels forecasted in the remaining ten scenarios.

Scenario No. 9 Takeoff thrust/power setting, within safety levels, would be reduced for all departing jets, and all aircraft with takeoff noise levels exceeding 74 dBA* would be prohibited between the hours of 10:00 p.m. and 7:00 a.m.

Scenario No. 10 Takeoff thrust/ power settings, within safety levels, would be reduced for all departure jets, and all aircraft with takeoff noise levels exceeding 78 dBA* would be prohibited. Aircraft exceeding 78 dBA* were replaced with similarly sized aircraft in this scenario, to keep the same operation levels as in scenarios 1 through 7 and 9.

Scenario No. 11 The maximum takeoff limit of 74 dBA* would apply from 8:00 a.m. to 10:00 p.m. and jet operations would be prohibited from 10:00 p.m. to 8:00 a.m. The current limit of 74 dBA would remain in effect for all non-jet operations from 11:00 p.m. to 7:00 a.m. (Note: the current curfew has been amended to 10:00 p.m. to 7:00a.m.)

Scenario No. 12 This scenario was recommended by an Ad Hoc Committee after the analyses were conducted on the other scenarios. It essentially advocated the adoption of mitigation measures #13, 15, 18, 19, 20, 21, 24, and 26 in the current (2001) NCP.

*FAA Advisory Circular 36-3E is used to identify the dBA level for all aircraft for purposes of modeling each scenario.

3) Preferential Runway Use Alternative

In compliance with FAR Regulations Part 150, Section B150.7(b)(3) reference is made to Section 4 of Los Angeles Ordinance #155,727, "The Van Nuys Noise Abatement and Curfew Regulation". That section states: "Between the hours of 11:00 p.m. and 7:00 a.m. of the following day, weather and traffic permitting, all aircraft shall depart on Runway 16R and shall arrive on Runway 34L of Airport unless instructed otherwise by the Federal Aviation Administration Air Traffic Controller." During the remaining hours most departures (approximately 80% average) are to the south from Runway 16R depending on prevailing meteorological conditions. This is the preferred procedure, particularly for jets, because it allows the aircraft to gain altitude over the golf course and Sepulveda Flood Control Basin, which are located south of the airport, before proceeding on to their destination and flying over more sensitive areas.

VNY has two parallel runways, which are oriented north/south. Runway 16R/34L is an 8,000-foot runway where most operations take place. To the east of this runway is Runway 16L/34R, which is half the length at 4,000 feet. This shorter runway is used primarily for touch and go training operations with piston aircraft. Because of its shorter length it is not feasible for jet aircraft to use this runway. Therefore, with respect to consideration of preferential runway alternative it was not deemed a viable option.

4) Qualitative Benefit and Economic Impact Analyses

A Qualitative Benefit Analysis was conducted on the 11 alternative noise control scenarios described in the 1992 report. Once again, reference is made here because of the usefulness of the comparative analysis it provides, recognizing that it is predicated on dated information.

Each scenario was examined in terms of its effectiveness in reducing noise within the 65 CNEL, the effect on single event noise, airport operations, impacts to users of the airport, the potential for litigation, and financial costs. One category that lent itself to some quantifiable criteria was the one measuring the effectiveness of reducing noise within the 65 CNEL. This criteria indicated that no benefit was achieved which reduced the 65 CNEL less than 5%; a minor benefit was realized if the 65 CNEL were reduced between 5%-50%; a moderate benefit was defined as a reduction between 50%-90%; and highly beneficial results would be achieved if the scenario reduced the 65 CNEL over 90%.

The remaining categories were evaluated qualitatively by estimating the relative benefit or impact in comparison to other scenarios. The evaluation also contained a quantified description of the financial costs related to Alternatives #7 and #11. Whereas these alternatives had the greatest potential for financial impact to aircraft owners, the evaluation was expanded to demonstrate the specific costs of existing and replacement aircraft. The costs to aircraft owners would probably be considerably higher than those that were evaluated since financing costs were not included and the replacement costs were those of used aircraft existing on the airport. The purchase cost of new aircraft would most likely be higher. The results of these evaluations are summarized in Table #5 and in the Background Appendix.

An Economic Impact Analysis was also done for two of the 11 alternative scenarios. These two were the Touch & Go Restriction which would have imposed a curfew on touch and go operations during specified periods, and the second was a nighttime curfew on all aircraft. A survey was conducted among tenants at the airport to obtain their estimates of how these proposed curfews might affect their operations. These results were also taken as the basis for an expanded economic analysis that correlated the results of this survey to a more comprehensive economic analysis done previously by Wilbur Smith & Associates for the whole airport. The results of the survey and the expanded economic analysis are contained in the Background Appendix

The Technical Committee and Steering Committee considered the findings of the Qualitative Benefit Analysis and the Economic Impact Analysis in developing and evaluating the alternative scenarios. The purpose of the analyses was to provide guidance to the Committees in weighing the pros and cons of each alternative. This was part of the process to attempt trade offs between the interests of all parties involved and strike a balanced approach that would be the most effective and equitable.

Table #5: QUALITATIVE BENEFIT ANALYSIS (1992)

Alternative Scenario	Noise Reduction Within 65 CNEL*	Single Event Noise Effect	Airport Operations	User Impacts	Potential Litigation	Financial Costs**
#1 Touch & Go Restricted	No Benefit	Minor Benefit	Moderate impact on other airports	High impact on training	Probable	Moderate
#2 Nighttime – all aircraft curfew	Minor Benefit	Highly Beneficial at night	High impact on other airports	Moderate impact reduced flexibility	Possible	High – lost business
#3 NBAA noise abatement procedures	Minor Benefit	Moderately Beneficial	No Impact	Minor impact on ATC and pilots	Unlikely	None
#4 Stage 3 aircraft only	Highly Beneficial	Highly Beneficial	High Impact from reduced utility	Moderate Impact	Possible	High – replace high # jets
#5 Extend 74 dBA night-time curfew	Minor Benefit	Moderately Beneficial at night	Moderate Impact shifting ops	Moderate to high impact flexibility	Possible	Moderate
#6 Daytime limit of 78 dBA	Highly Beneficial	Moderately Beneficial 24 hour	Moderate Impact from reduced utility	Moderate to high impact	Probable	High – replace high # jets
#7 24 hour limit of 74 dBA	Highly Beneficial	Highly Beneficial 24 hour	High Impact from reduced utility	High Impact reduced options	Highly Probable	Very High-replace very high # jets
#8 NBAA & 78 dBA daytime limit, without replacements	Highly Beneficial	Moderately Beneficial	High impact reduction in ops	High impact reduced options minor to ATC	Probable	Very High no replacements lost business
#9 NBAA & extend night-time 74 dBA curfew	Moderately Beneficial	Moderately Beneficial	Minor impact shifting in ops	Minor impact on ATC and pilots	Unlikely	Low
#10 NBAA & 78 dBA day-time limit, with replacements	Highly Beneficial	Moderately Beneficial	Moderate Impact from reduced utility	Moderate Impact	Probable	High – replace high # jets
#11 Limit of 74 dBA from 8am-10pm No jets from 10pm-8am	Highly Beneficial	Highly Beneficial	Very High Impact	Very High Impact	Highly Probable	Very High

*Criteria for noise reduction: No Benefit: Under 5%; Minor Benefit: 5% - 50%; Moderate Benefit: 50% - 90%; Highly Beneficial: Over 90%
**See attachment for additional economic data

Table #6 ECONOMIC IMPACT ANALYSIS (1992)

The following list contains aircraft that would be prohibited from operating at VNY if a 74 dBA limit were imposed. Likely replacement aircraft, based on similar size and/or weight, are also listed along with their replacement costs (from County Assessor's data obtained prior to 1992). The difference between replacement average cost and existing average value of effected aircraft illustrates the net costs that would be incurred by aircraft operators, under the given assumptions.

(A) Number	(B) Existing Aircraft	(C) Replacement Aircraft	(D) Existing Avg. Value	(E) Replacement Avg. Cost	(F) Net Cost per Aircraft	(G) Net Total Cost All Aircraft
9	GII	GIV	5,043,000	19,405,000	14,362,000	129,258,000
2	GIII	GIV	12,859,000	19,405,000	6,546,000	13,092,000
7	HS125	Falcon 20 (w/ TFE731 engines)	2,612,000	2,472,000	(140,000)	(980,000)
1	Lear 23	Lear 35	349,000	1,788,000	1,439,000	1,439,000
4	Lear 24	Lear 35	349,000	1,788,000	1,439,000	5,756,000
6	Lear 25	Lear 35	778,000	1,788,000	1,010,000	6,060,000
2	Sabre 40	Lear 55	586,000	3,568,000	2,982,000	5,964,000
3	*B727	B757-20	4,848,000	**38,000,000	33,152,000	99,456,000
4	Falcon 20 (w/ CF700 engines)	Falcon 20 (w/ TFE731 engines)	1,578,000	2,472,000	894,000	3,576,000
1	*DC-9	B737-300	3,500,000	**29,000,000	25,500,000	25,500,000
4	Jetstar	Chal CL601	2,333,000	10,051,000	7,718,000	30,872,000
1	*BAC1-11	B737-300	3,000,000	**29,000,000	26,000,000	26,000,000

Formulas:
(F) = (E) – (D)
(G) = (F) x (A)

Subtotal under 75,000 lbs. Aircraft	195,037,000
*Subtotal over 75,000 lbs. Aircraft	150,956,000
Total:	345,993,000

** Estimated replacement costs for aircraft over 75,000 lbs., which are not based in VNY; all other aircraft listed are based in VNY.

4) Helicopter Study

In addition to jet aircraft operations, helicopter activity around VNY plays an integral role in the noise problems at the airport. Although, it should be noted that the sound energy that helicopters generate does not necessarily increase the size or contribute to the extent of the noise impact contour. This is because jet operations tend to dominate and subsume the noise from other non-jet operations. Nonetheless, helicopters present a nuisance factor for community residents resulting from the unique slapping sound caused by the helicopter blades, as well as the low altitude at which many of them often fly. The same issues remain in the current Study and the previous analysis is still relevant.

Helicopters were repeatedly cited in the first Public Workshop for the Part 150 Study as a key issue to be addressed. In a Community Opinion Survey conducted for the 1992 report among 500 households around VNY, one of the questions asked in the survey was which aircraft type bothers people the most. The highest response was for helicopters. Therefore, it was determined that a study should be done to document the average helicopter flight patterns, number of operations by type or model of helicopter, and identify specific problem areas along with possible solutions. The results of the Helicopter Study, which is contained in Volume 1 of 3 of the Background Appendices, listed the number of helicopter operations that were conducted in the summer of 1990.

The Helicopter Study displayed the operations by separating them into approaches and departures for four time periods: 7:00 a.m. – Noon, Noon-5:00 p.m., 5:00 p.m.-10 p.m., and 10:00 p.m.-7:00 a.m. The survey indicated that the highest proportionate level of helicopter departures occurs in the afternoon hours between noon and 5:00 p.m., and the greatest number of helicopter approaches or landings take place in the evening hours between 5:00 p.m. and 10:00 p.m. The Study also documented the level of use attributed to eight established routes used by helicopter operators and the type of helicopters used

The most frequently used route for approaches and departures is along Bull Creek, (displayed as Route E in Volume 1 of 3 of the Background Appendices, page A15 of Section 4) which extends north and south along the western edge of VNY. The kinds of helicopters used were the 206B/206L which are the Bell Jetranger and Longranger, the AS350/355 or Aerospatiale A-Stars, the R22/H300/500 which are Robinson and Hughes aircraft, the 4l2/214/205, all Bell Aircraft, and the A109/B222 which are Augusta and Bell aircraft. The most often used helicopter at VNY were the Bell Jetranger and Longranger. Very few operations were conducted during the night (10:00 p.m. - 7:00 a.m.), relevant to the other time periods, and these are often done by public service agencies, such as Police and Fire Departments.

Among the issues identified in the study was the public service fleet having older equipment, the frequency of their flights, and the routes they use. Another concern was the tour operator's frequency of flights during evening and night times, particularly on weekends. Also, helicopter operations not flown on recommended routes was an issue cited. Mitigation measures were incorporated into the NCP to address these issues identified in the study. Refer to the NCP contained in this report for all of these mitigation measures. As indicated the tabular information and full text of the Helicopter Study is contained in Volume 1 of 3 of the Background Appendices.

III) Public Participation and Consultation

As previously indicated in the discussion under the Technical and Steering Committees, the primary vehicle for receiving and considering input from the community was during comment sections of the meetings for these two committees. Complementary to these meetings was the public notification and consultation process employed to ensure that all those interested in participating in the Part 150 Study had the opportunity to do so. In addition, a Public Opinion Survey was conducted to further elicit comments focused on specific questions developed by the Technical and Steering Committees.

A) Consulted Agencies, Groups, and Individuals

The agenda for each Steering Committee meeting was sent to a mailing list of agencies, groups, and individuals who were directly or indirectly involved with the development of the Part 150 Study or expressed interest in the Study. The mailing list included individuals who had attended previous meetings related to the Study or otherwise expressed interest in the Study. The names and addresses of these individuals are listed in Volume 3 of 3 of the Background Appendices. The list also included groups around VNY and throughout the San Fernando Valley, as well as local libraries, local businesses, newspapers, and various planning and governmental agencies related to the Study, including the City and County Planning Departments, SCAG and the FAA with those agencies represented on the Technical Committee.

Each Technical and Steering Committee meeting was also noticed in the Calendar Section of the Valley Daily News. Also public notices and public display advertisements were placed in the Daily News and Los Angeles Times Valley Edition to afford the broadest opportunity for public awareness and involvement in the Study. In particular, the Public Workshop held on December 2, 1991 was the subject of extensive public outreach. This was an important meeting because a number of significant land use and airfield operational issues had crystallized.

The Steering Committee wanted to devote a workshop to receiving input on the direction the Study had focused upon. In addition to the regular mailing list, public notification, and a full display advertisement in the Daily News and Los Angeles Times notifying the public of the meeting and the issues to be discussed, a mass mailout was done to over 15,000 households around the Van Nuys Airport to inform them of this meeting.

Copies of all written materials received during the most recent planning years of 2000 and 2001 are contained in volume 3 of 3 of the Background Appendices, along with responses prepared by LAWA. Proof of publications for notifications of public meetings held during this period are also contain in this Appendix.

Consultation with State Officials was achieved through the California Department of Transportation's Division of Aeronautics. Richard Dyer, with the Division of

Aeronautics, was a member of the Technical Committee for the Study, which provided input prior to the 1992 submittal of the VNY Part 150 Study. His extensive involvement was manifested in the Technical Committee meeting minutes contained in the Study Background Appendices and summarized in the text of the document. Mr. Dyer was also appointed as a non-voting member of the Steering Committee in 1996, affording another opportunity for consultation with the State on the Study.

A full agenda packet, equivalent to what was provided each Steering Committee member, was sent to the Office of the Division of Aeronautics for each of the Steering Committee meetings held during the most recent planning effort, from April 2000 to August 2001. However, no written input was received concerning the Study during this period. A copy of the main report of the VNY Part 150 Study was sent to the State Division of Aeronautics, with a letter soliciting their input.. Refer to volume 3 of 3 of the Background Appendices.

The VNY airport and surrounding area are wholly contained within two local planning agencies, which are the Los Angeles City Planning Department and Los Angeles County Planning Department. A City Planner, Mark Woersching from the Los Angeles City Planning Department was assigned to the VNY Part 150 Study and attended most of the recent Steering Committee meetings held from April 2000 to August 2001. He received a full agenda packet equivalent to what was sent to each Steering Committee for each scheduled meeting to provide input. Neither he nor anyone else from the City Planning Department ever provided any written input on the Study during this time period. A copy of the main report of the VNY Part 150 Study was sent to the Los Angeles City Planning Department, with a letter soliciting their input. Refer to volume 3 of 3 of the Background Appendices.

The Los Angeles County Planning Department was also afforded similar opportunities to provide input concerning the Study. In addition, a representative of the County Supervisor for this area, Zev Yaroslavsky, was a member of the Steering Committee and provided input on the Study as illustrated in the meeting minutes and summaries of the minutes. A copy of the main report of the VNY Part 150 Study was sent to the Los Angeles County Planning Department, with a letter soliciting their input. Refer to volume 3 of 3 of the Background Appendices .

Representatives of the Los Angeles City and Los Angeles County Planning Departments were also members of the Technical Committee prior to the 1992 submittal of the VNY Part 150. A representative of the FAA was also a member of the Technical Committee. Their input at that time is manifested in the minutes of the Technical Committee meetings contained in the Study appendix and summarized in the text of the document. . A copy of the main report of the VNY Part 150 Study was sent to the FAA tower chief at VNY, with a letter soliciting their input. Refer to volume 3 of 3 of the Background Appendices .

In addition to these local planning agencies a representative of the regional planning agency, the Southern California Association of Governments (SCAG), also was a member of the Technical Committee. A full agenda packet, equivalent to what was provided each Steering Committee member, was sent to Mike Armstrong, a planner with SCAG, for each of the most recent meetings. However, no written input was received from him or from SCAG concerning the Study during this period.

B) Telephone Opinion Survey

To further focus the concerns of the community, a survey was conducted randomly to over 500 households in 12 zip codes surrounding VNY. The survey was done by telephone by a professional consulting firm with extensive experience in such surveys. The survey was based on a questionnaire, developed by the consulting firm of CommuniQuest, the Technical Committee, and Steering Committee, which consisted of 23 questions designed to obtain both generalized profiles of the participants and specific concerns related to the airport.

The Steering Committee utilized the results of the survey to pursue some of the more sensitive issues in greater detail, such as the Helicopter Study, as well as provide general guidance in the formulation of the most appropriate alternative noise control scenarios. The report on the Community Opinion Survey, dated August, 1990, is contained in the Volume 1 of 3 of the Background Appendices. Many of the issues addressed in that survey continue to prevail in the current analysis, as reflected in noise complaints received as well as anecdotal input from the community, and, therefore, the survey findings provide an historical context by which to compare and evaluate contemporary approaches to mitigation.

C) Summary of Minutes of Public Meetings and Workshops

The minutes of each Technical and Steering Committee meeting are summarized in the following pages, including the two Public Workshops held on April 25, 1989 and December 2, 1991. The full texts of these minutes are contained in a separate volume (2 of 3) of the Background Appendices. The summaries are intended to give highlights of what issues and topics were discussed by committee members and individuals from the public during each meeting. More detailed comments from the community can be referenced in the full minutes.

Summary of Steering Committee Meeting Minutes

December 1, 1988

The first scheduled meeting of the VNY Part 150 Project Steering Committee was conducted on December 1, 1988. The Steering Committee reviewed an overview summary of the Part 150 Airport Noise Compatibility and Land Use Program. The Committee members raised questions regarding the intent of the Part 150 process, the geographic boundaries for the program and the projected time-line for completion.

The Committee elected Department of Airports Commissioner Samuel Greenberg as Chairman of the Committee and the representative of the second Council District as Vice-Chairman. The Project Coordinator was introduced to Steering Committee members. A brief presentation was conducted by the Project Coordinator.

February 7,1989

The Steering Committee identified issues and concerns that should be addressed in the FAR Part 150 process. The list of issues and concerns included a discussion of the number and types of future VNY aircraft, mitigation of existing problems, establishing direction for airport growth, intermediate and long term use and development, the size and impact of airport growth, and increasing compatibility between the airport and surrounding community. The Committee viewed a real time demonstration of aircraft noise based on a noise demonstration program developed by Dr. David Dubbink. The committee discussed the manner in which a similar system could be installed at VNY to measure take-off and sideline noise levels.

March 14,1989

The Steering Committee discussed the format of scheduled meetings and methods to ensure greater public participation. The Committee discussed the role and involvement of the Technical Committee. The Committee discussed a City Council directive to have a nighttime curfew considered as an alternative to the Part 150 Program. The Committee reviewed a draft protocol for dealing with the media and determined that the VNY Project Administrator and Project Coordinator should assume responsibility for media coordination and dissemination. A scheduled presentation on the CNEL noise measurement was provided by a private citizen who was an acoustical consultant.

April 25,1989

The Steering Committee was provided an overview summary of the Part 150 Study process as it pertains to residents and pilot groups. The Project Coordinator introduced the director of

CommuniQuest, a consulting firm who conducted a public workshop for over 120 participants. The people attending the workshop represented an approximately equal number of local residents and aviation enthusiasts.

The purpose of the workshop was to encourage citizen input and identification of issues and concerns that affect residents living near the airport to enhance the Steering Committee and Technical Committee's understanding of these community concerns. LAWA staff indicated that the issues and concerns presented during the meeting would be made available to LAWA management, the Steering Committee and Technical Committee to assist in the formulation and planning of the VNY Part 150 Study.

November 13,1989

The Committee reviewed a written report that summarized the results of the April 25, 1989 workshop. The report discussed the issues of noise and safety considerations related to aircraft operations, land use and development in the Airport environs, the need for improved communications between the Airport, community and City Departments and other environmental issues (i.e., traffic, air quality). The Committee reviewed the format of a proposed Community Opinion Survey that was prepared by CommuniQuest Marketing. The Committee added questions to the survey regarding noise impact, noise complaint procedures and individual perceptions of aircraft noise.

The Project Coordinator discussed the need for historical and forecast aircraft operational data and described a survey questionnaire being developed by LAWA staff, that would be distributed to all fixed-base operators and aircraft service operators. The Committee discussed the details of a third survey that would assess potential economic impacts resulting from implementation of two proposed curfews that would restrict touch and go repetitive procedures and restrict nighttime operations for all aircraft.

The Project Coordinator advised the Committee regarding the proposed reuse of a 91-acre site on the northwest corner of the airport that was being vacated by the National Guard. The Committee voted to recommend the Board of Airport Commissioners evaluation of the site and possible development of aviation and non-aviation uses on the site. The Part 150 Project Administrator discussed noise monitoring that was being conducted at VNY by Landrum & Brown Noise Consultants, and the use of monitoring results to prepare noise exposure maps and identify areas of noise-sensitive land uses.

January 10, 1990

The Committee reviewed and discussed revisions made by CommuniQuest Marketing to the Community Opinion Survey. After considerable discussion, the Committee determined the Community Opinion Survey should be revised to 1) indicate the survey pertains to various issues concerning neighborhoods in the area of Van Nuys Airport, 2) provide a lead-in to the questions concerning the airport, 3) add a wrap-up question concerning whether or not the

respondent wanted to comment on additional areas, 4) add a qualifying question of employment status, 5) delete reference to "aircraft collision risk", 6) ask respondent to identify primary concerns, 7) rank respondents according to their general impression of the airport, and 8) offer a noise complaint phone number to interested persons. The Committee concluded the meeting by viewing a video presentation of organ transplant flight operations.

August 29,1990

The Committee reviewed the written results of the Community Opinion Survey conducted during January and February 1990. The Committee voted to accept the survey results subject to inclusion of a statement that indicated that while the survey was conducted over a broad area and public perception of the Airport was generally positive, the survey nonetheless, indicated that in certain areas near the Airport, significant numbers of people were concerned about aircraft noise and safety.

The Committee reviewed a base case map prepared by the project noise consultant Landrum & Brown. The Committee reviewed a five year base case projection map and selected seven alternative scenarios, from a list of 20 reviewed by the Technical Committee. Discussion occurred on the legality of some of the alternatives and whether two of the scenarios that were suggested by the Board of Airport Commissioners and the Los Angeles City Council should be evaluated separately from the scenario analysis. The Committee directed that the seven alternative scenarios be submitted to Landrum & Brown for analysis.

January 9, 1991

The Committee reviewed a printout of jet aircraft IFR (instrument flight rule) departures from January 1, 1989 through August 14, 1989. Gerald Silver of the Encino Homeowners Association engaged in a discussion with the Steering Committee of the computer database used to gather the departure information. He concluded his discussion with a recommendation to 1) permit a maximum 74 dBA single event noise level during daylight hours based on the takeoff noise levels set forth in FAA Advisory Circular (AC) Part 36, and 2) prohibit intersection takeoffs and formation takeoffs. Concern was expressed regarding the impact of an intersection takeoff ban on IFR departures. The Committee determined that actual field noise data from a permanent noise monitoring system should also be used for VNY rather than only relying on FAA AC 36 measurements. The Committee reviewed a letter submitted by the Van Nuys Airport Ad Hoc Advisory Noise Working Group that provided recommendations for resolving noise complaints around VNY.

The Project Administrator introduced the seven noise control scenarios selected by the Steering Committee during the August 29, 1990 Steering Committee meeting. The results of the noise control scenario analyses were provided. The Committee discussed the different noise levels existing between base case, five-year forecast, and selected scenarios. The Committee discussed potential benefits to be derived from specific alternatives. The Project

Administrator advised the Committee that a helicopter study that considered flight track and low overflight issues would be presented to the Committee in the future.

The Committee requested LAWA staff to take the steps necessary to provide information to the Board of Airport Commissioners regarding implementation of noise abatement departure procedures prior to completion of the Part 150 Study. The Committee requested staff to conduct analyses of three additional scenarios. These included variations on aircraft utilizing noise abatement procedures upon departure, either from the National Business Aviation Association (NBAA) or procedures recommended by the manufacturer.

February 27, 1991

The Committee observed a noise and operations monitoring system demonstration presented by Tony Florence of Technology Integration. Mr. Florence indicated that the system gathers, evaluates and distributes information for noise abatement programs, including predictions of the potential impacts of proposed noise abatement procedures, assessment of noise abatement programs, data for program enforcement and information of benefit to noise impacted communities. The Committee discussed the characteristics of the system and discussed the benefits to be derived from employing a similar system at VNY.

Robert Beard, the Department of Airport's Noise Abatement Officer provided a discussion on the capabilities of the City's existing noise monitoring system at VNY. Mr. Beard indicated that the existing system is capable of performing many of the functions demonstrated by the Technology Integration representative. The Project Administrator advised the Committee to consider what functions need to be performed at VNY. The Project Administrator indicated that the base case and five-year Noise Exposure Maps should be submitted to the FAA for review and approval in advance of the Noise Compatibility Program. A preliminary copy of the VNY Part 150 Noise Compatibility Program was distributed for Committee discussion.

June 18, 1991

The Committee voted to approve Department of Airports Commissioner Robert A. Chick as chairman, as the result of Chairman Samuel Greenberg passing away. The Committee continued its discussion of the Noise Exposure Maps (from the February 27, 1991 meeting). Discussion ensued regarding the fleet mix and operational levels for the noise exposure maps. The Committee voted to approve the two noise exposure maps (base case and five year case projection) and to submit the maps to the FAA for review and approval. LAWA staff indicated a summary of noise abatement alternatives would be developed to indicate the benefits derived from specific measures. The Committee voted to delay further discussion of alternative noise control scenarios until staff presented the summary. LAWA staff requested suggestions regarding proposed changes in land uses.

November 4, 1991

The Steering Committee discussed the beneficial and negative impacts of the ten alternative noise control scenarios. Discussion ensued regarding the fleet mix and operational level assumptions used to produce the noise exposure maps. The Project Administrator advised Committee members that fleet mix and operations assumptions data had previously been reviewed and approved by the Committee. Committee members questioned LAWA staff regarding proposed rezoning recommendations made by the Technical Committee during July 1991. Discussion ensued regarding how rezoning boundaries were determined and input provided in determining boundaries.

The Project Administrator indicated the Technical Committee members reviewed a series of maps and materials in determining boundaries and that the Technical Committee Agenda is regularly published to notify residents of proposed meetings. The Committee discussed the noticing requirements for Technical and Steering Committee meetings. The Committee voted to conduct a public workshop/discussion on December 2, 1991 to allow public questions and input in the process and for selection of a noise control scenario. The Committee directed LAWA staff to provide appropriate notification to neighborhood organizations and citizens regarding the scheduled meeting.

December 2, 1991

A public workshop/forum was held on December 2, 1991. Approximately 300 citizens were in attendance. The Project Coordinator opened the public workshop/forum by introducing himself and members of the Steering Committee. The Committee confirmed the appointment of Robert Chick as Chairman and Tom Henry as Vice-Chairman of the VNY Part 150 Steering Committee. The Project Coordinator provided an overview of the FAR Part 150 process and discussed Technical Committee recommendations to rezone and replan single family and multiple family areas adjacent to VNY. The individual Steering Committee members commented on the Technical Committee recommendations.

The Committee voted unanimously to oppose any efforts to rezone areas adjacent to VNY as part of the Part 150 process. Members of the public commented on the Technical Committee recommendations. The Project Coordinator described the base case, five-year projection maps and alternative scenarios, using overhead projector slides. The maps were discussed by the Steering Committee and members of the public with questions asked. The Committee Chairman closed the public workshop/forum by indicating that the remaining agenda items would be discussed during a public meeting on December 9, 1991.

December 9,1991

The Project Coordinator provided a summary discussion of items reviewed during the December 2, 1991 hearing and provided responses to questions raised by Committee members

and members of the public. The Project Administrator and other members of the Steering Committee also provided responses to questions raised by the public. The Committee discussed the possibility of establishing a new site for engine run-ups and the possibility of purchasing a hush house to reduce aircraft noise. The Committee discussed helicopter noise and the possibility of imposing limits on helicopter routes and operations at VNY. The Committee discussed a scenario, proposed by residents, that would impose a 74 dBA maximum noise curfew for all hours of operation and prohibit jet aircraft operations from 10:00 p.m. to 8:00 a.m. The Committee requested LAWA staff to prepare a noise exposure map for the proposed scenario and provide a discussion of the scenario and potential impacts on January 27, 1992.

January 27, 1992

The Committee entered into the record letters prepared by two elected officials regarding Scenario #11. The Chairman requested comments and questions regarding the eleven proposed scenarios. A representative of a Homeowners Organization commented on the objective of Scenario #11. LAWA staff discussed an economic impact matrix that provided a cost/benefit analysis of the 11 alternative scenarios, which had been distributed to the Committee during a previous meeting. The staff also compared the eleven scenarios and discussed possible adverse and beneficial impacts that would be expected from implementation. Discussion ensued regarding the economic impact report.

A representative of the City Attorney's Office was present to discuss the legal impacts of the eleven scenarios. The Attorney summarized a Santa Monica Airport jet ban that was deemed discriminatory by the courts and indicated that Scenario #11 would face a similar court challenge. The Attorney indicated that the arbitrary selection of a maximum noise limit would be deemed capricious and difficult to defend in a court.

The Committee discussed differences between an existing Santa Monica Noise Regulation and several of the proposed scenarios. The Committee indicated that additional information should be developed by staff regarding economic impacts of the 11 scenarios. The Committee requested staff to schedule a noise simulation demonstration for the February 24,1992 meeting. The Committee discussed specific areas of the proposed NCP. The Committee indicated that final action on the NCP and selection of a noise impact scenario would be delayed until March 24, 1992.

February 24, 1992

The Committee entered into the record written statements submitted by two elected officials. Dr. David Dubbink, a noise simulator consultant presented a real time demonstration of aircraft noise levels. The Committee discussed aircraft noise levels and noise abatement technology with Dr. Dubbink following the noise simulation demonstration. Don Schultz, a

member of the Steering Committee and the Van Nuys Airport Ad Hoc Working Committee discussed a series of recommendations by the Ad Hoc Group to address noise at VNY.

Mr. Schultz stressed that the two key components of the Committee's recommendation were a noise monitoring system and a Noise Abatement Officer that would report directly to the VNY Airport Manager. The Committee discussed the Ad Hoc Committee recommendations. The Project Administrator discussed the benefits of installing a noise monitoring system that would accurately identify noisy aircraft.

Several Committee members indicated that the Ad Hoc Committee recommendations would be more beneficial if a noise standard or maximum noise level were implemented with the measures. The Project Coordinator suggested that the Committee focus on selection of a scenario program since enforcement and other measures would have to follow adoption of a scenario and the NCP. Mr. Schultz indicated that it was the intent of the Ad Hoc Committee to recommend that the measures would supplement a measure such as Scenario #9.

The Committee discussed other noise control measures. LAWA staff presented more information regarding economic impacts of the proposed scenarios. The Committee was advised by the Project Coordinator to reconsider measures that should be included in a NCP. The Committee scheduled March 24,1992 as the next meeting date. The Steering Committee Chairman indicated to the Committee and the public in attendance that it was the intent of the committee to take a vote on the March 24,1992 meeting on the NEM and NCP. Several members of the public discussed the Ad Hoc Committee recommendations and the need for the airport to coexist with the surrounding community.

March 24,1992

The Steering Committee Chairman indicated that there were two scenarios and the Ad Hoc Noise Working Group recommendations that were receiving the most response. The Project Coordinator provided an overview of the scenarios. The Committee discussed the scenarios along with recommendations of the Ad Hoc Group and raised several questions regarding accurate monitoring for the scenarios. The Chairman provided an opportunity for members of the public to comment on the scenarios and recommendations. Several members of the audience expressed concern regarding jet operations at VNY. Members of the Steering Committee expressed concern that an arbitrary noise standard (as proposed under Scenario #11) would result in years of litigation thereby interfering with implementation of the NCP.

The Committee voted to recommend BOAC approval of Scenario #9. The Committee voted to recommend installation of the noise monitoring system, prior to final FAA approval of the NCP. The Committee voted to approve the NEM and proposed NCP, with minor modifications and forward them to the BOAC for their consideration. Among other actions taken by the Steering Committee were a request to LAWA staff to prepare a second five-year forecast, predicated on a 100% increase in jet operations, and a vote to have the Steering Committee continue to function for a least two years to oversee the program implementation.

October 29,1996

The Committee Chair stated that the mission of the Steering Committee was to update the forecast so that it could be submitted to the FAA and obtain FAA approval of the Part 150 in order to receive monies for noise mitigation. LAWA staff provided an overview of the components for a Part 150 study, along with a background and status report on the work completed by the previous Steering Committee. The Noise Exposure Maps were identified as presenting noise contours at the present level and at a five-year forecast with mitigation measures imposed. The previous Steering Committee adopted Scenario #9, which constituted the heart of the Noise Compatibility Program. This scenario established a voluntary Fly Neighborly Program in which pilots utilize noise abatement procedures in departing the airport.

There was discussion on the Roberts Rules of Order which were adopted by the Committee. The Chair explained that discussion at the next meeting should include an updated forecast of aircraft operations, description of noise exposure maps predicated on those forecasts and a status of the measures proposed previously. Staff was requested to investigate several measures including strengthening the voluntary Fly Neighborly Program, Stage 2 aircraft phaseout, a curfew on helicopters, restricting night jet departures, and a non-addition rule. Public input was received from 19 people.

November 26, 1996

Staff provided a summary of aircraft operation forecasts, noise exposure maps, and noise compatibility program measures as contained in the staff report to the Committee. The FAA rejected the last submittal of the Part 150 because the 100% projected increase of turbojet operations by the Committee appeared to be arbitrary and was lacking supporting data justifying that increase. Committee discussion ensued on the forecasts. The advantages and disadvantages of phasing out Stage 2 aircraft or encouraging the use of Stage 3 aircraft were considered. The Committee requested staff to prepare noise contours using the projections associated with the VNY Master Plan.

The Chair referenced a report from the City Attorney to the BOAC regarding membership requirements of the Committee from the State Senators office. The City Attorney stated that this was not a requirement under federal regulations pertaining to airport noise compatibility planning, but noted that officials of the state should be consulted. Reference was made to Richard Dyer, principal staff with California Department of Transportation, Division of Aeronautics.

In addition to having been a member of the Technical Committee and on the mailing list to receive all Committee materials, the Chair stated that the BOAC would appoint Mr. Dyer to the Steering Committee as a non-voting member. The Committee passed a motion to have the Chair inform the BOAC that it was the Committee's desire to have representatives from State

Senators Rosenthal and Hayden included on the Committee. Public input was received from 13 individuals.

April 24, 2000

Staff presented an overview of the history and purpose of the VNY Part 150 Study. The Study is comprised of three parts: a base case noise map, a Noise Compatibility Program (NCP) with measures to mitigate noise impacts, and a five year projected noise map with the mitigation measures incorporated. The aircraft operations are used to establish the noise contour map and the mitigation measures are used to adjust the noise contour. The Study was submitted to the FAA but not approved because the aircraft operation forecasts were unacceptable. The centerpiece of the NCP is the fly friendly program.

Discussion ensued on how the aircraft operational forecasts were developed. Reference was made to the one page spreadsheet that was distributed, which displayed aircraft operations for a series of years. After discussion about various aspects of the forecasts a motion was made to adopt the forecasts as presented and to use them to generate noise contours with the INM created by the FAA. Direction was also given to staff to reexamine the forecasts and make adjustments if appropriate. Committee discussion was begun on the Noise Compatibility Program. Public input was received from eight people.

July 12, 2000

Discussion focused on the 28 NCP measures that had previously been adopted by the Steering Committee and the Board of Airport Commissioners in 1992. It was asked why the Committee should resubmit measures that have been previously rejected by the FAA. It was indicated that the FAA had been approached primarily on an informal basis on some of the measures and that adoption of the program as a whole and formal submittal could change the status of their response to a more favorable one.

A motion was made to reaffirm and adopt the 28 measures previously adopted in 1992. The discussion was opened to public input. Some of the comments included that the airport should never become scheduled and that it should eliminate all stage 2 aircraft very quickly. It was also suggested to get rid of all noisy helicopters and noisy jets. It was suggested that soundproofing, from a real estate point of view, is absolutely just not the focus that it should be because only part of the property is mitigated.

There was Committee discussion on what can be included in the Part150 Study and what would require a Part 161 Study and the distinctions between the two processes. A comment was made that the original Part 150 took several years to develop after numerous public meetings with homeowners and airport operators. Reaffirmation of the 28 measures does not indicate anything other than agreement with the previous work and the issue of whether to

include additional items is a topic that needs to be discussed. The Chair asked staff to look into some potential new measures.

A question was asked on whether a proposal that will require a Part 161 Analysis can be put in the Part 150 Study. It was suggested that because of the nature of a Part 161 Study a conclusion of such an analysis could lead to a proposal that was quite different from the one originally envisioned that prompted the analysis. Because of this possibility it would be preferable to recommend a Part 161 Study be included in a Part 150 Study that is based on a generalized description of a possible measure, with the expectation that this general measure could change as a result of the analysis.

Bret Lobner, Senior Assistant City Attorney, provided a comparative overview of the two regulations. He indicated that Part 161 and Part 150 are not legally tied to each other but that there are inferences between the Part 161 regulations and the Part 150. An objective of a Part 150 Study is to establish a Noise Compatibility Program, get the federal government to agree with the goals set forth in the program and then obtain federal funding for such programs as soundproofing. Whereas, the purpose of a Part 161 Study is to analyze the economic impacts of measures that are intended to reduce noise and find a way to allow the air commerce and navigation to continue operating.

November 8, 2000

The Chairman asked staff to provide an overview of the NEMs. Staff indicated that the five maps provided to the Committee presented a snapshot of noise impacted areas around the airport derived from aircraft operation levels in 1999, the base year, and in a projection of five years from now, predicated on aircraft operations forecasted to occur in 2004. Two of the five maps represent different scenarios for 1999, with and without the fly friendly program. The remaining three maps represent variations on the 2004 projection. A motion was made to approve the maps that were identified as the ones to be submitted to the FAA.

The discussion was opened for public input. Ten people spoke during the meeting. A question was asked why one house would be included in the noise map and the house next to it might not be included. The response was that the noise contour map is a planning tool generated by standardized methods to identify the limits of impacted areas. However, if the noise contour line falls on even a portion of a residential lot then the entire lot would be included in the noise map. Another inquiry was about the public outreach for this meeting. Dennis Quilliam (Project manager) stated that there were six display advertisements in the Valley Edition of the Los Angeles Times and the Daily News for this meeting.

Committee discussion included a request to expand the contours to include the 55 CNEL and the 60 CNEL. Concern was expressed that by adding more noise contours it is tantamount to the Committee recognizing these other levels which in turn suggests some sort of comment as to what is expected to happen within these contours. As an example zone changes to make the land compatible with the airport. It might require that when someone makes permitted

improvements to a bathroom that they also must install double pane windows. The motion to approve the 65 CNEL noise exposure maps as presented, and identified as the ones that are to be submitted to the FAA was adopted.

Discussion resumed on the motion made at the July 12, 2000 meeting, which was to reaffirm and adopt the 28 noise mitigation measures that were approved by the Steering Committee in 1992. The motion was amended to delete measure #10, which would have analyzed the feasibility of requiring helicopter operators to use the Flood Basin for arrivals or departures after 9:00 PM, and to delete measure #11, which would have sought to determine the effectiveness of an east/west helicopter flight track over industrial development between the airport and the former General Motors plant as a beacon marker. The motion as amended was adopted reaffirming 26 of the 28 measures.

January 11, 2001

The Chairman referred to correspondence that was sent in December to each committee member requesting their suggestions for additional items to be included in the NCP. Items received in response that can be used for reference in the discussions included a letter from Gerald Silver, dated 12/21/2000, a memo from Maurice Laham, dated 9/21/2000, and a letter from Congressman Brad Sherman, dated 1/9/2001. These items were the basis for consideration of new measures. Discussion focused on the distinction between measures that could be directly placed in a Part 150 Study and those measures that would require a Part 161 analysis.

Bret Lobner, from the City Attorney's office, described the difference between the two studies. He indicated that a Part 161 is predicated on the idea that the Federal Government should review all noise and access restrictions proposed at airports. It is divided into two parts dealing with Stage 2 and Stage 3 aircraft. The distinction is that those local regulations proposed by an airport, which would affect Stage 3 aircraft, require the consent by the FAA. Whereas, local airport regulations proposed for Stage 2 aircraft require no such consent. An economic study that compares the noise benefits to the cost of proposed regulations is required for either Stage.

It was clarified that all of the measures could be included in the Part 150 even if they did require a Part 161 analysis. It would be up to the Committee to decide whether to have those measures that require a Part 161 analysis to be included in the Part 150 or treated separately. Either approach would be acceptable. The important distinction to understand is that just because a measure that would require a Part 161 analysis is placed in the Part 150 it does not preclude the need to fulfill the requirements of the Part 161 regulations for that measure. He explained that any measure that would apply to an aircraft access or noise regulation would be subject to Part 161 requirements.

Public input was received was from five individuals. After extensive discussion on what should be included in the noise compatibility program and what should be deferred to some

other type of activity there was no further definitive action taken at this meeting. It was inferred during the Committee discussion that it would be advantageous to have staff prepare an analysis of the proposed measures in the three items referenced.

May 29, 2001

Discussion continued from the January 11, 2001 meeting on the 26 new measures that were proposed at that meeting. The Committee agreed to consider the block of 18 measures as staff recommended for adoption in the April 30, 2001 memo that was sent to the Committee. The remaining eight measures would then be considered one at a time. A further stipulation was made that if the 18 recommended measures were voted down that they would then be reconsidered individually. The Chair repeated the 18 measures as numbered in the April 30, 2001 memo as follows: 1, 2, 3, 4, 8, 9, 11, 12, 14, 16, 19, 20, 21, 22, 23, 24, 25, and 26.

The discussion was open for public comment. Nineteen people spoke a total of 28 times over several public input periods during the meeting. The comments included advocating the phase out of Stage 2 jets, expanding the noise contours to include the 55 and 60 CNEL, and all night curfews. It was also indicated that the exemption for Stage 3 aircraft was not simply an FAA regulation but an Act of Congress.

The Committee voted unanimously to adopt the 18 staff recommended measures as described in the April 30, 2001 memo. Discussion was initiated on the eight remaining measures. The Committee voted to add measure #5, a cap on Stage 3 jets, to the 18 previously adopted for inclusion in the NCP. Staff responded to a question about the difficulty in generating a 60 and 55 CNEL stating that the contours get so large that they take in noise generated by the freeways and it's difficult to distinguish freeway noise from airplane noise.

The downside is to publish the expanded contours in newspapers as an official record because when real estate is sold it has to be disclosed that it is in a sound problem area. Thousands of homeowners would be notified they have a sound problem over which nobody would spend any money to correct. The Committee voted to not include measures #6 , expanding the CNELs and #7, noise sensitive areas.

June 21, 2001

This meeting was fully published in local newspapers. However, due to a lack of quorum the meeting was adjourned without any action being taken.

July 16, 2001

The discussion continued on the remaining five proposed measures carried over from the preceding meeting. The discussion was opened on proposed measure # 10 of 26, which

would equalize aircraft departure routes, to public input. Five people spoke on the measure. A comment was made that the airport is surrounded on three sides by residential land uses and that it was wide open over the Sepulveda flood control basin where most departures occur. As such the measure should not be considered.
Another public comment was that it isn't fair to distribute the noise over everyone because then everyone's bothered. Also, it's not fair to have a single resident of Encino have a thousand planes going over every day. Committee discussion suggested that there are six helicopter routes that evenly distribute the noise. The Committee voted to not approve the measure.

Discussion began on proposed measure #13 of 26, which would establish an airport influence area. Five people provided public input. There was opposition expressed to the measure because it would be very subjective and science should be relied upon and not complaints. It was suggested that a noise complaint map be provided to the real estate community with the locations of all complaints available to people buying property. The names, addresses and numbers of those making complaints should be public records available to anybody. The Committee voted to not include the measure in the NCP.

Committee discussion commenced on proposed measure #15 of 26, Provision for a Noise Abatement Officer. Two people provided public input. The Committee voted to include the measure as amended in the NCP. Committee discussion was initiated on proposed measure #17 of 26 that would ratify Resolution 13369 passed by the Airport Commission on October 2, 1982, which defined air taxis as weighing 12,500 pounds. Gerald Silver said in the 1970's most aircraft at VNY were general aviation including air taxis and charters that were usually less than 12,500 pounds.

Staff responded that was simply the definition the Board of Airport Commissioners used to differentiate between scheduled commercial air traffic and air charters and air taxis. The FAA now define them as being up to 60 seats and recommended using the FAA's current definition instead of the one they started 30 years ago and have since discarded. The discussion was opened for public input.

Four individuals spoke on the proposed measure. Comments included that when the Resolution was adopted 12,500 pound aircraft were very, very noisy. Today there are many aircraft that weigh well in excess of 12,500 pounds that are substantially quieter than aircraft at that time. It was suggested that the economic impact of such a measure would be very significant and it should be rejected. Another comment was that just because the proposed measure would require a Part 161 Study should not stop people from voting for it. It was suggested that this measure was a scheme to shift noise.

Committee comments included that the proposed measure was bad policy because it assumes there is a correlation between the weight of an aircraft and its noise level and that is false. There are business jets under 12,500 pounds that are the noisiest jets out there and larger aircraft that are much more quiet. This is a noise study not a weight study. It was suggested there are a growing number of businesses that are buying aircraft known as fractional

ownership such as 737's and there should be limits on fractional ownerships. The Committee voted not to reaffirm the proposed measure #17 of 26.

Discussion was initiated on measure #18 of 26, a total nighttime curfew, between 10:00 PM and 7:00 AM, on all jet operations, both departures and arrivals. It was suggested that the airport is surrounded virtually on most sides by residential properties. And, one or two jets at night departing, though they be stage 3, can create an enormous problem. Staff responded that aircraft have to be able to land somewhere if they have a problem. So, it's totally irresponsible to have a rule that your runway's closed.

Public input referred to a meeting where a lady said, in regard to the life flights that are conducted out of primarily Clay Lacy Aviation, "I don't care what those aircraft are carrying. I don't want them anymore." It was observed that when people express concern about the economic well being of the community they are characterized as being heartless and indifferent; but there is no greater indifference to human life than the comment made by that lady. It was also suggested that the curfew should be from 9 PM to 8 AM and emergency aircraft should land wherever they can.

Committee discussion included that the proposed measure would discriminate against jets during the curfew period while allowing helicopter and propeller aircraft to operate. It was also suggested that the San Fernando Valley is screwed. Jets can come and go as they please in whatever volume they please and it was very very disappointing that this measure doesn't have a chance. The Committee voted to approve the measure and include it in the NCP and to be included in the Part 161 Study.

The Committee voted to approve the whole package of measures including the 26 adopted in November 2000, the 19 in May 2001, and the two at this meeting. Together these measures would constitute the approved Noise Compatibility Program (NCP) for VNY. The Committee voted unanimously to approve the whole NCP package.

August 2, 2001

The primary focus of the meeting was on the motion adopted by the BOAC on July 19, 2001 which approved the NEM and NCP. That motion also called for the Steering Committee to respond within two weeks of the BOAC action on whether or not they concurred. The Committee discussed three new measures that had been proposed by Committee members through correspondence.

It was suggested that forwarding the additional motions to the BOAC would reflect the desire of the Committee that these items were worth consideration, thereby extending the activities of the Steering Committee. A comment was made that by adding consideration of the two motions (to the concurrence with the BOAC's action) then it could be construed by the BOAC that the Steering Committee did not fully concur with the BOAC. It was also suggested that

there was no substantiation that the proposed measure to stop tourist flight activities was actually based on any level of impact that warranted their discontinuation.

Public input included comments from 12 people a total of 17 times over two public comment periods. The comments included a suggestion that even if the measures that were proposed needed a Part 161 Study they should still be considered. Appreciation was expressed for the time and effort that the Committee has devoted to trying to achieve closure to this long-standing problem of noise at VNY. The recent air show was referenced where planes landed without being heard and it was questioned whether mechanisms could be employed to do this all the time. It was also suggested that the pollution coming from jets was creating respiratory problems in children.

After extensive discussion, on the pros and cons of adding the proposed measures to the concurrence of the BOAC action, a vote was taken which failed to approve addition of the proposed measures. The Committee then voted to approve and concur with the BOAC action and finalize the NEM and NCP. The Committee voted to reconsider the preceding vote to concur with the BOAC and it was approved again.

Summary of Technical Committee Meeting Minutes

March 2, 1989

The first scheduled meeting of the VNY Technical Committee was conducted on March 2, 1989. The Committee discussed scheduling and locations for future meetings. The Committee discussed proposed weekend and holiday operational curfews and the impact the two curfews might have on pilot proficiency and small operators. The Committee reviewed the role of the Technical Committee in the Part 150 process and reviewed consultant tasks that should occur prior to submittal of Noise Exposure Maps to the FAA. The Committee discussed media protocol and the appropriate manner by which the Technical Committee should respond to media inquiries.

April 6,1989

The Committee discussed media protocol and whether to designate a spokesperson to coordinate the release of information to the media. The Committee decided technical details and information should be provided by the Committee as a group and that designation of a specific spokesperson should not be endorsed for the Part 150 Study. The Committee listened to a presentation on a possible weekday/weekend curfew being considered as a scenario. The Committee was informed that in addition to economic impacts, environmental and legal conflicts could occur.

The Committee voted to refine the proposed curfew study and requested a timeline for completion of tasks. The Committee discussed baseline and forecast data required for preparation of Noise Exposure Maps. The Committee voted to have the Noise Consultant act as the focal point for coordination between agencies, organizations and consultants requesting information about the base case and five year maps.

June 15, 1989

The Committee reviewed a summary of the Van Nuys Part 150 Workshop that was conducted on April 25,1989. The Committee discussed the definitions and use of Ldn and CNEL noise metrics used in Part 150 Studies. They voted to send a letter to the FAA regarding the use of an acceptable noise metric for the Part 150 Study. The Committee reviewed land use concept alternatives prepared for the Bull Creek (formerly known as the Air National Guard) site.

The Committee voted to recommend to the Steering Committee the consideration of a fifth alternative that proposed exclusive aviation uses. A general discussion of land uses ensued, followed by a discussion of a draft survey questionnaire of the economic impacts of the proposed operational limitation curfew, and historical and future aircraft operations projections. The Committee voted to refine the survey questions and finalize the survey before presenting recommendations to the Steering Committee.

July 13, 1989

The Committee discussed the location of proposed portable noise monitors that would be used to develop noise contour maps for the Part 150 Program. The Committee voted to direct Landrum & Brown, the noise consultant, to make the necessary arrangements to conduct the noise monitoring at the designated locations. The Committee reviewed a report on land uses and zoning surrounding VNY. The Committee reviewed a table on vehicular traffic that shows level of service projections and volume to capacity ratios for 11 intersections surrounding VNY. These were presented by a member of the Committee from the Los Angeles Department of Transportation.

October 5,1989

The Committee reviewed details of noise monitoring conducted by Landrum & Brown at eight sites around VNY from September 13-17, 1989. The Committee reviewed the proposed Part 150 Study Schedule and Consultant tasks for preparation of a Community Opinion Survey, Economic Impact Survey of Proposed Curfews, and an Aircraft Operations Fleet Mix Survey. The Committee discussed alternative noise control strategies and potential land use adjustments. The LAWA Noise Abatement Officer and a representative of CalTrans Division of Aeronautics discussed a helicopter noise monitoring study being conducted at VNY.

April 12, 1990

The Committee listened to a presentation made by CommuniQuest regarding the Community Opinion Survey conducted for areas surrounding VNY. A discussion was held on alternative noise control strategies including those listed in Section B150.7(b) of the Part 150 Regulations. The Committee reviewed a list of 20 staff prepared alternative noise control measures.

The Committee discussed each alternative separately and selected five scenarios from the list including two scenarios developed by the Board of Airport Commissioners and the Los Angeles City Council. The Committee then added two more scenarios suggested by a citizen, for a total of seven to be analyzed by the noise consultant. The Committee voted to recommend Steering Committee review of the seven alternatives and preparation of noise contour maps (using the INM).

February 19, 1991

The Committee reviewed noise control scenario maps prepared for the Part 150 Study. The Committee discussed specific scenarios and expressed a preference for Scenario #9 that is based upon reduced takeoff thrust/power settings within safety levels for all departing jet aircraft and an extension of the nighttime curfew from the current 11:00 p.m. to 7:00 a.m. to 10:00 p.m. to 7:00 a.m.

The Committee discussed a series of recommendations provided by the Van Nuys Noise Working Group that included recommendations to install a noise monitoring/aircraft tracking system, installation of new signage at intersections, provision of a full-time noise abatement officer for VNY, and dissemination of information to pilots regarding utilization of friendly flying procedures. The Committee voted to make a series of recommendations to the Steering Committee regarding adoption of Scenario #9 and implementation of several noise control measures.

July 16,1991

The eighth scheduled meeting of the VNY Technical Committee was conducted on July 16,1991. The Committee discussed the modeling of a performance based noise contour, noise monitoring systems and use of "N" number information to identify aircraft at VNY. The position of a noise abatement officer was discussed. The Committee reviewed land use maps prepared by LAWA staff that showed proposed rezone areas surrounding VNY. The Committee voted to increase the boundaries of the recommended rezone areas, and forward their recommendations to the Steering Committee.

IV) Noise Contours, Impact Analyses, and Related Maps

The FAR Part 150 Regulations require two official Noise Exposure Maps (NEM) be submitted to the FAA for their review and consideration. These are an existing condition NEM and a five-year condition NEM. Version 6.0c of the INM, in compliance with the Part 150 guidelines to utilize the most up to date version of the INM, was used in the generation of the noise contour maps for 2001 and 2006. Where a noise compatibility program is proposed to mitigate the five-year condition, and thereby reduce the five-year noise contour, the mitigated contour is submitted. The Official NEM for the VNY Part 150, therefore, includes a noise contour map for the existing condition (2001) and a five-year condition (2006) as mitigated by a Noise Compatibility Program (NCP), which are illustrated on Exhibit #1 and Exhibit #3 respectively. In addition to these two official NEMs another NEM for 2006 without mitigation (Exhibit #2) is being included to provide a comparison of the changes that will result from implementation of the mitigation measures in the NCP.

One of the factors used to mitigate the five-year 2006 NEM, with mitigation (Exhibit #3), was the preferred alternative noise control scenario, referred to as the Fly Friendly program, which was Scenario #9 of 11 scenarios considered during the Study. The Fly Friendly Program, which is embodied in mitigation measures #12 and #13 in the NCP (refer to pages 66-67 and 86-88 for description), is expected to reduce the number of impacted housing units from 3,483 to 2,507. Also, the 2006 NEM with mitigation reflects 1,160 of the 2,507 eligible residential units within the 65 dBA CNEL as being insulated. The figure of 1,160 was derived by applying a rate of 232 units a year during the years 2002 to 2006. A total of 33 units that were already insulated in the year 2001 were reflected in the base case. The 1,160 insulated units further reduce the number of impacted units to 1,347, which is reflected on Exhibit #3.

The number of residents residing in the impacted areas is shown on each NEM. These numbers were calculated by deriving an average number of people in each household type from the applicable Census tract and multiplying these household size figures times the number of units contained in each contour area.

The Land Use Compatibility Guidelines contained in Table I of Appendix A of the FAA Part 150 Regulations, (as shown on page 49), were utilized and incorporated into the impact analyses performed for the NEM and NCP adjusted contour maps and all alternative scenarios. The Land Use Compatibility Guidelines establishes which land uses are deemed compatible and which are incompatible within designated CNEL noise contours. These land use types were compared with existing land use patterns around VNY to quantify the number of incompatible dwelling units or parcels and amount of area impacted. The quantification of the units and the area was manifested on the NEMs in both graphical and tabular form. Refer to Volume 1 of 3 of the Background Appendices for a description of the Guidelines and impact analysis for each scenario. It is further noted that Van Nuys Airport and the noise contours of all alternative scenarios are totally within the jurisdiction of the City of Los Angeles and that the impact analyses were conducted within this planning context.

A) Official NEM of Existing Conditions

The Official NEM for the Base Year 2001, Exhibit #1, is predicated on 463,665 overall annual operations, which were used to generate the noise contours with the Integrated Noise Model (INM), Version 6.0c. There were a number of changes made from Version 6.0a of the INM, which was used in the preceding report for this Study, as compared to Version 6.0c utilized for this current report. Among the changes included the addition of several new aircraft types that necessitated reassignment of aircraft operations as reflected in Table #4, shown earlier in this report. Another change to Version 6.0c that is worth noting is the revised default noise profiles for the Gulfstream aircraft.

In Version 6.0a of the INM the noise profile reflected a standard departure procedure for Gulfstream aircraft. Because the older models of this type of aircraft are very noisy with relatively high decibel (dB) departure levels they contributed significantly to the 65 CNEL contour. In turn, the Fly Friendly Program, as outlined in NCP measure #13, caused a significant decrease in these dB levels. (The Fly Friendly Program is an existing program that will be continued under the NCP). With the advent of Version 6.0c a quiet departure procedure was introduced to represent the default noise profile for Gulfstream aircraft. This resulted in substantial changes in the NEMs. In particular, with respect to the comparative NEM without mitigation, as described below, the change in the size of the contour was not commensurate with the increase in jet operations that is projected to occur over the next five years.

Another change from the preceding report that should be recognized is reflected in Table #4, where the annual operations for each aircraft type are listed for each of the existing years 1995 to 2001, as well as the forecasted operations for the years 2002 to 2006. In previous reports, notably the one dated August 2001, this table also displayed operations that were designated as Burbank operations. In 1999, and in the preceding years, the FAA in the VNY tower included aircraft operations, within the overall VNY operation count, that were in VNY space and headed for Burbank Airport but did not actually land at VNY. This practice was discontinued by the FAA in the year 2000. In previous VNY Part 150 reports these overflights were included in the existing operational counts as illustrated in tables such as those operations listed in the table dated 9/25/2000 of an earlier draft of this Study. However, those operations were removed in table #4 (dated 9/30/2002) of this report and were not included in any calculations in the INM or for preparation of the NEM's

There was a discrepancy between the overall operations shown in the aforementioned Table #4 and the FAA published annual counts for VNY of approximately 5,000 to 9,000 operations each year. This discrepancy is the result of counting operations that occur during curfew hours. Whereas, the airport personnel keep a log of these operations while the FAA tower is shut down much of the curfew period each night and therefore does not maintain a record of most of them. These operations were incorporated into the operations illustrated in Table #4 and were included in all calculations for the NEMs.

The Base Case NEM for 2001 indicates 2,097 households with a population of 5,154 are impacted within the 65 CNEL. The noise impact reduction benefits derived by virtue of the Fly Friendly Program, which is an existing set of aircraft procedures that will be continued under the NCP, were incorporated into the calculations for the Base Case, along with 33 housing units that were insulated in the year 2001.

With respect to Section A150.101(e)(6) of the FAR Part 150 guidelines (which requires noise sensitive buildings, including those subject to the National Register of Historic Places, be located on the NEM), there are no historic properties that are known to exist within the VNY Part 150 Study impact area (the 65 CNEL and greater constitutes the impact area).

B) Official NEM of Five Year Projection, with mitigation from NCP.

The Official NEM of the five-year projection includes applicable mitigation measures from the NCP, including measures 1 through 28. Whereas, the remaining measures of the NCP, 29 through 35, are not currently reflected in future case NEM since these are subject to a separate Part 161 Study. The applicable mitigation measures reduced the size of the contour by virtue of the Fly Friendly Program and also reduced the number of residences impacted through the projected implementation of the insulation program. As with the Base Case, Version 6.0c of the INM was used to generate this contour. The five-year NEM with mitigation measures, Exhibit #3, was predicated on a forecast of 493,718 overall annual operations that are projected to occur in the year 2006.

Mitigation measure # 13 of the NCP embodies scenario # 9 referred to as the Fly Friendly Program. This measure was applied to the Base case and the five-year NEM by making adjustments to the noise profiles of applicable aircraft in the INM. These adjustments reflected actual noise performance factors that were measured and calibrated by the use of existing LAWA noise monitors applied to the specified aircraft types. Approval of the methodology, employed to generate the adjustments, was received from the FAA prior to their application. Refer to volume 3 of 3 of the Background Appendices for a complete description of the methodology, which was developed in conjunction with the consulting firm of Landrum & Brown. Also in that appendix is a copy of the approval for this methodology in a letter dated June 28, 2000 signed by John Gulding, from the FAA's Office of Environment and Energy. As a result of this mitigation measure the 65 dBA CNEL contour was diminished from 1,677 acres to 1,428 acres for a 15% reduction. There was an even more significant reduction in impacted dwelling units from 3,483 to 2,507 or 28% less.

The insulation program that is proposed in NCP measure # 2 reduced the number of impacted units down from 2,507 to 1,347. The 33 units that were insulated in the year 2001 were already incorporated in the base year. As indicated, the 1,160 insulated dwelling units were derived by applying a rate of 232 units a year during the years 2002 to 2006, which is the current annual estimate for VNY by LAWA's Residential Soundproofing Division. It is anticipated that the remaining 1,347 units would be subject to insulation in the five to six years beyond the forecast year. With the mitigation from the Fly Friendly program and the

beginning portion of the insulation program the impacted population would be reduced from 8,387 to 3,267 for a dramatic decrease of 61% in people adversely effected by aircraft noise.

C) Comparative Five Year Projection without mitigation from NCP.

Another five-year NEM, Exhibit #2, without the application of any mitigation measures, has been included in this report to provide an illustrative comparison of the differences between the maps. As indicated, this NEM would yield 3,483 dwelling units and a population of 8,387 impacted within the 65 dBA CNEL without the benefit of the NCP.

D) Track Maps for Existing Condition and Five Year Projection

The Track Maps, Exhibits #4 thru 10 on pages 54 thru 60, illustrate the direction and location of each aircraft operational flight track used in the INM. All of the tracks shown were used for the development of both the existing base case 2001 NEM and the forecasted 2006 NEM. These tracks were derived from analysis of Automated Radar Terminal System (ARTS) data and field observations to generate representative groupings of typical departure and arrival patterns. They were initially predicated on the same tracks used to create the Quarterly Noise Reports done for the State VNY variance and then enhanced to be more descriptive of long range jet arrival and departure patterns. Tracking factors for helicopters and touch and go operations were also added.

Separate arrival and departure track maps are provided for jet operations to reflect their more consistent patterns as opposed to the widely diverse patterns typically experienced with propeller aircraft. Similarly, helicopter and touch and go operations are displayed separately to reflect their unique patterns. There are 24 representative arrival tracts, L1 thru L25 for propeller aircraft (one of the tracts, L16, did not have any propeller operations assigned to it). Propeller aircraft are represented on 25 departure tracts, T1 thru T26 (tract T13 did not have any propeller operations assigned to it). Departures for jet aircraft are represented on eight primary tracks and one sub-track, with 10 arrival tracks for jets.

Helicopter arrivals and departures are consolidated on six tracks. And, touch and go operations are split amongst four primary tracks with the track furthest east of the airport divided into six more sub-tracks. The full description of each track, along with the type of aircraft and number of operations assigned to each track, is contained within the runstream data, or Echo reports, for the INM. Reference can be made to Volume 1 of 3 of the Background Appendices for this data.

The following Land Use Compatibility Table was extracted from the Federal Aviation Administration Part 150 Regulations (14 CFR Chp. 1) and utilized in the impact analysis for the Noise Exposure Maps and the Noise Compatibility Program Map, as well as with each of the alternative scenarios evaluated in the VNY Part 150 Study. The same criteria was employed within the context of the Community Noise Equivalent Level (CNEL) noise metric which was utilized in this Study as required by California Law.

LAND USE COMPATIBILITY TABLE WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS

	Yearly day-night average sound level (Ldn) in decibels					
Land Use	Below 65	65-70	70-75	75-80	80-85	Over 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail - building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade - general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding		Y	Y(6)	Y(7)	N	N N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Numbers in parentheses refer to notes.

KEY TO TABLE

SLUCM = Standard Land Use Coding Manual.

Y (Yes) = Land Use and related structures compatible without restrictions.

N (No) = Land Use and related structures are not compatible and should be prohibited.

NLR = Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35 = Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure

NOTES FOR TABLE

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

(4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

Sponsor's NEM Certification

The Noise Exposure Maps and accompanying documentation for the Van Nuys Airport (VNY), including the description of consultation and opportunity for public involvement, submitted in accordance with Federal Aviation Regulations Part 150, are hereby certified as true and complete to the best of my knowledge and belief. It is hereby certified that adequate opportunity has been afforded interested persons to submit their views, data, and comments on the Noise Exposure Maps and Forecasts. It is further certified that the 2001 Noise Exposure Map and supporting data are fair and reasonable representations of existing conditions at the VNY airport.

9/6/06

Date of Signature

Jim Ritchie
Deputy Executive Director
Los Angeles World Airports

VNY PART 150 STUDY

EXHIBIT #1
Official Noise Exposure Map
Existing Conditions - 2001

2001

LEGEND

- Residential - Single Family
- Residential - Multi-Family
- Residential - Sound Insulated
- Commercial
- Industrial
- Open Space
- Airport Property
- Noise Contours
- Freeways
- Major Streets
- Minor Streets
- Railroads
- Schools
- Churches
- Hospitals
- Landmarks
- Noise Monitoring Terminals

TECHNICAL NOTES

Noise Contours are generated using the Federal Aviation Administration's Integrated Noise Model (INM) version 6.0c. The INM contour data file is based on annualized operational information gathered for the 12 month period ending December 31, 2001.

Dwelling unit calculations are based on estimates made using June 1987 assessor information, supplemented with land use surveys in 1995 and 1999. Population estimates reflect the increases from the 1990 census data for persons per dwelling unit.

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

2000 0 2000 Feet

N
W E
S

Date Produced: April, 2006

INCOMPATIBLE LAND USE

Total Cumulative Noise Impact Areas

	CNEL 65 and above				CNEL 70 and above				CNEL 75 and above			
Landuse	ACRES	DU	PCLS	POP	ACRES	DU	PCLS	POP	ACRES	DU	PCLS	POP
S Family	101.3	529	527	1432	2.4	11	13	28	0.0	0	0	0
M Family	49.3	1568	99	3722	1.5	50	5	108	0.0	0	0	0
Mbl Home	0.0	0	0	0	0.0	0	0	0	0.0	0	0	0
Schools	0.1	0	1	0	0.0	0	0	0	0.0	0	0	0
Churches	0.3	0	1	0	0.0	0	0	0	0.0	0	0	0
Hospital	0.0	0	0	0	0.0	0	0	0	0.0	0	0	0
TL Incom	151.1	2097	628	5154	3.9	61	18	136	0.0	0	0	0
TL Comp	1224.5	33		86	523.8	25		67	280.7	0		0

Note: DU - Dwelling Units; PCLS - Parcels; POP - Estimated Population

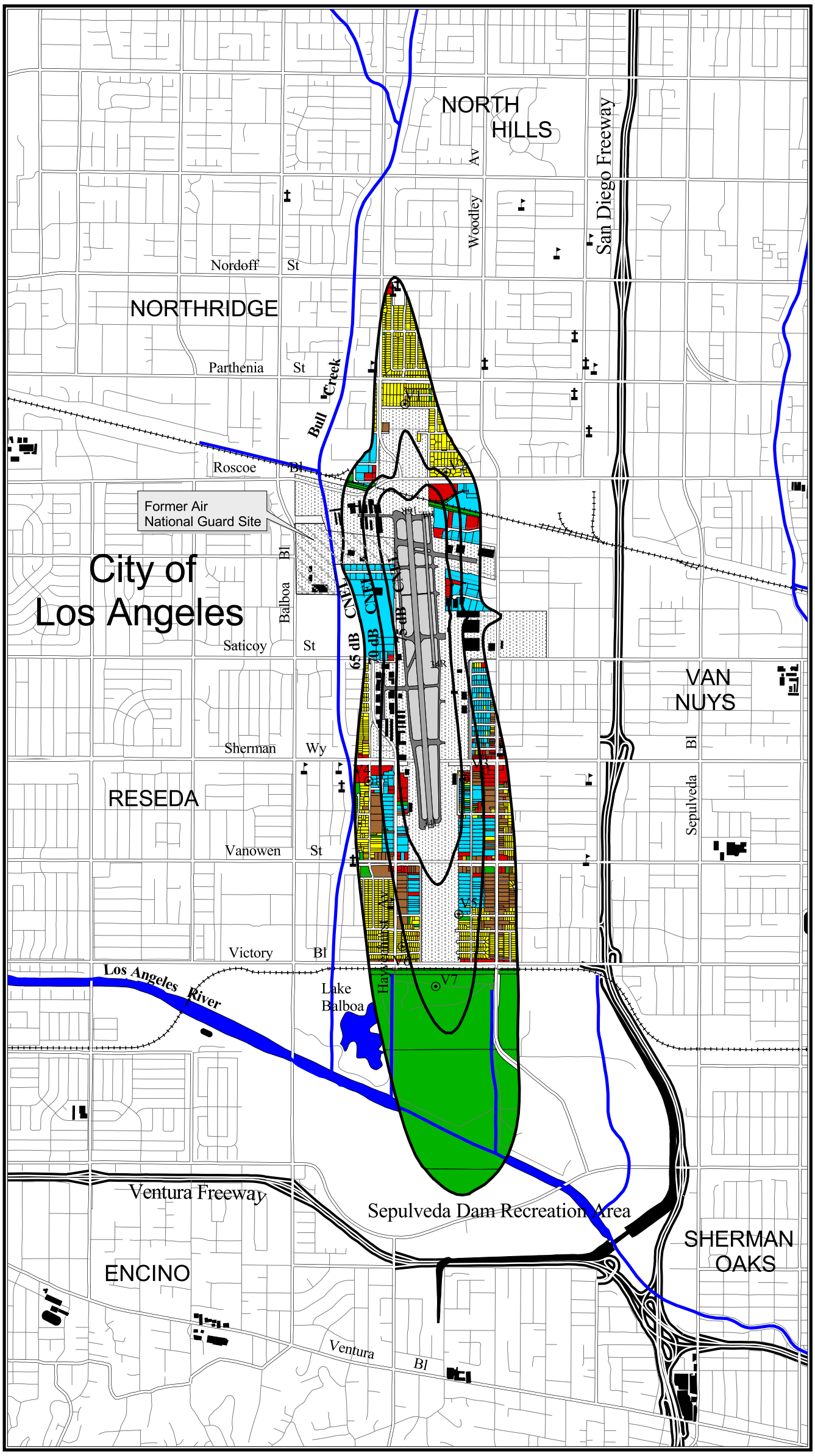
Noise Management Division

Van Nuys
Los Angeles World Airports

VNY PART 150 STUDY

EXHIBIT #2
Comparative Noise Exposure Map
Future Conditions - 2006
Without Mitigation Measures

2006



LEGEND

- Residential - Single Family
- Residential - Multi-Family
- Residential - Sound Insulated
- Commercial
- Industrial
- Open Space
- Airport Property
- Noise Contours
- Freeways
- Major Streets
- Minor Streets
- Railroads
- Schools
- Churches
- Hospitals
- Landmarks
- Noise Monitoring Terminals

TECHNICAL NOTES

Noise Contours are generated using the Federal Aviation Administration's Integrated Noise Model (INM) version 6.0c. The INM contour data file is based on the five-year projection included in this Part 150 Study.

Dwelling unit calculations are based on estimates made using June 1987 assessor information, supplemented with land use surveys in 1995 and 1999. Population estimates reflect the increases from the 1990 census data for persons per dwelling unit.

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

2000 0 2000 Feet

N
W E
S

Date Produced: April, 2006

INCOMPATIBLE LAND USE

Total Cumulative Noise Impact Areas

	CNEL 65 and above				CNEL 70 and above				CNEL 75 and above			
Landuse	ACRES	DU	PCLS	POP	ACRES	DU	PCLS	POP	ACRES	DU	PCLS	POP
S Family	200.7	1039	1038	2789	22.6	132	133	318	1.0	5	7	13
M Family	74.6	2444	179	5598	25.5	792	43	2011	0.0	0	0	0
Mbl Home	0.0	0	0	0	0.0	0	0	0	0.0	0	0	0
Schools	4.2	0	2	0	0.0	0	0	0	0.0	0	0	0
Churches	6.2	0	3	0	0.0	0	0	0	0.0	0	0	0
Hospital	0.0	0	0	0	0.0	0	0	0	0.0	0	0	0
TL Incom	285.6	3483	1222	8387	48.1	924	176	2329	1.0	5	7	13
TL Comp	1677.1	33		86	744.4	31		80	349.1	0		0

Note: DU - Dwelling Units; PCLS - Parcels; POP - Estimated Population

Noise Management Division

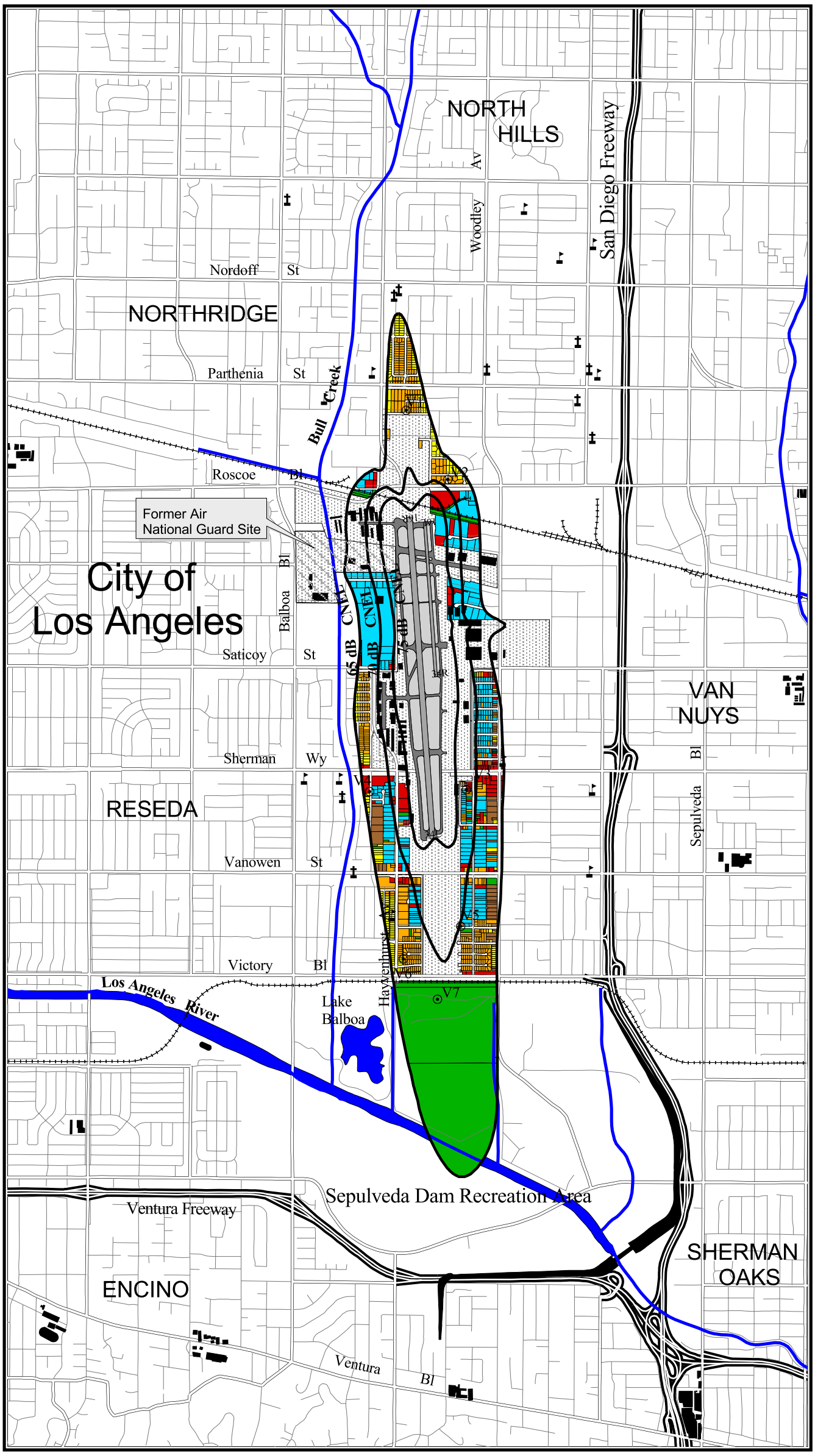
Van Nuys
Los Angeles World Airports

VNY PART 150 STUDY

EXHIBIT #3
Official Noise Exposure Map
Future Conditions - 2006
With Mitigation Measures

(Fly Friendly Procedures and Sound Insulation Program - 1160 Previously Incompatible Dwelling Units Shown as Compatible)

2006



LEGEND

- Residential - Single Family
- Residential - Multi-Family
- Residential - Sound Insulated
- Commercial
- Industrial
- Open Space
- Airport Property
- Noise Contours
- Freeways
- Major Streets
- Minor Streets
- Railroads
- Schools
- Churches
- Hospitals
- Landmarks
- Noise Monitoring Terminals

TECHNICAL NOTES

Noise Contours are generated using the Federal Aviation Administration's Integrated Noise Model (INM) version 6.0c. The INM contour data file is based on the five-year projection included in this Part 150 Study.

Dwelling unit calculations are based on estimates made using June 1987 assessor information, supplemented with land use surveys in 1995 and 1999. Population estimates reflect the increases from the 1990 census data for persons per dwelling unit.

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

2000 0 2000 Feet

N
W E
S

Date Produced: April, 2006

Noise Management Division

Van Nuys
Los Angeles World Airports

INCOMPATIBLE LAND USE

Total Cumulative Noise Impact Areas

	CNEL 65 and above				CNEL 70 and above				CNEL 75 and above			
Landuse	ACRES	DU	PCLS	POP	ACRES	DU	PCLS	POP	ACRES	DU	PCLS	POP
S Family	56.7	282	281	741	0.0	0	0	0	0.0	0	0	0
M Family	34.9	1065	84	2526	0.0	0	0	0	0.0	0	0	0
Mbl Home	0.0	0	0	0	0.0	0	0	0	0.0	0	0	0
Schools	0.1	0	1	0	0.0	0	0	0	0.0	0	0	0
Churches	0.3	0	1	0	0.0	0	0	0	0.0	0	0	0
Hospital	0.0	0	0	0	0.0	0	0	0	0.0	0	0	0
TL Incom	91.6	1347	365	3267	0.0	0	0	0	0.0	0	0	0
TL Comp	1428.5	1193		3000	575.6	162		388	298.8	0		0

Note: DU - Dwelling Units; PCLS - Parcels; POP - Estimated Population

L23
L6
L7
L8
L9
L5
NORTH
HILLS
L10
L4
NORTHRIDGE
PANORAMA CITY
San Diego Freeway
L12
L11
L3
L2
L13
V1
V2
L1
City of
Los Angeles
VAN NUYS
V4
V3
L14
RESEDA
V5
V6
V7
L15
L25
L23
Ventura Freeway
ENCINO
L24
L17
L18
N
W
E
S
SHERMAN
OAKS
L3
L22
L21
L20
L19
L11

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

4000 0 4000 Feet

LEGEND

- Fixed Wing Arrival Tracks (L1...L25)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #4
Official Track Map
Arrival Tracks - Propeller Aircraft

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles World Airports

CITY OF LOS ANGELES FOUNDED 1781

T23 T5 T6 T7 T8 T9 T17 T11 T3 T10 T12 T4 T2 T1 T14 T26 T15 T25 T17 T23 T16 T24 T22 T4 T21 T20 T19 T18 T10

NORTH HILLS

NORTHRIDGE

PANORAMA CITY

San Diego Freeway

City of Los Angeles

VAN NUYS

RESEDA

Ventura Freeway

ENCINO

SHERMAN OAKS

V1 V2 V3 V4 V5 V6 V7

N W E S

4000 0 4000 Feet

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

LEGEND

- Departure Flight Tracks (T1...T26)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #5
Official Track Map
Departure Tracks - Propeller Aircraft

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles World Airports

L6
L7
L8
L5
NORTH
HILLS
L4
NORTHRIDGE
PANORAMA CITY
San Diego Freeway
L3
L2
V1
V2
V3
V4
V5
V6
V7
City of
Los Angeles
VAN NUYS
RESEDA
Ventura Freeway
ENCINO
SHERMAN
OAKS
L19
L20
L21
N
W
E
S
L3

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

4000 0 4000 Feet

LEGEND

- Jet Arrival Tracks (L2...L8, L19...L21)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #6
Offical Track Map
Arrival Tracks - Jet Aircraft

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles
World Airports

T6RA
T4LC
T6RE
T6RD
T4LB
T4LA
City of
San Fernando
NORTH
HILLS
NORTHRIDGE
San Diego Freeway
PANORAMA CITY
City of
Los Angeles
RESEDA
VAN NUYS
Ventura Freeway
T6RB
ENCINO
T6RC
SHERMAN
OAKS
N
W
E
S

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

4000 0 4000 Feet

LEGEND

- Jet Departure Flight Tracks (T6R..., T4L...)
- Jet Departure Subtrack (for T6RA and T6RB)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #7
Official Track Map
Departure Tracks - Jet Aircraft

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles
World Airports

TAN
NORTH HILLS
NORTHRIDGE
PANORAMA CITY
San Diego Freeway
TANW
V1
V2
TAW
THAE
City of Los Angeles
VAN NUYS
V4
V3
RESEDA
V5
V6
V7
Ventura Freeway
ENCINO
SHERMAN OAKS
TASW
TAS
N
W
E
S

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

4000 0 4000 Feet

LEGEND

- Helicopter Arrival Flight Tracks (THAE, TAN, TANW, TA...)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #8
Official Track Map
Arrival Tracks - Helicopters

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles World Airports

CITY OF LOS ANGELES FOUNDED 1781

THN

NORTH
HILLS

NORTHRIDGE

PANORAMA CITY

San Diego Freeway

THNW

V1

V2

THW

THE

City of
Los Angeles

VAN NUYS

V4

V3

RESEDA

V5

V6

V7

Ventura Freeway

ENCINO

N
W
E
S

THSW

THS

SHERMAN
OAKS

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

4000 0 4000 Feet

LEGEND

- Helicopter Departure Flight Tracks (THE, THN, TH...)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #9
Official Track Map
Departure Tracks - Helicopters

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles
World Airports

NORTH HILLS

NORTHRIDGE

PANORAMA CITY

TG4L

TG4R

San Diego Freeway

16LTGO

City of Los Angeles

VAN NUYS

RESEDA

V1

V2

V3

V4

V5

V6

V7

TG6R

Ventura Freeway

ENCINO

SHERMAN OAKS

N

W

E

S

TECHNICAL NOTES

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

4000 0 4000 Feet

LEGEND

- Touch and Go Flight Tracks (TG4L, TG4R, TR6R, 16LTGO)
- Touch and Go Subtracks (for 16LTGO)
- Airport Property
- Landmarks
- Noise Monitoring Terminals
- Freeways
- Major Streets
- Minor Streets
- Railroads

VNY PART 150 STUDY

EXHIBIT #10
Official Track Map
Touch and Go Tracks

Noise Management Division

Date Produced: April, 2006

Van Nuys
Los Angeles World Airports

V) Noise Compatibility Program (NCP)

The Noise Compatibility Program (NCP) was adopted by the VNY Part 150 Steering Committee on July 16, 2001. The Board of Airport Commissioners (BOAC) adopted the NEM and NCP on July 19, 2001 and directed they be submitted to the FAA for their review and approval pending concurrence by the Steering Committee. On August 2, 2001 the Steering Committee concurred with the BOAC action and recommended that the final NEM and NCP be submitted to the FAA. After final approval by the FAA, the NCP will be the basis for an active program by LAWA to meet the objectives of the VNY Part 150 Study.

The 35 individual mitigation measures contained in the NCP are divided into four sections. The first section is Land Use, which deals with development of an Airport Land Use Compatibility Plan for VNY; an insulation program; a program to restrict the introduction of new homes into the 65 dBA CNEL; and various construction and capital improvement projects to reduce noise impacts. These construction projects would include airfield improvements, neighborhood enhancement projects, such as sound walls and landscaping, and a hush house for aircraft maintenance run ups.

The second section of the NCP addresses various elements of Helicopter operations on VNY. These measures consider improved routes to avoid noise sensitive areas; the development of a Helicopter Training Facility on the airfield to preclude helicopters flying to and from VNY while training at other airfields; the potential for raising the approach glideslope to Burbank Airport in order to raise the ceiling for helicopter activity around VNY; a citywide ordinance to require City-owned helicopters to maintain specified altitudes to minimize noise impacts; and referral of helicopter related measures to a newly created Helicopter Task Force to evaluate a broad range of issues.

The third section of the NCP contains a number of measures dealing with Airfield Operations. These include re-signing the runways with messages to pilots to fly quietly, requesting the FAA to add a fly quietly message on the Automatic Terminal Information System, and establishing a noise abatement officer as part of the VNY Manager's Office. This section also contains the primary elements of the NCP which are the establishment of noise abatement procedures, as manifested in Scenario #9 (the Fly Friendly Program in measures 12 and 13 (refer to pages 66-67 and 86-88 for description and analysis), and the acquisition of a comprehensive noise monitoring and reporting system. The noise monitoring system is an essential element of the program because it will enable the noise abatement officer to track aircraft, while monitoring their noise performance and provide hard copy reports that can be used to verify any excessive noise activity to both pilots and citizens.

The fourth section of the NCP is comprised of seven measures that will be subject to a comprehensive Part 161 cost/benefit analysis. These include financial incentives and disincentives for rental rates and landing fees; expansion of fines; establishment of a maximum daytime noise limit; a limit on the number of Stage 3 jets; expansion of the existing curfew; and a cap or phase on the number of helicopters.

Following is the list of the 35 mitigation measures in the NCP:

NOISE COMPATIBILITY PROGRAM

LAND USE:

1) ALUC Plan

Adopt an Airport Land Use Commission (ALUC) Airport Comprehensive Land Use Plan (CLUP) for VNY and environs reflecting the provisions of the VNY Part 150 Study. The program will be subject to ongoing monitoring and implementation.

Lead Agency/Action: Los Angeles County Regional Planning to develop plan
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Technical Committee meeting minutes of 7/13/89
Cost/Benefit: State mandated study costs; quantification of long term benefits dependent on planning variables.
Source of Funding: Los Angeles County/State of California
Timeframe: short range, current to three years.

2) Insulation

A) Undertake and validate an acoustical insulation program and estimate representative housing types within 70 CNEL.
B) Once validated, establish eligibility for residential acoustical insulation in the greater Van Nuys Airport areas subject to impacts of 65 CNEL or greater. The initial target area will be the households within the 70 CNEL.
C) Expand eligibility program to include the 65 CNEL. If any portion of a lot lies within the 65 CNEL then it should be included. Continue acoustical insulation program until all houses impacted are insulated.

Lead Agency/Action: Los Angeles World Airports (LAWA) and FAA to implement program
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 5 of Volume 1 of 3 of the Background Appendices, Land Use Compatibility
Cost/Benefit: Approximate Cost: $45,000,000; benefit is compatibility of interior noise levels
Source of Funding: FAA, LAWA
Timeframe: long range, five to eight years

3) Additional Development Within Impact Area

A) Adopt measures to restrict the introduction of new housing within the projected 65 CNEL, unless such property is soundproofed and an avigation easement granted in favor of the airport. Maintain and monitor General Plan over time to assure airport/community compatibility.
B) Encourage owners of undeveloped land to voluntarily develop the property consistent with State Noise Standards.

Lead Agency/Action: L. A. City Planning Department to initiate General Plan revision
Reference/Analysis: Steering Committee meeting minutes of 4/25/89 (Volume 2 of 3 of the Background Appendices), 12/2/91 and 11/8/2000; Technical Committee meeting minutes of 7/13/89 and 7/16/91; Section 5 of Volume 1 of 3 of the Background Appendices, Land Use Compatibility
Cost/Benefit: Planning costs indeterminable; quantification of benefits dependent on planning variables
Source of Funding: Los Angeles City Planning Department, LAWA
Timeframe: Mid range, three to five years

4) Construction and Capital improvement

A) Construct airfield improvements shown on the current airport layout plan to improve safety and convenience.
B) Provide the means to develop neighborhood enhancement projects with a focus on noise mitigation (e.g. sound walls, landscaping).
C) Construct a hush house on the airfield to suppress jet engine maintenance noise, with the location to be determined after further study.

Lead Agency/Action: LAWA to construct improvements
Reference/Analysis: Steering Committee meeting minutes of 4/25/89 (Volume 2 of 3 of the Background Appendices), 12/2/91, 12/9/91 and 11/8/2000; Technical Committee meeting minutes of 7/13/89 and 7/16/91; Section 5 of Volume 1 of 3 of the Background Appendices, Land Use Compatibility
Cost Benefit: Five year costs of airfield improvements approximately $6,500,000; Hush house approximately $1,000,000; benefit is substantial reduction of noise to adjacent neighborhoods
Source of funding: LAWA, FAA
Timeframe: Mid range, three to five years

HELICOPTER OPERATIONS:

5) VNY Helicopter Policy

Formulate and adopt local plans and ordinances as necessary to regulate the establishment and operation of new helicopter landing facilities in the general area. Monitor, maintain, and adjust plans and ordinances over time.

Lead Agency/Action: FAA, LAWA to coordinate development
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 2 of Volume 1 of 3 of the Background Appendices, Community Opinion Survey; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs dependent on extent of new facilities; primary benefit is to reduce single event noise
Source of Funding: FAA, LAWA
Timeframe: Mid range, three to five years

6) West Side Operations

Investigate whether to encourage helicopter pilots operating west of VNY to increase their altitude 300 feet which may be accommodated under the existing Burbank glideslope.

Lead Agency/Action: FAA, LAWA to coordinate program
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs nominal to implement; primary benefit is to reduce single event and overflight noise
Source of Funding: FAA, LAWA
Timeframe: short range, current to three years

7) Helicopter Training Facility

Conduct testing and research to determine whether a helicopter training facility would be appropriate on the Bull Creek Site. Such a facility would preclude the need for helicopters to leave the airport to train elsewhere. Any such facility would be limited in the number of operations allowed as determined by further study.

Lead Agency/Action: LAWA, FAA to coordinate program
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs would depend upon structures and facilities necessary; primary benefit is to reduce single event and overflight noise
Source of Funding: FAA, LAWA

Timeframe: short range, current to three years

8) Improve Use of Established Routes

Develop a program to require helicopter operators to fly along established routes, in particular Stagg Street instead of Saticoy Street, and be encouraged to maximize operations over the least noise sensitive areas such as the industrial development to the east and the Flood Control Basin to the south.

Lead Agency/Action: FAA, LAWA to coordinate program
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs nominal to implement; primary benefit is to reduce single event and overflight noise
Source of Funding: FAA, LAWA
Timeframe: short range, current to three years

9) Bull Creek Route to Balboa

Investigate the feasibility of moving the Bull Creek route to the west, over Balboa Boulevard, to reduce noise over residents in the Creek area. Surface traffic on the Balboa Boulevard route should mask some of the noise from helicopters. This recommendation should be considered, but careful evaluation is needed by local residents and pilots.

Lead Agency/Action: FAA, LAWA to coordinate program
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs nominal to implement; primary benefit is to reduce single event and overflight noise
Source of funding: FAA, LAWA
Timeframe: short range, current to three years

10) Public Service Fleets

Work toward enactment of an ordinance that would require City-owned helicopters to maintain specified altitudes (depending on fixed-wing conflicts), except when a mission requires a lower altitude or an orbiting maneuver. Under FAA regulations, helicopters must now be at 500 feet altitude within the Van Nuys Airport Traffic Area (ATA), which extends five miles in all directions from the airport. The ordinance would require helicopters within and outside the Van Nuys ATA to maintain sufficient altitude so as not to be a nuisance to local residents, particularly when they are transiting an area. The sufficient altitude would be

determined during the development of the ordinance but, at a minimum, would maintain the 500 feet altitude currently flown in the ATA.

Lead Agency/Action: LAWA and City Attorney's Office to prepare ordinance
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs nominal to implement; benefit is to reduce overflight noise
Source of Funding: LAWA, City of Los Angeles
Timeframe: mid-range, three to five years

11) Improved Communications

Improve communications between the airport, the FAA, helicopter operators, and residents in an effort to reduce the impact and negative perception of helicopter operations. Residents would be encouraged to provide as much information as possible regarding helicopter infringements, to increase follow-up by the airport and improve self-policing by helicopter operators and individual pilots.

Lead Agency/Action: LAWA, FAA, and helicopter operators to coordinate program
Reference/Analysis: Steering Committee meeting minutes of 11/8/2000; Sections 2 and 4 of Volume 1 of 3 of the Background Appendices, Community Opinion Survey and Helicopter Study
Cost/Benefit: Costs nominal; benefit is to enhance the effectiveness of other helicopter measures
Source of Funding: LAWA, FAA
Timeframe: short range, current to three years

AIRPORT OPERATIONS:

12) Establish Noise Abatement and Departure Techniques for all aircraft departing VNY

Modified or reduced noise takeoff procedures would vary according to aircraft type, size, and weight. Some aircraft might be required to fly a steeper takeoff profile while others would find it necessary to use a more shallow profile. The takeoff parameters for aircraft would be established through continuous measurement of individual aircraft noise levels using approved manufacturers or NBAA procedures.

Lead Agency/Action: FAA, LAWA to develop database, program criteria, and initiate monitoring of operations
Reference/Analysis: Steering Committee meeting minutes of 1/9/91, 11/4/91, 1/27/92, 3/24/92 and 11/8/2000; Table #6, Cost/Benefit Analysis, of NCP Report; Impact

Analyses associated with Exhibits #2 and #3 of NCP Report; Section 3 of Volume 1 of 3 of the Background Appendices, Economic Impacts

Cost/Benefit: Costs nominal if at all; benefits could be more than 50 percent reduction in noise impacted housing

Source of Funding: LAWA, FAA, aircraft owners/pilots

Timeframe: short range, current to three years, initiate immediately

13) Establish Noise Abatement and Departure Procedures

Adopt Scenario No. 9 of the Part 150 scenarios as the NCP, based on reduced take-off thrust power settings within safety levels for all jet departures and prohibit aircraft having Part 36 takeoff noise levels in excess of 74 dBA (excluding emergency flights), between the hours of 10:00 p.m. and 7:00 a.m.

Lease Agency/Action: FAA, LAWA to develop database, program criteria, and continue monitoring of operations

Reference/Analysis: Steering Committee meeting minutes of 1/9/91, 11/4/91, 1/27/92, 2/24/92, 3/24/92 and 11/8/2000; Table #6, Cost/Benefit Analysis, of NCP Report; Impact Analyses associated with Exhibits #2 and #3 of NCP Report; Sections 1 and 3 of Volume 1 of 3 of the Background Appendices, Alternative Noise Control Scenarios and Economic Impacts

Cost/Benefit: Primary cost would include lost revenue resulting from extending the curfew; benefits could be over 50 percent reduction in noise impacted housing.

Source of Funding: LAWA, FAA, aircraft owners/pilots

Timeframe: short range, current to three years. Formally continue as soon as the Steering Committee, the BOAC, and the FAA approve the Part 150 NCP

14) Signage

Re-sign the airport at every departure point/intersection of both runways with signs that can be read both day and night that provide the following:

A) Please Fly Quietly
B) Departing South: No Turns Before the Flood Basin
C) Departing North: No Turns Before 1,800 MSL

On intersection signs only, the following words should be included: Intersection Departures Are Not Allowed Between 10:00 p.m. and 7:00 a.m. Implement immediately with larger, clearer signs being posted at every run-up area describing recommended noise abatement procedures, including altitudes and locations at which turns should be initiated after departure, and noise sensitive areas to be avoided. Maintain program over time.

Lead Agency/Action: LAWA, FAA; LAWA to construct signs in coordination with FAA on messages

Reference/Analysis: Technical Committee meeting minutes of 2/19/91; Steering Committee meeting minutes for 2/24/92, 3/24/92 and 11/8/2000
Cost/Benefit: Costs included in $6,500,00 capital improvement costs (refer to Measure No. 4); benefits dependent on Measures Nos.12 and 13
Source of Funding: LAWA, FAA
Timeframe: short range, current to three years

15) Runway Policy - Full length departure

A "top of the runway " departure policy, (taking off at the furthest end of the runway) is part of this NCP as a reiteration of existing airport policy for jet aircraft.

Lead Agency/Action: LAWA, FAA; LAWA to enforce policy
Reference/Analysis: Steering Committee meeting minutes for 5/29/01
Cost/Benefit: Minimal staff costs; benefit is to enhance effectiveness of noise abatement procedures
Source of Funding: LAWA, FAA
Timeframe: short range, current to three years

16) Noise Roundtable

Establish a Noise Roundtable at VNY to review progress on the implementation of the Part 150 Study. In an effort to reduce noise impacts, the Roundtable could make adjustments to allow for the implementation of additional noise measures which might be recommended over time, if they become technically and economically feasible.

The Noise Roundtable will act as a review board for at least two years after the recommendations of Scenario No. 12 (the Ad Hoc Committee recommendations incorporated within Measures 13, 15, 18, 19, 20, 21, 24, and 26) and Scenario No. 9 are fully implemented, with the understanding that the Part 150 Study would be continued.

The Noise Roundtable will be charged with holding annual community meetings, or more frequently as warranted, to discuss the status of the Part 150 program and recommended adjustments. LAWA should annually monitor aircraft noise levels and the level of activity at the airport to determine if significant and unexpected changes have occurred to the base year NEM, and to determine if the Part 150 program is being successfully implemented.

The results of the monitoring should be provided at annual public information meetings to discuss the progress of the Part 150 plan, and to educate and inform airport users and the affected communities. Discussions with airport users regarding community complaints associated with airport operations should also be included in these annual reviews. Recommendations for updating the NEMs and Part 150 program should be provided if unexpected changes occur before the five-year period and significantly affect the land use

compatibility situation around the airport, and/or the noise abatement cost assumptions used in the development of the current plan.

Lead Agency/Action: LAWA to coordinate with VNY Noise Roundtable members
Reference/Analysis: Steering Committee meeting minutes of 3/24/92, 11/8/2000 and 5/29/01
Cost/Benefit: Nominal staffing costs; benefit is enhanced effectiveness of noise measures
Source of Funding: LAWA
Timeframe: short range, current to three years

17) Noise Management Monitoring System

Establish a noise management monitoring and flight track system with software and database that feature the ability to positively identify all aircraft. Establish, maintain and update over time, an automated data system that will provide the following information for turbo jet and turbo fan aircraft operations (arrivals and departures):

- Aircraft "N" number sorting by types of jets;
- Aircraft Type, Owner, and Pilot;
- Part 36-3F (most recent edition) listed noise departure level;
- NBAA, or aircraft manufacturer's noise abatement operation level, and
- Actual operation noise level recorded by VNY noise monitors.

LAWA should contract with an acoustical consultant to calibrate VNY noise microphones to permit accurate and consistent "real time" monitoring of noise abatement procedures for jet aircraft departures. Additionally, LAWA should install, with permission of the FAA, a radio receiver with dictaphone capabilities that will identify airport tower clearance "N" number and "real time" operation information. At the Steering Committee meeting on May 29, 2001, the need to investigate the feasibility of obtaining a noise monitoring system with real time capabilities was emphasized. It was also emphasized that any such noise monitoring system not be used for enforcement of any pre-set noise thresholds.

Lead Agency/Action: LAWA to acquire monitoring system, coordination with FAA on installation and LAWA noise abatement officer at VNY to manage system through coordination with FAA and VNY Airport Manager
Reference/Analysis: Steering Committee meeting minutes of 2/27/91, 2/24/92, 3/24/92, 11/8/2000 and 5/29/01; Technical Committee meeting minutes of 7/16/91
Cost/Benefit: cost of system is estimated at $300,000; benefits are tied directly to action Items 12 and 13, noise abatement procedures
Source of Funding: FAA, LAWA
Timeframe: short range, current to three years

18) Automated Feedback System

Establish an automated feedback system to those in the community such that residents are assured that data kept on a daily basis is accurate and reliable. Acquire ANOMS, or a similar system, that has the capability to interface with ARTS 3 data, track aircraft by altitude, provide a hard copy of individual flight information characteristics, and provide automated noise monitoring correspondence capabilities. LAWA should maintain and upgrade over time.

Lead Agency/Action: LAWA to acquire monitoring system, LAWA noise abatement officer at VNY to manage system through coordination with FAA and VNY Airport Manager
Reference/Analysis: Steering Committee meeting minutes of 2/27/91, 2/24/92, 3/24/92 and 11/8/2000; Technical Committee meeting minutes of 7/16/91
Cost/Benefit: Cost of system is included in Item 18; Benefits are tied directly to action items 13 and 14, noise abatement techniques and procedures
Source of Funding: FAA, LAWA
Timeframe: short range, current to three years

19) Tenant Association

Establish a more formalized tenant association willing to communicate with violating pilots, to voluntarily comply with the "Fly Neighborly" programs and procedures established at Van Nuys Airport.

Lead Agency/Action: LAWA, VNY Tenant Association coordination
Reference/Analysis: Section 2 of Volume 1 of 3 of the Background Appendices, Community Opinion Survey; Steering Committee meeting minutes of 2/24/92, 3/24/92 and 11/8/2000
Cost/Benefit: Minimal staff costs; benefit is to enhance effectiveness of noise abatement procedures
Source of Funding: LAWA
Timeframe: short range, current to three years

20) ATIS Message

Request that the FAA, a partner in this project, change its regional policy to allow local control towers to add a brief "Fly Quietly" message to its Automatic Terminal Information System (ATIS). Provide a message on the ATIS system that states: "Due to excessive aircraft noise levels, aircraft operating at VNY should fly in a friendly manner," utilizing NBAA or manufacturer's noise abatement procedures. The program should be maintained over time.

Lead Agency/Action: FAA to implement based on input from LAWA
Reference/Analysis: Steering Committee meeting minutes of 2/24/92, 3/24/92 and 11/8/2000
Cost/Benefit: Minimal costs; benefit is to enhance effectiveness of noise abatement procedures
Source of Funding: FAA
Timeframe: short range, current to three years

21) Marketing Policy

Develop and adopt a noise-sensitive marketing policy for VNY that will encourage the voluntary introduction of quieter aircraft into VNY operations and discourage the use of noisier aircraft.

Lead Agency/Action: LAWA, VNY Tenant Association coordination
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Nominal staff costs; benefit is to enhance effectiveness of noise abatement procedures
Source of Funding: LAWA
Timeframe: short range, current to three years

22) Financial Assistance

Develop a program to provide financial assistance to residents who are interested in moving out the noise impact area.

Lead Agency/Action: LAWA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Costs are indeterminable and dependant on the extent of participation; benefits will be to optimize the minimization of incompatible land uses
Source of Funding: LAWA, FAA
Timeframe: short range, current to three years

23) Noise Abatement Officer

Continue the position of a full-time noise abatement officer as part of the Van Nuys Airport Manager's Office who, working with the Airport Security, can continually monitor jet aircraft departures, report them to the Airport Manager and the community in terms of amount of noise generated on departure. The officer shall be responsible for operation of the permanent monitoring system, serve as a community liaison regarding noise issues, coordinating with aircraft pilots and collection and response to noise complaints.

Develop a program to improve formal lines of communication between the FAA, the airport, and aircraft operators on noise abatement procedures. Within the context of general guidance to the noise abatement officer in communication with aircraft operators, the VNY noise complaint system should be improved to provide greater feedback to operators, and link complaints to actual noise reduction measures. The function of the noise complaint system should be expanded to effectuate reductions in noise and not merely be used for public relations purposes.

Lead Agency/Action: LAWA to coordinate noise abatement office through VNY Airport Manager
Reference/Analysis: Section 2 of Volume 1 of 3 of the Background Appendices, Community Opinion Survey; Technical Committee meeting minutes of 2/19/91; Steering Committee meeting minutes of 2/24/92, 3/24/92, 11/8/2000, 5/29/01 and 7/16/01
Cost/Benefit: Annual salary and benefits of noise abatement officer approximately $90,000; benefit is improved communication and noise abatement management
Source of Funding: LAWA
Timeframe: short range, current to three years

24) Noise Abatement Information

Compile available information on noise abatement procedures from manufacturers, pilots, and noise offices at other general aviation airports to be made available to pilots operating at VNY.

Lead Agency/Action: LAWA shall obtain and manage data
Reference/Analysis: Technical Committee meeting minutes of 2/19/91; Steering Committee meeting Minutes of 2/24/92, 3/24/92 and 11/8/2000
Cost/Benefit: Minimal costs; benefit is to enhance effectiveness of noise abatement procedures
Source of Funding: LAWA
Timeframe: short range, current to three years

25) Raising Burbank Glideslope

Continue coordinated research with the FAA to investigate the feasibility of raising the approach glideslope to Burbank to allow an increase in operating altitude for helicopter and fixed winged operations. If feasible, practical, and safe, this could raise air space over VNY by as much as 1,500 to 2,000 feet. LAWA shall request the FAA to conduct a study resulting in increasing the glideslope angle for Burbank Airports' Runway 8ILS approach to the maximum practicable so that operational altitudes at VNY can be raised without conflict with Burbank Airport Traffic.

A 1,500 to 2,000 foot above ground level (AGL) minimum altitude would be required for helicopters. The Steering Committee recommends that this measure be forwarded to the VNY Helicopter Task Force as an item that they request be considered. Pending the outcome of the evaluation by the Task Force this measure would be subject to possible further modification. Ongoing monitoring and implementation should be maintained.

Lead Agency/Action: FAA, LAWA to coordinate program to initiate feasibility analysis
Reference/Analysis: Steering Committee meeting minutes for 2/24/92, 3/24/92, 11/8/2000 and 5/29/01; Section 4 of Volume 1 of 3 of the Background Appendices, Helicopter Study
Cost/Benefit: Costs would include adjustments to ILS system and navigational aids; primary benefit is to reduce single event and overflight noise and cumulative noise level reductions commensurate with amount of increase in glideslope
Source of Funding: FAA, LAWA
Timeframe: long range, five to eight years

26) Lease Policy

Recommend that it be a policy of the BOAC to add to any future new leaseholders a requirement that they only station (base) Stage 3 aircraft at Van Nuys Airport. New leaseholders being defined as Fixed Based Operators (FBO's) who are not currently on this airport but who wish to move onto the airport in the future. The requirement would only apply to based aircraft and not to itinerant aircraft. Based aircraft are defined as any aircraft which is parked, hangared, or tied down at VNY for more than 90 days.

Lead Agency/Action: LAWA to adopt Board Resolution
Reference/Analysis: Steering Committee meeting minutes of 4/25/89, 3/24/92 and 11/8/2000; Volume 2 of 3 of the Background Appendices, Report on Public Workshop of 4/25/89; Table 6 of NCP Report, Cost/Benefit Analysis
Cost/Benefit: Cost burden on new leaseholders would be dependent on requisite replacement of aircraft within their fleet; benefits include incremental reduction in noise impacts commensurate with rate of turnover of aircraft
Source of Funding: New tenants
Timeframe: long range, five to eight years

27) Air Traffic Control Tower

Request the FAA to upgrade the VNY Air Traffic Control Tower from a level 3 tower to a level 4 tower. An upgrade to a level 4 control tower would result in more efficient and improved operational control and could provide for increased tower personnel on duty to support the recommendation that the tower be operated 24 hours a day.

Lead Agency/Action: FAA to establish upgrade
Reference/Analysis: Steering Committee meeting minutes of 3/24/92 and 11/8/2000
Cost/Benefit: Cost dependent on amount of increase in manpower and associated resources; benefit is enhanced effectiveness of measures
Source of Funding: FAA
Timeframe: short range, current to three years

28) Aircraft "N" Numbers

Recommend to the FAA that larger "N" numbers be required on aircraft. Larger "N" numbers on aircraft, particularly on the bottom side of wings, would enhance a citizen's ability to identify an aircraft, thereby better enabling utilization of the noise complaint procedures.

Lead Agency/Action: FAA to instigate policy with coordination from aircraft owners and manufacturers
Reference/Analysis: Steering Committee meeting minutes of 3/24/92 and 11/8/2000
Cost/Benefit: Costs would be significant to existing aircraft owners collectively; benefit is to promote identification of errant aircraft
Source of Funding: Aircraft owners and manufacturers
Timeframe: short range, current to three years

PART 161 MEASURES – Anytime an airport operator proposes to enforce or implement a measure that will effect the access to an airport, a cost benefit analysis must be conducted in accordance with federal regulations. The following seven measures (Numbers 29 to 35) are recommended to be included and fully evaluated in a comprehensive Part 161 Study to be conducted in compliance with the requirements of Federal Aviation Regulations Part 161. A determination on whether to further pursue any or all of the seven measures would be predicated on the findings and conclusions of that Part 161 Study.

29) Incentives/Disincentives in Rental Rates

Subject to a Part 161 Study, a system of incentives and disincentives could be established to encourage greater use of quieter aircraft and less use of noisier aircraft. Subject to the findings and conclusions of the Part 161 Study, a program would be developed to have rental rates for leases and tie downs correlated to the level of noise generated by the aircraft to encourage quieter aircraft usage.

Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; an objective would be to have such a program revenue neutral in comparison to typical rental rates; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid-range, three to five years

30) Incentives/Disincentives in Landing Fees

Subject to a Part 161 Study, a program would be developed to establish differential landing fees with higher fees for noisier aircraft and lower fees for quieter aircraft.

Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; an objective would be to have such a program revenue neutral in comparison to typical landing fees; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid-range, three to five years

31) Expansion of Fines

Subject to a Part 161 Study, a system of fines would be developed to be imposed on aircraft operators who violate policies at VNY. Increased fines would have a deterrent effect on aircraft operators who violate existing ordinances at VNY. The existing voluntary Fly Friendly program would be made a mandatory program with penalties. After two violations, operators who violate the "Fly Neighborly" program would be fined $500 for the third noisy operation. The fourth citation fine would be $1,000, and the fifth, $2,000. Any operator who receives a sixth citation letter would be banned from using the airport.

Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; an increase in revenues to LAWA would be realized from imposition of the fines; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid range, three to five years

32) Maximum Daytime Noise Limits

Subject to a Part 161 Study, maximum daytime noise limits for aircraft operating at the airport could be established. Subject to findings and conclusions of the Part 161 Study, an ordinance would be developed to establish a daytime maximum noise limit of 77 dBA for aircraft operating at the airport.

Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid-range, three to five years

33) Limit on Stage 3 Jets

Subject to a Part 161 Study, a cap on the number of Stage 3 jets that may be based at VNY would be established.

Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid-range, three to five years

34) Expansion of Curfew

Subject to a Part 161 Study, the curfew provisions currently contained in the Van Nuys Noise Abatement and Curfew Regulation could be expanded.

A) The existing 10:00 p.m. to 7:00 a.m. curfew would be expanded to include all non-emergency jets.

B) The existing 10:00 p.m. to 7:00 a.m. curfew on all non-emergency jets would be expanded to include non-emergency helicopter operations. This proposed measure would be subject to further evaluation within the context of the Part 161 Study.

Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01 and 7/16/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid-range, three to five years

35) Cap/Phase Out of Helicopters

Subject to a Part 161 Study, a cap or phase-out the current fleet of helicopters would be investigated. The measure would also be forwarded to the Helicopter Task Force, as an item that should be considered. Pending the outcome of the investigation into the feasibility and desirability of the measure by the Task Force, the proposed measure would be subject to further evaluation within the context of the Part 150 Study.

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Lead Agency/Action: LAWA in coordination with the FAA
Reference/Analysis: Steering Committee meeting minutes of 5/29/01
Cost/Benefit: Total costs are indeterminable and predicated on the findings and conclusions of the comprehensive Part 161 Study; cost of the Part 161 Study itself is estimated to be approximately $2,000,000 for all seven measures; benefits would be to decrease noise impacts
Source of Funding: FAA, LAWA
Timeframe: Mid-range, three to five years

Analysis & Description of NCP Measures

During development of the VNY Part 150 Study LAWA requested an informal response from the FAA to each of the alternative measures that had been considered for inclusion in the NCP. One of the suggestions from the FAA was that the Study should include a description of the relative contribution of each of the proposed measures to the overall effectiveness of the whole program. This included both those alternatives that were adopted and those that were rejected. They indicated that this must be identified within the NCP documentation and may be in narrative form and may be brief. The FAA further suggested that it encourages the analysis of any proposed noise and access restriction in a comprehensive Part 150 study prior to conducting a Part 161 analysis. The Part 150 study should analyze nonrestrictive measures to mitigate noise and then analyze the proposed restriction as a last resort to address a noise problem not mitigated by other measures.

Beyond the brief narrative analyses, the Part 150 regulations call for quantification of noise and/or land use benefits wherever this may be applicable. For alternatives which lend themselves to quantification, the documentation is required under Section 150.23 (e)(5) to include the actual or anticipated effect on reducing noise exposure to individuals and non-compatible land uses and preventing the introduction of additional non-compatible uses within the area covered by the Noise Exposure Maps. Quantified effects must be based on relevant expressed assumptions concerning the type and frequency of aircraft operations, number of nighttime operations, flight patterns, airport layout including planned airport development, planned land use changes, and demographic changes within the 65 dB CNEL contour. The most representative measures of those that lend themselves to quantification are those dealing with insulation of incompatible dwelling units or facilities and the Fly Friendly Program. Measures that address insulation factors include #2 and #3. The Fly Friendly Program, which establishes aircraft procedures to reduce noise impacts, is manifested in measures #12 and #13 (refer to pages 66-67 and 86-88 for description and analysis),.

Most of the measures contained in the NCP are intended to provide brief outlines or establish a general direction of programs that would be fully developed, if and when the measures are implemented. They are not necessarily intended to have all the details that may be needed to carry out the objectives of the measure. Correspondingly, most of the analyses that follow are of a general nature and are not intended to supercede or otherwise replace any other extensive analysis, which may be conducted on any of the measures, in particular as with the detailed type of analysis that would be done with a comprehensive Part 161 Study. They are only meant to provide an overview and a framework to supplement the discussion of each measure. Within that context the analyses of each the measures are listed here in the same order as they are found in the NCP, followed by analyses of those alternatives that were considered and then rejected by the Steering Committee for the Study.

1) ALUC Plan: Adopt an Airport Land Use Commission (ALUC) Airport Comprehensive Land Use Plan (CLUP) for VNY and environs reflecting the provisions of the VNY Part 150 Study. The program will be subject to ongoing monitoring and implementation.

Analysis: The Los Angeles County Department of Regional Planning, in conjunction with the ALUC, is responsible for preparing the CLUP and making periodic revisions as needed. A countywide CLUP was adopted in 1991 for all public-use airports in Los Angeles County. In May 2002 the ALUC initiated a process to update the countywide CLUP and replace it with individual plans for each of the 15 public-use airports in Los Angeles County. A primary objective of the CLUP is to ensure that land uses within the 65 CNEL noise impacted area of an airport contain the minimum amount of non compatible uses that can be reached. This would be accomplished by taking steps to remove existing non-compatible uses, or convert them to compatible uses, as well as preventing new non-compatible uses from being placed in the area. Ideally there should ultimately be no incompatible uses.

The purpose of this measure is to emphasize that all of the applicable measures in the NCP are fully considered when revisions are made to the CLUP for VNY. These include changes in local land use plans, zone changes, purchase assurance programs and other financial incentives that will contribute to the objective of the Plan. Because various agencies, such as the Los Angeles City Planning Department, are involved in the control and implementation of these factors it would not be possible for LAWA to assign a requisite timetable as to when all non compatible land uses may eventually be replaced with compatible uses. It is reasonable to assume that it would exceed the five-year timeframe for the forecasted NEM. However, this measure should help to facilitate and hopefully expedite the process and thereby reduce noise impacted areas.

2) Insulation

A) Undertake and validate an acoustical insulation program and estimate representative housing types within 70 CNEL.

B) Once validated, establish eligibility for residential acoustical insulation in the greater Van Nuys Airport areas subject to impacts of 65 CNEL or greater. The initial target area will be the households within the 70 CNEL.

C) Expand eligibility program to include the 65 CNEL. If any portion of a lot lies within the 65 CNEL then it should be included. Continue acoustical insulation program until all houses impacted are insulated.

Analysis**:** LAWA has begun a noise insulation program with a budget of $15,000,000 for residences impacted by VNY. The purpose of this NCP measure is to complement and expand upon the scope of that program to ensure that the occupants and owners of all residences within the 65 CNEL or greater noise contour are provided the opportunity to have their houses or apartment units insulated. The intent of an insulation program is to parallel the objectives of the ALUC plan and other measures that would ultimately convert incompatible land uses within the 65 CNEL to compatible uses. To the extent that this latter effort may take many years to achieve it is advantageous to pursue an insulation program which will

effectively create compatible uses within the interior spaces of residential structures. Unfortunately, insulation programs do not address the exterior yard space of houses. Therefore, in addition to the insulation program efforts should continue to convert non-compatible uses to compatible ones, such as commercial and industrial land uses, over the long term.

The Noise Exposure Maps (NEM) quantify the number and type of non-compatible uses within the 65 CNEL. The land use impact analysis, generated with the Fly Friendly mitigation measures but without the insulation mitigation measure applied to the NEM for the future case in 2006, demonstrated that 2,507 residential units would be within the outer noise contour. This represents a reduction of 976 units from the unmitigated number of 3,483 incompatible units as shown on the 2006 Comparative NEM without mitigation measures, on Exhibit #2. The resulting 2,507 units will include 639 single-family units and 1,868 multi-family units. Using an average insulation cost of $28,000 for single family units and $15,000 for multi-family units, the total estimated cost would be approximately $45.9 million. The unit cost estimate was provided by LAWA's Residential Soundproofing Division based on their current program in August 2002 at VNY. Assuming approximately 232 units can be insulated each year it will take about eleven years to complete the program. Predicated upon FAA approval of the program by the end of calendar year 2002 a total of 1,160 units should be done between 2002 and 2006. The five-year 2006 NEM with mitigation measures, illustrates this schedule with a reduction of 1,160 units from the 2,507 units in the impacted area for a net number of remaining incompatible units of 1,347 as shown on Exhibit #3.

3) Additional Development Within Impact Area
   A) Adopt measures to restrict the introduction of new housing within the projected 65 CNEL, unless such property is soundproofed and an avigation easement granted in favor of the airport. Maintain and monitor General Plan over time to assure airport/community compatibility.
   B) Encourage owners of undeveloped land to voluntarily develop the property consistent with State Noise Standards.

Analysis**:** This measure feeds into the scope of the ALUC plan and also establishes an objective, that is independent of that plan, to minimize non-compatible land uses within the impacted area. As indicated previously it is preferable to remove and/or prevent the introduction of all non-compatible uses. However, land use decisions of this sort are primarily at the discretion of the City Planning Department. If the Planning Department chooses to allow further residential uses within the impacted area then the intent of this measure is to ensure that such uses are only allowed if they are fully soundproofed. The insulation for the soundproofing would be sufficient to cause interior spaces to meet the requisite levels to qualify for the definition of a compatible use.

Secondly, this measure would require any new non-compatible uses to only be allowed if an avigation easement is attached to the title of the property. This type of measure is intended to ensure that the airport authority is protected by any potential litigation from the owner of the

new non-compatible use over noise impacts. But in addition to protecting the airport such an easement acts as a deterrent to introducing the non-compatible use in the first place since it creates a restriction on the property rights. In concert with this deterrent the measure advocates encouraging the landowner to develop property consistent with State noise standards. The intent is to communicate with the landowner that the optimal use for the property would be compatible type uses.

The purpose of this measure is not to reduce existing non-compatible uses but to prevent or discourage the introduction of new ones. To this extent there cannot be any quantification on the level of mitigation of existing impacted uses since, by definition, it is only intended to address new uses. Conversely, it would be highly speculative to attempt to quantify the amount of property this measure might prevent from becoming non-compatible. The measure of ultimate success for this measure would be no change (as a result of any increase) from the existing level of impacted areas. It is important that, in order for this measure to reach its objective, every effort be made to maintain communication with the City Planning Department, any other applicable planning agencies, and individual property owners to achieve the intent of the measure.

4) Construction and Capital improvement
   A) Construct airfield improvements shown on the current airport layout plan to improve safety and convenience.
   B) Provide the means to develop neighborhood enhancement projects with a focus on noise mitigation (e.g. sound walls, landscaping).
   C) Construct a hush house on the airfield to suppress jet engine maintenance noise, with the location to be determined after further study.

Analysis**:** Part A of this measure pertains to airfield improvements that are intended to improve safety and convenience. This would include such improvements as signage, even transitions between taxiways and the runways, and other construction or developments that would facilitate the smooth operation of aircraft on the airfield. Ideally these types of improvements would reduce delays, unnecessary idling and conflicting flight paths of aircraft and possibly overflights. It probably is not possible to quantify the level of noise reduction that such improvements might contribute. However, they should help to alleviate associated noise impacts to a certain extent.

Parts B and C of this measure are directed towards enhancement projects that abate noise emanating from ground level sources on the airfield. These would include sound walls and landscaping located between residential areas and primary hot spots of noise generation on the airfield, such as maintenance areas, ends of the runways or areas where engine run-ups occur during takeoff of aircraft or other related activities. Part C specifically refers to the construction of a hush house which would be used to muffle the sound of aircraft during engine run-ups during maintenance. This would pertain in those situations where it is practical to take an aircraft to such a facility.

A program would be undertaken to evaluate the location and scope of these improvements. It is possible to quantify the noise reduction of such facilities as sound walls and a hush house. However, two factors need to be taken into consideration in this regard. The first is that without specific design parameters established it would be speculative as to what extent the mitigation would result. In particular the length, height and width of a sound wall would be important determinants of the program to be developed before realistic noise reduction quantification could be generated.

The noise reduction potential of a hush house might be more subject to quantification prior to full program development. However, the second factor to consider, which is more relevant, is that these types of improvements would probably have little or no measurable effect on the noise contours. Although, they would provide noise relief to residents in close proximity to the improvements, this mitigation would not transfer to changes in the noise contours since the contours are modeled after and primarily predicated upon aircraft operations above the ground and in flight.

5) VNY Helicopter Policy: Formulate and adopt local plans and ordinances as necessary to regulate the establishment and operation of new helicopter landing facilities in the general area. Monitor, maintain, and adjust plans and ordinances over time.

Analysis**:** The purpose of this measure is to develop plans for the siting of new helicopter facilities and establishment of operational procedures. Both location criteria and operating procedures are important factors in minimizing the impact of helicopter operations on non-compatible and sensitive areas. A primary objective of such a planning effort would be to develop location criteria that take into account both the sensitivities of the impacted areas as well as the operational needs of the helicopter operators to achieve an optimal balance. In-flight operational procedures would complement the location criteria as an extension of the objective to maintain an optimal balance between the often conflicting objectives of minimizing noise impact and allowing operators to function in an effective manner.

There are currently eight primary routes out of VNY that helicopter operators have been encouraged to use for many years. These include tracks north and southbound over the San Diego Freeway, northbound over Balboa Blvd, over Stagg St east of the airport, southbound over the Sepulveda Flood Control Basin, southbound over Bull Creek, over Saticoy St west of the airport, and west and eastbound over the railroad tracks that are located immediately north of the airport. The planning process would initially evaluate whether there should be any adjustments to these tracks. Secondly, the plan would identify those locations for helicopter landing facilities that have the closest access to each of the applicable tracks and would minimize noise impacts.

The planning process would be initiated after the measure is approved by the FAA. Specific quantification of noise impact benefits to be derived would have to await the completion of the planning and approval process. One key feature of the plan should be the strengthening of steps to have helicopter operators maintain close compliance with existing (or potentially

revised) tracks. Another important factor to be considered is the establishment of minimum operational altitudes for helicopters within safety constraints. This factor is addressed in other measures in the NCP as well. Addressing these factors in the most appropriate manner, and taking into account the cumulative benefits of all the helicopter measures, should ensure a significant reduction from noise impacts or nuisance factors associated with helicopters in the area around VNY.

6) West Side Operations: Investigate whether to encourage helicopter pilots operating west of VNY to increase their altitude 300 feet which may be accommodated under the existing Burbank glideslope.

Analysis**:** This measure would initiate an investigation and analysis as to whether it would be feasible to encourage helicopter operations to increase their operational altitude by 300 feet in the area west of the airport. Burbank Airport (BUR), which is located approximately seven miles east of VNY, has one its approach patterns go over VNY. The purpose of this measure is to determine whether the approach pattern in the area west of the airport is high enough to accommodate an increase in operating altitude of helicopters flying beneath the BUR pattern.

Pending the determination of the investigation the altitude for helicopters could be raised the suggested 300 feet. If this increase were to be made mandatory, or otherwise have compliance assured, it would provide relief to residents in the area from the nuisance noise factor that is experienced from helicopters. The primary advantage of such a measure would probably be realized outside of the 65 CNEL in the form of reduction of single event and overflight noise.

7) Training Facility: Conduct testing and research to determine whether a helicopter training facility would be appropriate on the Bull Creek Site. Such a facility would preclude the need for helicopters to leave the airport to train elsewhere. Any such facility would be limited in the number of operations allowed as determined by further study.

Analysis**:** The objective of this measure is to reduce the helicopter operations that are necessitated by training requirements that can now only be met at other airports. An evaluation would be conducted to determine whether the Bull Creek Site could accommodate any or all of these training requirements. If it is determined that such a facility could be provided at this site then plans would have to be developed to set a schedule for development and the scope of the facility.

Quantification of the noise impact benefit would depend on how many operations could actually be diverted to the new facility, which in turn would be predicated on the findings of the feasibility study. It is worth noting that by establishing such a facility at VNY it would provide a good opportunity to directly instill in pilots the philosophy of flying friendly and mitigating noise impacts. The curriculum could stress the need to follow existing noise abatement procedures, as well as advocate those procedures yet to be developed as suggested in measures in the NCP.

8) Improve Use of Established Routes: Develop a program to require helicopter operators to fly along established routes, in particular Stagg Street instead of Saticoy Street, and be encouraged to maximize operations over the least noise sensitive areas such as the industrial development to the east and the Flood Control Basin to the south.

Analysis**:** This measure reiterates the intent of previous measures dealing with preferred helicopter tracks. Emphasis is placed on the need for pilots to adhere to the Stagg St track instead of the practice of some operators to fly over Saticoy St. It also calls for the further encouragement of helicopter operators to fly over industrial areas to the east and the Flood Control Basin to the south to avoid noise sensitive areas. The purpose of the measure is to initiate the development of a program to ensure that compliance is maintained with these and other helicopter operational procedure.

Quantification of the noise impact benefits to be derived from this measure would have to wait for the specific aspects of the program to be developed. As with other helicopter related measures much of the benefits to be realized from this measure would be experienced outside the 65 CNEL contour and therefore would not necessarily mitigate or effect that contour to a great extent. Nonetheless, this measure would improve the nuisance factors typically associated with helicopter operations in the area around VNY.

9) Bull Creek Route to Balboa: Investigate the feasibility of moving the Bull Creek route to the west, over Balboa Boulevard, to reduce noise over residents in the Creek area. Surface traffic on the Balboa Boulevard route should mask some of the noise from helicopters. This recommendation should be considered, but careful evaluation is needed by local residents and pilots.

Analysis: As with the preceding measure this measure reiterates the intent of other helicopter programs outlined in the NCP which is to evaluate the noise abatement efficacy of current helicopter tracks to determine whether adjustments should be made. This specific measure focuses on the potential to move the track currently over Bull Creek westerly to Balboa Blvd. The purpose of the measure would be to initiate a feasibility study to evaluate the effectiveness of the proposal incorporating feedback from local residents to account for subjective interpretation of noise impacts and mitigation.

Because of the close proximity of the helicopter track over Bull Creek to the western sideline of the 65 CNEL, movement of this track to Balboa Blvd may only have a marginal effect on the 65 CNEL. This is because the track is essentially outside of the 65 CNEL, which would lessen the effect, and as indicated previously helicopter sound energy is basically subsumed by higher emitting effects of jet operations. However, the primary benefit of this measure would be to minimize the nuisance effect on the residents located between Bull Creek and the airport.

10) Public Service Fleets: Work toward enactment of an ordinance that would require City-owned helicopters to maintain specified altitudes (depending on fixed-wing conflicts), except when a mission requires a lower altitude or an orbiting maneuver. Under FAA regulations, helicopters must now be at 500 feet altitude within the Van Nuys Airport Traffic Area (ATA), which extends five miles in all directions from the airport. The ordinance would require helicopters within and outside the Van Nuys ATA to maintain sufficient altitude so as not to be a nuisance to local residents, particularly when they are transiting an area. The sufficient altitude would be determined during the development of the ordinance but, at a minimum, would maintain the 500 feet altitude currently flown in the ATA.

Analysis**:** The objective of this measure is another example of one the elements of the overriding helicopter policy that was described previously to explore various means to achieve reductions in noise impact in and around VNY. This measure has a specific application to operating altitudes. The focus of the measure is on public service helicopters which include police, fire, and other general service operations that are routinely performed by government agencies. This measure differs from other measures by the recommendation that an ordinance be developed, which would mandate that compliance be maintained for prescribed altitudes.

Initially a study would need to be done to identify the most appropriate operating altitude, or if necessary multiple altitudes, at which public service helicopters can safely and efficiently operate. One of the issues to be addressed is the practice of police helicopters to fly at low altitudes while travelling from one point to another. They engage in this practice to ostensibly maintain observations of anything on the ground that may indicate criminal activity or related problems are occurring to which they might need to respond or alert patrols on the ground. The study would need to confirm whether this practice needs to be done all of the time or if it could be limited to specified conditions.

Other such practices would need to be evaluated for all public service helicopter operations to determine if there are optional practices that cause noise impacts but can be adjusted to raise altitudes. The conditions necessary to enable operators to raise their altitudes would be articulated within the context of the ordinance to be developed. The level of reduction for noise impacts would depend on the establishment of the specific conditions when helicopters would operate at the prescribed altitudes. From these factors a determination can be made as to how many operations would be affected and how this would translate to a measurable reduction in nuisance from helicopter noise

11) Improved Communications: Improve communications between the airport, the FAA, helicopter operators, and residents in an effort to reduce the impact and negative perception of helicopter operations. Residents would be encouraged to provide as much information as possible regarding helicopter infringements, to increase follow-up by the airport and improve self-policing by helicopter operators and individual pilots.

Analysis**:** This measure is intended to establish procedures and guidelines for helicopter operators to minimize their noise impact on the community. There would essentially be three phases to this effort. The first phase would be to initiate an open forum where all of those involved can meet and share ideas on how to balance each of their respective needs. The parties involved would include those residents who are impacted, those operators who are causing the impacts and those who have varying levels of responsibility in controlling the noise impacts. The Helicopter Task Force for VNY in conjunction with the Citizens Advisory Committee would probably be the best vehicles for this endeavor.

The next phase would be to identify and document all the conditions and procedures that are agreed upon in the form of a guidebook for helicopter operations. This guidebook would build on existing VNY helicopter policies and expand upon them to include the objectives outlined in the preceding measures as well as others that evolve out of the Task Force. In particular this effort would be developed in conjunction with the intent of measure #5, which concerns operating procedures of helicopter operators, as well as consideration of locational criteria for landing and departure facilities. The guidebook would be a dynamic document subject to adjustments as practical applications of its provisions are evaluated and their effectiveness determined.

The third phase of the measure to improve communication would be to continue to have on-going feedback from all participants on the efficacy and applicability of the guidebook and its individual elements and provisions. This would be accomplished by continuing to periodically have open forums and community meetings to allow group exchanges on the guidebook and general operational conditions. It would also be maintained thru individual comments or complaints made to the Noise Abatement Officer (refer to measure # 23). This information could be directed to individual operators to rectify specific situations. The Noise Abatement Officer could also collate and coordinate the collective comments received and use them to recommend potential changes in procedures, which could be considered in open forums.

12) Establish Noise Abatement and Departure Techniques for all Aircraft Departing VNY: Modified or reduced noise takeoff procedures would vary according to aircraft type, size, and weight. Some aircraft might be required to fly a steeper takeoff profile while others would find it necessary to use a more shallow profile. The takeoff parameters for aircraft would be established through continuous measurement of individual aircraft noise levels using approved manufacturers or NBAA procedures.

Analysis**:** This measure, in concert with measure #13, constitutes the heart of the NCP. The purpose of the measures is to establish flight procedures that will significantly reduce noise impacts from aircraft departures. Initially, approved manufacturers or NBAA noise abatement procedures would be used and these would be evaluated and where necessary modified to improve their effectiveness. Data on noise levels is constantly recorded by LAWA's monitoring system, which surrounds VNY with seven noise monitors that are routinely calibrated. In conjunction with the FAA's ARTS data the noise level of each

aircraft operation can be determined and used to analyze whether modified flight procedures are working or should be adjusted.

Modifications were made to arrival noise profiles in the Integrated Noise Model (INM) for certain Stage 2 and Stage 3 business jets, along with propeller and military type aircraft. The user defined arrival profiles were adjusted to reflect the typical operational characteristics for ILS landings. These profiles are elevated at VNY above the standard three-degree glideslope that is represented in the INM for most airports. Because of surrounding terrain aircraft arrivals at VNY normally land at 3.9 degrees. This parameter was incorporated into the INM used for the NEM's in the VNY Part 150 Study.

The departure profile modifications for the Stage 2 aircraft represent the mitigated noise energy levels that result from compliance with the fly friendly procedures tailored for applicable aircraft. The modified noise profiles were developed by the consulting firm of Landrum & Brown and approved by the FAA. A full description of the methodology used to develop the modifications is contained in Volume 3 of 3 of the Background Appendices to the VNY Part 150 Study. The modified departure noise profiles were done for the INM designations for the noisiest jets including the Falcon 20, the Gulfstream GIIB, and the Lear 25. All jet aircraft assigned to these designated INM aircraft types were adjusted by the modifications.

13) Establish Noise Abatement and Departure Procedures: Adopt Scenario No. 9 of the Part 150 scenarios as the NCP, based on reduced take-off thrust power settings within safety levels for all jet departures and prohibit aircraft having Part 36 takeoff noise levels in excess of 74 dBA (excluding emergency flights), between the hours of 10:00 p.m. and 7:00 a.m. (These procedures are commonly referred to as the Fly Friendly Program)

Analysis**:** The purpose of this measure is to implement the intent of the noise abatement flight departure procedures for jets that were identified as a result of measure #12. Since the mid 1990's a voluntary program has been in place to fulfill the noise mitigation objectives of the measures. As a result of voluntary compliance with fly friendly procedures there has been a significant decrease in the size of the 65 CNEL and more than 28% reduction in the number of impacted residential units within the future case contour (excluding the 1160 residential units that are expected to be insulated during this period). Reference should be made to Exhibits #2 and #3 for a comparative analysis of the 65 CNEL with and without the Fly Friendly Program applied.

The majority of jet operators comply with the procedures that have been established for their aircraft type and reach the reductions in noise level thresholds that have been targeted. For those pilots who do not reach the thresholds a letter is sent requesting their voluntary compliance with the flight procedures in all future operations. With the formal adoption of this important measure as a crucial part of the NCP the favorable responses to requests to comply with the program should continue to be strengthened. Consideration should be given to accelerate or intensify the current follow-up applied to the violators of established

thresholds. The objective should be to evaluate alternative means to achieve the optimal level of compliance possible and implement those that are the most effective. The thresholds should be periodically reviewed to make adjustments where necessary with the objectives of minimizing noise impacts within bounds of safety for the pilots as well as consideration of creating undue burdens on aircraft operators.

The other component of this measure proposed to expand the hours of the existing curfew. Resolution # 12655, which was adopted in 1981 by the Los Angeles Board of Airport Commissioners, established a noise regulation for VNY. The contents of that Resolution were incorporated in Ordinance #155,727, adopted by the Los Angeles City Council. An element of that Ordinance was a nighttime curfew between the hours of 11:00 p.m. and 7:00 a.m. for all jet departures that exceeded 74 dBA, with specified exemptions such as with emergencies and law enforcement. In 1997 an amendment to the curfew was adopted in Ordinance 171,889, which extended the curfew to the hours of 10:00 p.m. to 7:00 a.m. the following morning. The purpose of this NCP measure is to emphasize and reinforce the intent of that amending ordinance.

14) Signage: Re-sign the airport at every departure point/intersection of both runways with signs that can be read both day and night that provide the following:

A) Please Fly Quietly
B) Departing South: No Turns Before the Flood Basin
C) Departing North: No Turns Before 1,800 MSL

On intersection signs only, the following words should be included: Intersection Departures Are Not Allowed Between 10 p.m. and 7 a.m. Implement immediately with larger, clearer signs being posted at every run-up area describing recommended noise abatement procedures, including altitudes and locations at which turns should be initiated after departure, and noise sensitive areas to be avoided. Maintain program over time.

Analysis**:** The purpose of this program is put in place a variety of signs on the airfield to essentially facilitate the intent of other measures with the overriding objective to reduce noise impacts. The measure is intended to place signage immediately to strive to these ends. However, an important element of this measure should be to continuously evaluate the effectiveness of the signs by interviewing pilots as to their interpretation of the signs and how they can be made more concise and communicate the intended message.

The evaluation should also include an observed correlation between the pilots' awareness of the message of the signs compared to their actual behavior patterns. To the extent possible it should be determined whether the directives offered by the signs are effecting the operations of the pilots to achieve the intended goals. The content of the signs may be adjusted periodically to reflect the conclusions of the on-going evaluations.

One aspect of the signs that needs to be considered is that their messages will be observed by two basic types of pilots. The first type is the one who is a regular user of the airport and is familiar with the policies that are intended to address noise impacts. The second type is a pilot who does not normally operate at VNY and is not familiar with airport policies in regard

to noise abatement. The characterization of this latter type (and resulting consideration of signage design criteria) would probably also apply to some pilots who are regular users but have nonetheless not availed themselves to become familiar with airport policies to mitigate noise impacts. These types of users would not be fully aware of applicable policies.

Therefore, the signs should strive to achieve two distinct objectives. The first is to provide messages that are concise and specifically reinforce and emphasize the need for pilots to comply with known guidelines and procedures to minimize noise. The second objective would be to provide sufficient information to pilots that they are aware that guidelines and procedures do exist and that it is desirable for them to investigate their content before engaging in any further operations at the airport. The challenge is to make the signs concise enough to recognize the brief exposure the pilots would normally have to the message and might effectively respond.

15) Runway Policy - Full length departure: A "top of the runway " departure policy, (taking off at the furthest end of the runway) is part of this NCP as a reiteration of existing airport policy for jet aircraft.

Analysis**:** It has long been a policy at VNY that intersection departures are not permitted for jet aircraft. Only small piston powered or turbo prop aircraft use intersection departures. All jets use the full runway length. The primary intent of the measure is to reiterate and confirm existing airport policy to jet aircraft operations. Justification would have to be provided if there was any consideration to apply the measure to piston or turbo prop aircraft in addition to its intended application to jet aircraft.

The purpose of the measure is to ensure that all jet aircraft have the fullest opportunity to gain as much altitude as possible before flying over residential areas. With respect to southerly departures from runway 16R, an aircraft that departs from the northern most end of the runway will be higher when it flies over the south end of the runway, all other factors being equal, than if it were to depart from one of the middle intersections of the runway. This added height would diminish the noise impact at ground level. This mitigating effect is modified by the fact that there is a golf course to the south of runway 16R and the Sepulveda Flood Control Basin to the south of that. These open space areas allow aircraft to reach even greater heights before they begin their turn. As indicated in the technical analysis of this report approximately 80% of departures from VNY are made to the south utilizing runway 16R.

Conversely northerly departures from runway 34L would provide a similar advantage for residents north of the airport. Although northerly departures do not have the complementary effect of the open space that exists to the south, most departures are to the south, and therefore the greater benefit is achieved. It would be difficult to quantify the mitigating effect this action would have on the CNEL contour because of the variability of each aircraft's departure profile. More significantly, as indicated, this measure would effectively continue a practice that has already been in place for jet aircraft. Suffice to say that the implementation of this

measure should maintain a considerable reduction to ground level noise impacts in comparison to allowing intersectional departures.

16) Noise Roundtable: Establish a Noise Roundtable at VNY to review progress on the implementation of the Part 150 Study. In an effort to reduce noise impacts, the Roundtable could make adjustments to allow for the implementation of additional noise measures which might be recommended over time, if they become technically and economically feasible.

The Noise Roundtable will act as a review board for at least two years after the recommendations of Scenario No. 12 (the Ad Hoc Committee recommendations incorporated within Measures 13, 15, 18, 19, 20, 21, 24, and 26) and Scenario No. 9 are fully implemented, with the understanding that the Part 150 Study would be continued.

The Noise Roundtable will be charged with holding annual community meetings, or more frequently as warranted, to discuss the status of the Part 150 program and recommended adjustments. LAWA should annually monitor aircraft noise levels and the level of activity at the airport to determine if significant and unexpected changes have occurred to the base year NEM, and to determine if the Part 150 program is being successfully implemented.

The results of the monitoring should be provided at annual public information meetings to discuss the progress of the Part 150 plan, and to educate and inform airport users and the affected communities. Discussions with airport users regarding community complaints associated with airport operations should also be included in these annual reviews. Recommendations for updating the NEMs and Part 150 program should be provided if unexpected changes occur before the five-year period and significantly affect the land use compatibility situation around the airport, and/or the noise abatement cost assumptions used in the development of the current plan.

Analysis**:** Personnel from LAWA's Environmental Management Division currently monitor aircraft noise levels and the level of operational activities through a permanent monitoring system established at seven monitoring sites around the airport. The results of this continuous effort is manifested in quarterly noise reports that are submitted to the Los Angeles County Aviation Division and to the State Department of Transportation, Aeronautics Division. The data maintained in that program can be utilized in upgrades to the FAA's Integrated Noise Model (INM), which is the proper modeling vehicle to be used within the context of a Part 150 Study, to demonstrate changes in noise impact levels. Significant deviations from the assumptions made in the Noise Exposure Maps (NEM) for the Part 150 Study can be evaluated from this process.

The measure is related to several other NCP measures, which would support the objectives of the measure. NCP Measure #18 establishes an automated feedback system to those in the community who complain such that residents are assured that data is kept on a daily basis, is accurate, and reliable. This is a continuation of the existing noise complaint system that has been active within VNY administration in providing viable information to the public about

aircraft operations. And, NCP Measure #19 establishes a formalized tenant association willing to communicate with violating pilots, to voluntarily comply with the "Fly Neighborly" programs and procedures established at Van Nuys Airport. All of these measures address the intent of the measure.

In terms of providing a comprehensive approach to addressing noise impacts associated with an airport an analogous situation can be made with the Noise Roundtable that was recently created at LAX. This format has been successful in bringing the various stakeholders together to resolve noise related problems. A memorandum of understanding was agreed upon which commits the Los Angeles World Airports (LAWA) to pursuing a number of programs to mutually satisfy the adjoining jurisdictions and communities by mitigating noise impacts. Such a group format could also be applied to divergent interests represented at VNY. The measure should contribute to the optimal effectiveness of all of the other active measures to mitigate noise impacts by providing oversight and suggested means of improving the intent of those measures.

17) Noise Management Monitoring System: Establish a noise management monitoring and flight track system with software and database that feature the ability to positively identify all aircraft. Establish, maintain and update over time, an automated data system that will provide the following information for turbo jet and turbo fan aircraft operations (arrivals and departures):

- Aircraft "N" number sorting by types of jets;
- Aircraft Type, Owner, and Pilot;
- Part 36-3F (most recent edition) listed noise departure level;
- NBAA, or aircraft manufacturer's noise abatement operation level, and
- Actual operation noise level recorded by VNY noise monitors.

LAWA should contract with an acoustical consultant to calibrate VNY noise microphones to permit accurate and consistent "real time" monitoring of noise abatement procedures for jet aircraft departures. Additionally, LAWA should install, with permission of the FAA, a radio receiver with dictaphone capabilities that will identify airport tower clearance "N" number and "real time" operation information. At the Steering Committee meeting on May 29, 2001, the need to investigate the feasibility of obtaining a noise monitoring system with real time capabilities was emphasized. It was also emphasized that any such noise monitoring system not be used for enforcement of any pre-set noise thresholds.

Analysis**:** The purpose of this measure is to establish a system that would provide for immediate feedback to pilots when they exceed established noise standards. Measure #18 of the NCP (Automated Feedback System) refers to an ANOMS type noise monitoring system with the capability to interface with the FAA's Automated Radar Terminal System (ARTS) data. Currently the noise monitoring system at VNY must rely on the ARTS data to fully identify an aircraft. The FAA requires that ARTS data only be provided after a delay of several days. A faster response time, ideally as an event occurs (or real time), should enhance

the pilot's direct awareness of the noise problem being created by violation of the noise regulation, which hopefully would bring about a more positive reaction to mitigate that noise. Reference can be made to other measures in the NCP, including in particular #12 & 13, for additional related comments.

The FAA has advised that this measure involves the acquisition of a noise monitoring system and that consideration of such a noise monitoring system in the Part 150 Study is appropriate pursuant to Part 150 Section B150.7 (b). Implementation would not be subject to the requirements of Part 161 so long as, for purposes of aviation safety, the use of the equipment is for monitoring only and does not extend to enforcement by in–situ measurement of any pre-set noise thresholds. Use of the noise monitoring system for the purpose of enforcement of any pre-set noise thresholds will be subject to the requirements of Part 161 in association with the noise restrictions to be enforced.

18) Automated Feedback System: Establish an automated feedback system to those in the community such that residents are assured that data kept on a daily basis is accurate and reliable. Acquire ANOMS, or a similar system, that has the capability to interface with ARTS 3 data, track aircraft by altitude, provide a hard copy of individual flight information characteristics, and provide automated noise monitoring correspondence capabilities. LAWA should maintain and upgrade over time.

Analysis**:** The purpose of this measure is to reiterate and if practical expand upon the existing system that provides information to interested citizens on aircraft activities at VNY. The intent of the measure is tied directly to the preceding measure dealing with the noise management monitoring system as well as other measures which are intended to facilitate open and clear communication with those effected by noise impacts. The more quickly and accurately information can be relayed to those desiring the information the greater the sense of reliability that can be conveyed.

As indicated previously in order to fully identify a specific aircraft reliance must be place on the FAA's ARTS data. LAWA's operates a passur system that can describe an aircraft's trajectory, altitude and correlate to monitored noise levels. However, to determine ownership records of the specific aircraft LAWA must obtain this information thru ARTS data. The FAA has a policy to not release the ARTS data until three days after an event occurs to allow them to protect sensitive information such as military operations as necessary. Therefore, the information cannot be fully relayed to interested citizens until after the FAA releases it. However, obtaining the data within three days should be timely and enable relatively quick responses to noise violations and by doing so should help to facilitate the objectives of measure #13 and other measures.

19) Tenant Association: Establish a more formalized tenant association willing to communicate with violating pilots, to voluntarily comply with the "Fly Neighborly" programs and procedures established at Van Nuys Airport.

Analysis**:** This measure continues with another aspect of the theme to optimize communication among all effected parties in order to achieve the most effective results from each of the active measures striving to mitigate noise impacts. A tenant association has existed for many years at VNY. The intent of this measure is to seek ways to enhance their relationship with members of the community by adding another dimension to the functions of this association by formerly establishing procedures that will foster compliance with the Fly Neighborly program.

The tenant association is probably in the best position to effectively communicate with its pilot members the need to follow the objectives of the Fly Neighborly program. The association, in conjunction with other effected parties, can develop and adopt policies and guidelines to formerly advise pilots on the most appropriate operational procedures to use to mitigate noise while still fulfilling their individual objectives. After such policies and guidelines are established it can become a routine matter of advising pilots and thereby contribute to the reduction in noise impacts. The quantification of those noise reductions would be manifested in the specific measures for the Fly Friendly program.

20) ATIS Message: Request that the FAA, a partner in this project, change its regional policy to allow local control towers to add a brief "Fly Quietly" message to its Automatic Terminal Information System (ATIS). Provide a message on the ATIS system that states: "Due to excessive aircraft noise levels, aircraft operating at VNY should fly in a friendly manner," utilizing NBAA or manufacturer's noise abatement procedures. The program should be maintained over time.

Analysis**:** The purpose of this measure is to reinforce the comprehensive concept of communicating to pilots in a variety of ways the importance of making every effort to Fly Quietly over noise sensitive areas. This measure is intended to work in concert with the measures that would promote open communication, broaden the function of the tenant association, expand the messages of signage on the airfield, and provide feedback to pilots with the overriding objective to adhere to noise abatement procedures whenever possible. Collectively all of these efforts would help to support Fly Friendly activities, which in turn will significantly enhance efforts to reduce noise impacts in the community. The extent to which these efforts will quantitatively reduce noise impacts is dependent on the level of compliance by aircraft operators, which is subject to measurement over time.

21) Marketing Policy: Develop and adopt a noise-sensitive marketing policy for VNY that will encourage the voluntary introduction of quieter aircraft into VNY operations and discourage the use of noisier aircraft.

Analysis**:** During public discussions held by the VNY Part 150 Steering Committee it was suggested that some airports have established formal marketing policies that discourage the basing of noisy aircraft and certain types of training at their airport. One of the examples given was the Part 150 Study for the airport in Glendale, AZ. This Study could be referenced

as one source to pattern the development of such a policy at VNY. Based on the assumption that the measure does not contemplate mandatory enforcement of policies to prohibit noisy aircraft, this would be a desirable measure to incorporate into the NCP, probably without any extended analysis, except as necessary to identify the best means to attract the type of aircraft wanted.

The Los Angeles World Airports has numerous programs that are intended to reach out to desired types of industries and market various activities at each its airports. Ideally these could be adapted to incorporate policies and approaches that would encourage the introduction of quieter aircraft at VNY. However, if the proposed measure anticipates this marketing to mandate rather than simply encourage quieter aircraft then it would most likely require a Part 161 analysis, which would be handled separately. The quantification of noise impact reductions would be predicated on what types and levels of aircraft are targeted in the development of the policy.

22) Financial Assistance: Development of a program to provide financial assistance to residents who are interested in moving out of the noise impact area.

Analysis**:** Several levels of financial assistance could be evaluated within the context of this measure to determine which is most cost effective in helping to achieve the goal of reducing incompatible uses. This measure could involve the acquisition of residential property. According to the FAA consideration of a residential land acquisition measure in the Part 150 Study is appropriate pursuant to Part 150 Section B150.7 (b)(1). Implementation of such a program would not be subject to the requirements of Part 161.

Loan guarantees by LAWA/FAA might be provided to residents who wish to purchase a home outside the impacted area, but have trouble securing a loan. Voluntary purchase assurance programs within the impact area could be established with relocation assistance provided to homeowners and renters to find new residences outside the noise impacted area. These could include assistance in finding new housing similar to a participant's current housing, moving costs or subsidizing rental costs for the first few months. The specific elements of how much is provided and what period of time would be determined during the development of the program subject to revision as the program evolved.

The purchase assurance programs could be established to insure that residents wishing to sell their home could receive fair market value from LAWA/FAA in the event they were unable to obtain the appraised value on the open market. This type of program would be voluntary and not involve the imposition of eminent domain authority. A revolving fund could be established to provide an ongoing repository of resources by redeveloping non-compatible uses to compatible uses, selling them, and putting the proceeds into the fund. This type of program could involve hundreds of millions of dollars if a significant number of residents participated. Residences that have commercial and industrial uses adjacent to them and are not readily a part of an established neighborhood could have the highest priority in receiving the funds to be the most effective.

The primary benefit to be derived from this type of measure is to reduce the number of incompatible housing units within the 65 CNEL contour area. The measure would not be directed towards reducing the source of noise from aircraft but rather removing those land uses that are impacted by that noise. It is conceivable that a significant portion of the housing units within the 65 CNEL contour area could be removed over an extended period of time as a result of a successful financial assistance program. Much of this potential recycling of land uses would probably transpire beyond the five-year timeframe established in the Part 150 Study guidelines. Precise quantification of the benefits to be achieved would be predicated on the scope of the program to be developed and the level of participation. However, it should be recognized that many of the homes in the 65 CNEL are part of established neighborhoods and therefore might not lend themselves to such a program. These units would more appropriately be addressed within the context of the insulation program outlined in measure #2 of the NCP.

23) Noise Abatement Officer: Continue the position of a full-time noise abatement officer as part of the Van Nuys Airport Manager's Office who, working with the Airport Security, can continually monitor jet aircraft departures, report them to the Airport Manager and the community in terms of amount of noise generated on departure. The officer shall be responsible for operation of the permanent monitoring system, serve as a community liaison regarding noise issues, coordinating with aircraft pilots and collection and response to noise complaints.

Develop a program to improve formal lines of communication between the FAA, the airport, and aircraft operators on noise abatement procedures. Within the context of general guidance to the noise abatement officer in communication with aircraft operators, the VNY noise complaint system should be improved to provide greater feedback to operators, and link complaints to actual noise reduction measures. The function of the noise complaint system should be expanded to effectuate reductions in noise and not merely be used for public relations purposes.

Analysis**:** The purpose of this measure is twofold. The first is to establish full assurance that a noise abatement officer will continue to be a permanent position within VNY administration. The second is to provide overall guidance as to the primary functions of the position. As indicated the noise abatement officer is a permanent position at VNY, which receives support from LAWA's Environmental Management Division in discharging the responsibilities that are suggested in the proposed measure. In addition, this measure calls for the continuation of the position of noise abatement officer, as part of the Van Nuys Airport Managers Office. It is envisioned that the Noise Abatement Officer would work closely with the Airport Security, to continually monitor jet aircraft departures and report them to the Airport Manager and the Community in terms of amount of noise generated.

This measure also calls for the establishment of a framework for development of a program to improve formal lines of communication between the FAA, the Airport, and aircraft operators on noise abatement procedures. In addition to monitoring aircraft noise events, the Noise

Abatement Officer will have primary responsibility to coordinate with aircraft pilots and citizens and providing written and verbal responses to noise complaints. Although it is appropriate for the Noise Abatement Officer to take the lead in the coordination and implementation of the NCP it should be recognized that this effort will require numerous individuals in the VNY Administration, the Environmental Management Division, as well as other LAWA Divisions, to effectively implement the intent of the measure.

Reference should be made to the comments in preceding measures with respect to improving the complaint/feedback system. In particular, the intent of the measures dealing with improved feedback to pilots and the community and broader communication among all parties is addressed within the objectives of this measure, which provides a specific means, via the Noise Abatement Officer, to carry out these objectives. Quantification of noise reduction efforts would be related to the success of each of these other active measures, and direct involvement of the Noise Abatement Officer should enhance this level of success. . It should be recognized that there are limitations with respect to establishing a link between the complaints and noise reduction measures.

It would probably be unrealistic to expect each individual complaint to be presented in such a way as to lend itself to be directly related to one particular measure. Many complaints may simply state that an aircraft was too noisy during departure. Determining which measure is the most applicable in resolving the noise impact in these types of complaints would generally be problematical. However, with other complaints there may be a more direct correlation established, such as a low flying helicopter. In these situations an aggregate number of similar complaints could be analyzed to evaluate the effectiveness of the related measure. Every effort should be pursued to make these correlations where it is practical and productive to do so.

24) Noise Abatement Information: Compile available information on noise abatement procedures from manufacturers, pilots, and noise offices at other general aviation airports to be made available to pilots operating at VNY.

Analysis**:** The intent of this measure is to establish an on-going effort to maintain the most up to date and effective information on noise abatement procedures that might be available from a variety of sources. This information should be made available to all pilots operating out of VNY and they should be encouraged to follow the applicable procedures whenever possible. The extent to which this measure will result in reductions in noise impacts will depend on the availability of new procedures and would be reflected in periodic evaluations as to their effectiveness.

25) Raising Burbank Glideslope: Continue coordinated research with the FAA to investigate the feasibility of raising the approach glideslope to Burbank to allow an increase in operating altitude for helicopter and fixed winged operations. If feasible, practical, and safe, this could raise air space over VNY by as much as 1,500 to 2,000 feet. LAWA shall request the FAA to

conduct a study resulting in increasing the glideslope angle for Burbank Airports' Runway 7ILS approach to the maximum practicable so that operational altitudes at VNY can be raised without conflict with Burbank Airport Traffic.

A 1,500 to 2,000 foot above ground level (AGL) minimum altitude would be required for helicopters. The Steering Committee recommends that this measure be forwarded to the VNY Helicopter Task Force as an item that they request to be considered. Pending the outcome of the evaluation by the Task Force this measure would be subject to possible further modification. Ongoing monitoring and implementation should be maintained.

Analysis**:** As indicated previously the Steering Committee adopted a number of helicopter related measures to be included in the NCP. Measure six of the NCP addresses the subject of helicopter operational altitudes. That measure proposes coordination with the FAA to investigate the feasibility of raising the approach glideslope to the Burbank Airport to allow an increase of approximately 300 feet altitude for helicopter operations in the vicinity of VNY. As suggested, any desired increase in helicopter altitudes within certain air space in the vicinity of VNY is directly contingent upon the approach glideslope used by Burbank Airport. If it is not feasible to increase this glideslope then proposed increases in VNY altitudes would become problematical.

Reference was made to a similar measure being approved in the Burbank Part 150 Study. In their approval statement the FAA indicated that the Air Traffic Controllers at Burbank currently assign higher altitudes to helicopters to the extent feasible considering weather conditions and traffic flow; this measure calls for further cooperation between FAA and the airport to study implementation of minimum operating altitudes; any final determination will be subject to FAA approval and implementation.

As indicated previously, LAWA has established a Helicopter Task Force to address various issues associated with helicopter operations at VNY and consider possible solutions. It seems appropriate to refer the measure to this group for further consideration. Some of the items to be addressed with respect to this measure would be the fact that current data is probably insufficient to enforce the proposal and that there are safety issues regarding air space. One of the questions to be considered would be where the altitude restrictions would be placed. All of these factors need to be addressed and resolved before precise measurements can be determined to represent reductions in noise impacts. Any increase in altitude will contribute to a lessening of the helicopter noise nuisance associated with helicopter operations around VNY.

26) Lease Policy: Recommend that it be a policy of the BOAC to add to any future new leaseholders a requirement that they only station (base) Stage 3 aircraft at Van Nuys Airport. New leaseholders being defined as Fixed Based Operators (FBO's) who are not currently on this airport but who wish to move onto the airport in the future. The requirement would only apply to based aircraft and not to itinerant aircraft. Based aircraft are defined as any aircraft which is parked, hangared, or tied down at VNY for more than 90 days.

Analysis**:** The objective of this measure is to address the number of Stage 2 aircraft that are based at and operate out of VNY. The intent of this measure corresponds with and supports the philosophy of the ordinance adopted by the BOAC and the Los Angeles City Council that established the non-addition rule for Stage 2 jets. That philosophy is to allow existing Stage 2 jets to continue to operate while no new Stage 2 jets are introduced to the fleet of based jets at VNY. The lease policy would only apply to new leaseholds and therefore not cause an undue burden on existing leaseholds.

By restricting the introduction of new Stage 2 aircraft the potential growth of noise impacts would be lessen. The limiting effect of the non-addition rule was incorporated into the forecast for jet operations by setting the growth of applicable aircraft to zero after the year 2002. This adjustment to the forecast kept the annual operations for Stage 2 jets for the years 2003 thru 2006 at the same level as they were in 2002. The reduction in those operations that otherwise would have occurred are reflected in smaller contours in the NEM for 2006. This lease policy measure supports the non-addition rule and therefore its contribution to noise impact reduction is reflected in the forecast adjustment.

27) Air Traffic Control Tower: Request the FAA to upgrade the VNY Air Traffic Control Tower from a level 3 tower to a level 4 tower. An upgrade to a level 4 control tower would result in more efficient and improved operational control and could provide for increased tower personnel on duty to support the recommendation that the tower be operated 24 hours a day.

Analysis**:** The intent of this measure is to enhance communication and oversight of VNY operations during the nighttime hours when incompatible uses are most sensitive to aircraft operations. The hours between 10:45 p.m. and 5:45 a.m. the next morning, when the FAA's air traffic control at VNY is currently closed, are critical to noise abatement efforts. The FAA does not have the responsibility to enforce LAWA policies or City of Los Angeles ordinances with respect to noise abatement. However, they would be in a much better position to convey these laws and policies if the tower was opened and the controllers were able to communicate directly with pilots that are arriving or departing the airport. This is particularly evident with itinerant operators who may not be familiar with noise abatement procedures at VNY.

As indicated previously the Van Nuys Noise Abatement and Curfew Regulation contains several provisions that are applicable to the hours the tower is currently closed. A curfew is in placed between the hours of 10:00 p.m. and 7:00 a.m. the following morning that prohibits departures of Stage 2 aircraft types. More precisely the prohibition applies to aircraft whose estimated takeoff noise levels, as set forth in the FAA's most recent version of Advisory Circular 36-3A, are greater than 74 dBA. Exemptions from the curfew are provided for military aircraft and aircraft engaged in law enforcement, or emergency operations including medical, fire or rescue.

Another provision of the Noise Abatement and Curfew Regulation pertains to repetitive aircraft operations, also referred to as touch and go operations. This provision states that no person shall engage in repetitive operations in any propeller powered aircraft between the hours of 10:00 p.m. and 7:00 a.m. of the following day from June 21 through September 15, and between the hours of 9:00 p.m. and 7:00 a.m. of the following day, from September 16 through June 20. Another applicable provision of the ordinance pertains to preferential runway use during the hours the tower is currently closed. This provision states that between the hours of 11:00 p.m. and 7:00 a.m. of the following day, weather and traffic permitting, all aircraft shall depart on Runway 16R and shall arrive on Runway 34L of Van Nuys Airport unless instructed otherwise by the Federal Aviation Administration Air Traffic Controller.

These provisions are all important in the pursuit of controlling noise during the most sensitive hours. Keeping the control tower opened during these critical hours will allow the tower personnel to communicate directly with pilots on an operating procedure that the pilot may otherwise not know about. More significantly, this communication can be delivered in real time to allow the pilot to respond during the operation and before a potential violation occurs. Not only does it help to prevent that particular violation but it provides a more meaningful reinforcement to the noise abatement procedure than would be achieved in correspondence after the event has occurred.

28) Aircraft "N" Numbers: Recommend to the FAA that larger "N" numbers be required on aircraft. Larger "N" numbers on aircraft, particularly on the bottom side of wings, would enhance a citizen's ability to identify an aircraft, thereby better enabling utilization of the noise complaint procedures.

Analysis**:** This measure would provide a certain ability to enable complainants to identify an aircraft that they believe is in violation of noise policies or regulations. The primary emphasis with regard to identifying errant aircraft will be the other systems that have been described including monitoring systems and the connections with the FAA's radar data. However, a measure to enlarge the N numbers on aircraft may provide some assistance to those individuals who wish to attempt to identify violating aircraft in this manner. To this extent the measure may contribute marginally to noise reduction.

The following seven measures (#29 thru 35) will require a Part 161 Study:

Note: Each of the seven measures should lend themselves to quantitative and measurable reductions in the NEM, with the possible exception for the cap on helicopters, which involves more a noise nuisance factor than noise energy levels sufficient to affect the contour. However, it would be premature to attempt to estimate these reductions prior to completion of the Part 161 Study when all assumptions and conclusions can be fully developed and considered. Therefore, quantification of noise impact reductions that may occur as a result of implementation of these measures is not represented in this version of the NEM.

29) Incentives/Disincentives in Rental Rates: Subject to a Part 161 Study, a system of incentives and disincentives could be established to encourage greater use of quieter aircraft and less use of noisier aircraft. Subject to the findings and conclusions of the Part 161 Study, a program would be developed to have rental rates for leases and tie downs correlated to the level of noise generated by the aircraft to encourage quieter aircraft usage.

Analysis**:** The purpose of this measure would be to establish a financial disincentive of sufficient magnitude that it would discourage the use of nosier aircraft at VNY while encouraging the operation of quieter aircraft with incentives. Among the approaches that could be considered in pursuing such a measure would be to establish a correlation between rental rates for new leases for hangar space and tie downs with the level of noise generated by the aircraft utilizing these facilities. Such a system could set rental rates according to the FAA's Advisory Circular 36 decibel levels certified for each aircraft based at a particular leasehold at VNY.

There are a number of issues related to this measure that would have to be addressed thru a Part 161 Study. Primarily it needs to be determined whether such a program complies with the statutory conditions of the Airport Noise and Capacity Act of 1990 (ANCA) and can be made fair while still being effective. In correspondence, dated January 23, 2001, from the former President of the Board of Airport Commissioners (BOAC) on this subject, it was suggested that managing aircraft noise through the VNY leasing policy may be counterproductive, because such an approach would apply only to existing tenants and not provide a means for addressing itinerant operations. This disparity is one of the issues that would have to be addressed in a comprehensive Part 161 Study. However, if the question of possible discriminatory requirements imposed on based aircraft while not being imposed on itinerant aircraft can be resolved, then the measure may present potential for reducing noise impacts. As indicated, this is predicated on a determination that it would be both fair and effective.

The reason a Part 161 Study would be required is because the measure would establish a financial disincentive to certain aircraft or aircraft types from being based at VNY and therefore would constitute a noise and access restriction of those aircraft to the airport. The financial impact of such a restriction would have to be compared to any benefits derived by

noise impact reductions according to the requirements of the Part 161 regulations. A Part 161 analysis would be necessary to determine whether the aircraft or aircraft types identified as applicable in such a measure contribute to the overall noise impact levels experienced at VNY and to what extent is their particular contribution. A comparison between the costs and the potential noise impact reduction (benefit) would have to be done to evaluate whether there was a quantifiable justification for imposing the restriction that can be demonstrated to outweigh any negative aspects of the measure.

In order to conduct an analysis of the proposed measure specific factors would have to be established or assumed to provide for alternative approaches to possible implementation of the measure. One alternative could be to create an initial baseline rental rate predicated on the concept of a neutral revenue stream. In this situation an aircraft type that represents the median of noise levels of the existing or projected fleet mix at VNY would be identified using the certified departure noise levels contained in the FAA's Advisory Circular 36 decibel levels. An example would be to establish a standard market rental rate for aircraft that generate a takeoff noise level of 80 dBA, (this dBA level is only used for illustration). A 10% penalty could be imposed for aircraft at 85 dBA and above, a 20% penalty for aircraft at 90 dBA and so forth. Conversely, those aircraft at 75 dBA could have their rents reduced by 10% from the standard rate, those with 70 dBA could have a 20% reduction and so on. This would create a balance of both incentives and disincentives to achieve noise reduction.

An alternative would be to apply the market rental rate to the quietist aircraft and then add incrementally increasing penalties to each noise level of aircraft above it. This would create a very regressive rental rate structure. Another alternative, which would probably be extremely difficult to administer, is to tie the rent penalties to nighttime operations. This would offer the advantage of targeting operations with the greatest impact while still allowing existing aircraft owners the ability to at least utilize their aircraft during the day without penalty. However, extensive resources would have to be committed to tracking the operations of each leaseholder by prescribed periods of time.

Certain limitations to the effectiveness of this measure should be recognized. As indicated previously the first limitation is that it would only apply to based aircraft. It would cause no disincentive to itinerate aircraft that fly in and out VNY which constitute a large portion of the operations. Secondly, depending on the level or severity of disincentives certain aircraft owners may simply absorb the added costs as a factor of doing business and thereby not contribute to any reduction in noise impacts.

The most probable negative effect of this measure would be to impose financial hardships on those aircraft owners that may have the least resources to adapt to the measure. The proposed measure would result in these businesses either replacing their aircraft with quieter ones, causing probable significant financial impacts, or moving their operations off the airport causing negative impacts on the local economy. The probable financial impacts are illustrated in the Table #5 of this report. Although the specific cost figures represented in that table have no doubt changed since the time that information was generated it nonetheless provides a

relative magnitude of the potential impact involved with efforts to force the replacement of aircraft.

It could be argued that any businesses leaving the airport would most likely be replaced by another business that would comply with noise reduction objectives and reestablish the lost contribution to the local economy. However, that does not address the problem of the hardship imposed on the business forced to leave a location where it may have been an integral part of the community for many years. These are some of the primary issues that would have to be resolved by comparing them to a quantification of the actual benefits to be realized in the form of net noise reductions.

30) Incentives/Disincentives in Landing Fees: Subject to a Part 161 Study, a program would be developed to establish differential landing fees with higher fees for noisier aircraft and lower fees for quieter aircraft.

Analysis**:** As with the preceding measure the purpose of this measure would be to establish financial disincentives of sufficient magnitude that it would discourage the use of nosier aircraft at VNY while encouraging the operation of quieter aircraft with incentives. Differential landing fees could be established with higher fees for the noisier aircraft and lower fees for quieter aircraft. The noise related landing fees should be based on the single event noise levels for each aircraft as listed in the most recent version of the FAA's Advisory Circular 36 to avoid discrimination.

This measure would be subject to similar considerations as the preceding measure on rent adjustments and would require a Part 161 analysis. This type of analysis would follow the same procedure as outlined above with a comparison between the costs to be imposed and the potential benefits to be derived to determine whether imposition of the measure would be justified. The approach of differential landing fees, as with the preceding one, is predicated on the concept that an airport operator and the surrounding community incurs a noise cost from the operations of noisier aircraft and therefore it is appropriate to apportion the fees to address these noise costs. However, the proposed measure of differential landing fees does have several advantages that would have the potential to be relatively more equitable as opposed to the establishment of tiered rental rates.

The first advantage is that it would apply to all aircraft operating at the airport, including itinerate and not just those that were based there. Not only would this result in greater potential for noise reduction than only targeting the rent for based aircraft, but it would also provide a higher relative potential for generating revenue. The second advantage is that this type of measure has inherent flexibility that the rent restrictions would not. An aircraft owner would have a potential opportunity to adjust his operations to reduce the number of landings, thereby reducing the overall financial impact of tiered landing fees (with a commensurate reduction in business revenues) without having to replace aircraft or move out of the airport. To what extent each tenant would be able to make such adjustments is problematical. Once

again, there would be a problem of financial hardship on those operators that have the least resources to adjust to differential landing fees.

Several factors should be recognized with respect to differential landing fees. The concept has been attempted at various commercial airports in the United States and Europe. Legal challenges have curtailed implementation of the concept in this country but it has been successfully pursued at certain European airports. Currently, only a limited number of aircraft operations are subject to any type of landing fee at VNY. These primarily include business jets, which include air taxis and charter flights. Therefore, in addition to establishing a tiered range of landing fees the measure would have to be extended to apply to most of the aircraft at VNY that have never been charged any type of landing fees.

There are a couple of alternative approaches to how this measure could be pursued. Similar to the measure on tiered rental rates, one alternative could be to create an initial baseline landing fee predicated on the concept of a neutral revenue stream. In this situation an aircraft type that represents the median of noise levels of the existing or projected fleet mix at VNY would be identified using the certified departure noise levels contained in the FAA's Advisory Circular 36 decibel levels. An example would be to establish a standard landing fee for aircraft that generate a takeoff noise level of 80 dBA, (this dBA level is only used for illustration). A 10% penalty could be imposed for aircraft at 85 dBA and above, a 20% penalty for aircraft at 90 dBA and so forth. Conversely, those aircraft at 75 dBA could have their landing fees reduced by 10% from the standard fee, those with 70 dBA could have a 20% reduction and so on. This would create a balance of both incentives and disincentives to achieve noise reduction.

Another alternative would be to apply the existing landing fee to the quietist aircraft and then add incrementally increasing penalties to each noise level of aircraft above it. This would create a regressive fee structure. As with the rental rate, the landing fee penalty could be tied to nighttime operations. This would offer the advantage of targeting operations with the greatest impact while still allowing existing aircraft owners the ability to at least utilize their aircraft during the day without penalty. However, extensive resources would have to be committed to tracking the operations of each leaseholder by prescribed periods of time making it difficult to administer. Each of these alternatives and others can be considered in a comprehensive Part 161 Study.

31) Expansion of Fines: Subject to a Part 161 Study, a system of fines would be developed to be imposed on aircraft operators who violate policies at VNY. Increased fines would have a deterrent effect on aircraft operators who violate existing ordinances at VNY. The existing voluntary Fly Friendly program would be made a mandatory program with penalties for noncompliance. After two violations, operators who violate the "Fly Neighborly" program would be fined $500 for the third noisy operation. The fourth citation fine would be $1,000, and the fifth, $2,000. Any operator who receives a sixth citation letter would be banned from using the airport.

Analysis**:** The purpose of this measure is strengthen the Fly Neighborly Program, which is currently a voluntary program, by making it mandatory thru ordinance. In order to impose the suggested fines in this measure it would be necessary to incorporate the provisions of the Fly Neighborly Program into the existing VNY noise ordinance or to create a new ordinance. In either case it would require a Part 161 Study before such action could be contemplated. The issue of permanently banning an aircraft from using the airport may go beyond the purview of a Part 161 Study and question whether an airport operator has the legal right to prevent an aircraft from landing at an airport.

As a voluntary effort the Fly Neighborly Program has been successful with the majority of aircraft operators complying with their target departure noise levels. The small percentage of operators who remain out of compliance could arguably be reduced with the imposition of the suggested fines. Currently pilots are asked to voluntarily comply with prescribed noise levels that have been tailored to actual operating conditions of their particular class of aircraft. If they exceed the prescribed noise levels the owner and/or operator is sent a letter reminding them of the program and asking them to make every attempt to comply. This measure would convert the voluntary program to a mandatory one by imposing fines for every exceedance of the prescribed noise level

There is a precedent for such a fine system with the existing Van Nuys Noise Abatement and Curfew Regulation. The fines for violation of this regulation are set at flat rates of $750 for the first violation, $1,500 for the second violation within one year of the first one, and $3,500 for the third violation within three years of the first one. These fines are actually higher than the ones in the proposed measure for violation of the currently volunteer Fly Neighborly Program. With respect to the cost of maintaining and operating an aircraft this penalty structure has a greater proportionate cost impact on those with lower operating costs than on those with higher costs.

For example, using the fine structure suggested in the proposed measure, an aircraft that has an average trip cost of $5,000 would be penalized 10% of its trip costs for the first violation, 20% for the second violation, and 40% for the third violation. However, for an aircraft that has an average trip cost of $10,000 the proportionate penalty is half of the preceding example, with the first violation only representing 5% of the trip costs, the second violation 10% and the third violation 20% of the overall trip costs.

As a possibly more equitable alternative the penalty structure could be changed from a flat rate to a percentage of the average trip costs. In this approach the more costly aircraft, which generally might be expected to be a larger and noisier aircraft, would have a deterrent proportionate to the lower cost aircraft. Using the example given the more expensive aircraft (with the trip cost of $10,000) would have the penalty for the third violation increase from $2,000 to $4,000, establishing a more effective deterrent. In order to implement such a proposal it would be necessary to determine the operating costs of each flight, which could be considered overly intrusive and difficult to administer. Another alternative approach could be to apply the penalty on the basis of a percentage of the appraised value of aircraft in violation.

32) Maximum Daytime Noise Limits: Subject to a Part 161 Study, maximum daytime noise limits for aircraft operating at the airport could be established. Subject to findings and conclusions of the Part 161 Study, an ordinance would be developed to establish a daytime maximum noise limit of 77 dBA for aircraft operating at the airport.

Analysis**:** The purpose of this measure is to reduce noise impacts by prohibiting the operation of aircraft at VNY that are demonstrably above a prescribed noise level. When this measure was originally proposed the 77 dBA limit was established as a demarcation between Stage 2 and Stage 3 aircraft as related to the actual fleet of aircraft operating at VNY at that time. The intent was clearly to apply only to Stage 2 aircraft. Therefore, all aircraft under the 77 dBA limit should, by definition, be Stage 3.

To the extent that new Stage 3 aircraft now flying at VNY are now above the 77 dBA limit the application of this measure to Stage 3 aircraft would require a Part 161 analysis following the procedures outlined previously. Although it has been indicated that a Part 161 analysis would not be required for Stage 2 aircraft the provisions of ANCA and the FAR Part 161 Regulations do specify the procedures that LAWA must follow, and the analyses LAWA must perform, in order to implement this noise and access restriction. It would therefore be prudent to include this in the overall context of a comprehensive evaluation on the merits of each proposal to provide a better understanding of the financial ramifications. One of the issues that would need to be resolved in the evaluation of a Part 161 analysis is clarification as to why the measure would only establish a daytime limit as opposed to all non-curfew hours. The application of the noise limit to different periods of time or hours of the day may be alternatives considered in a Part 161 Study.

This measure may be one of the most onerous proposals in the NCP in terms of the cost impact imposed on the existing aircraft operators at VNY. If implemented, a large percentage of the based aircraft would no longer be allowed to operate at VNY. This would cause a significant economic hardship on the effected operators since it would be applied during daytime operating hours. With respect to benefits it would probably provide an equally significant reduction in the size of the noise contour and area impacted by aircraft noise. As indicated, to address the level of hardship, alternative time periods should be considered to strike a balance between the benefits and costs.

33) Limit on Stage 3 Jets: Subject to a Part 161 Study, a cap on the number of Stage 3 jets that may be based at VNY would be established.

Analysis**:** The purpose of this measure is to reduce noise impacts by limiting the number of Stage 3 aircraft that can operate at VNY. It has been suggested that without a cap on the growth of Stage 3 jets, there will be an increase in the noise contour around VNY, which could overshadow all other noise control measures. This assertion would need to be verified by quantitative analysis. On the surface, however, it does not appear to be an accurate reflection of the expected growth of Stage 3 aircraft or the real dynamics of noise impacts.

More relevant, however, is the fact that federal law most likely prohibits airport proprietors and local and state agencies from imposing constraints on levels of airport use, particularly those prohibitions or constraints associated with Stage 3 aircraft. Notwithstanding this potential limitation it may be useful to elaborate on the other realistic constraints associated with pursuing this measure.

In general, a noise contour is not driven by the number of operations of each type of aircraft as much as it is by the loudest aircraft. In other words the noise generated by multiple operations of quiet aircraft can easily be subsumed by one operation of a loud aircraft. By definition Stage 3 aircraft are the quietist aircraft, although there are a range of noise profiles within the broad category of aircraft certified as Stage 3. To impose a cap on all Stage 3 operations without first targeting specific aircraft types and quantifying the level of benefits would be shortsighted.

In previous modeling exercises Stage 2 operations were replaced with Stage 3 aircraft, keeping the same level of operations. The result was to virtually eliminate impacted land uses within the noise contour. It would probably take a substantial increase in the number of Stage 3 operations to make a measurable difference in the contour size or number of impacted uses. The actual contours and level of impact areas would have to be demonstrated thru a series of scenarios that represent increased levels of operations as well as a variety of fleet mixes. From the results of these scenarios an appropriate limitation could be identified if it was determined that a cap on Stage 3 operations appeared to be warranted and was permissible under federal law. This whole process would be best achieved thru a Part 161 analysis.

34) Expansion of Curfew: Subject to a Part 161 Study, the curfew provisions currently contained in the Van Nuys Noise Abatement and Curfew Regulation could be expanded.

A) The existing 10:00 p.m. to 7:00 a.m. curfew would be expanded to include all non-emergency jets.
B) The existing 10:00 p.m. to 7:00 a.m. curfew on all non-emergency jets would be expanded to include non-emergency helicopter operations. This measure would be subject to further evaluation within the context of the Part 161 Study.

Analysis**:** The purpose of this measure would to expand the existing curfew to reduce noise impacts. A nighttime curfew has been in effect at VNY for over 20 years. The hours of the curfew were recently extended from the original hours of 11 PM to 7 AM to 10 PM to 7 AM. All non-emergency aircraft that have a departure noise level above 74 dBA are prohibited from taking off during the curfew hours. This measure would extend the curfew to all jet operations, including the quietest ones, at 74 dBA and below. This would impose an economic burden on those operators that need to depart the airport during the proposed hours without necessarily providing a demonstrable benefit to warrant the imposition.

Reference is made to the analysis offered in response to measure #33 which appear to be analogous to this measure. The difference is that this specific measure would apply to

nighttime operations that are weighted by a penalty factor of 10 dBA in recognition of the higher sensitivity of noise during that time. Nonetheless, in general, a noise contour is not driven by the number of operations of each type of aircraft as much as it is by the loudest aircraft. In other words the noise generated by multiple operations of quiet aircraft can easily be subsumed by one operation of a loud aircraft.

It would probably take a substantial number of aircraft operations that are below 74 dBA to make a measurable difference in the contour size or number of impacted uses. The actual contours and level of impact areas would have to be demonstrated thru a comparison of scenarios that represent operations with and without aircraft under 74 dBA. From the results of this evaluation an initial determination could be made as to whether the proposed curfew on the quieter aircraft appeared to be warranted. This whole process would be best achieved thru a Part 161 analysis.

With respect to the helicopter curfew clarification would need to be made on whether traffic reporting helicopters would be considered emergency but presumably they would not. Since most of these are in the air before 6am this proposed measure may cause an undue hardship. The result would either be to not provide this essential public service during the morning rush hour or the operator would be forced to move its operations to another airport if one is available. The financial ramifications of this factor, as well as preventing other helicopter operators from being allowed to conduct business during the proposed curfew hours, would have to be fully evaluated and compared with whatever benefits might be derived before any action could be taken on this proposed measure.

LAWA has established a Helicopter Task Force to address various issues associated with helicopter operations at VNY and consider possible solutions. It would seem appropriate to refer this measure to this group for further consideration within the context of a variety of approaches to resolving helicopter noise problems. Pending the outcome of the investigation into the feasibility and desirability of the measure by the Task Force the measure would be subject to possible incorporation into the Part 150 Study.

35) Cap/Phase Out of Helicopters: Subject to a Part 161 Study, a cap or phase-out the current fleet of helicopters would be investigated. The measure would also be forwarded to the Helicopter Task Force, as an item that should be considered. Pending the outcome of the investigation into the feasibility and desirability of the measure by the Task Force, the proposed measure would be subject to further evaluation within the context of the Part 150 Study.

Analysis**:** The objective of this measure is to evaluate whether to place a limit on the number of helicopters that can operate at VNY or consider phasing out all helicopter operations. The intent is to reduce the noise impact associated with those operations. As has been reflected thruout this study, helicopter related noise does not necessarily contribute enough sound energy to substantially effect a CNEL noise contour. Rather the noise impact emanating from helicopters is more of a nuisance factor. The evaluation of placing a cap on the number of helicopters that operate at VNY, or even eliminating them all together, should be compared to

other measures that have been proposed, such as raising operational altitudes or adjusting tracks, to determine whether other steps can be taken that are less draconian to achieve desirable reductions in noise impacts.

The latter possibility of eliminating helicopter operations would probably cause a significant economic hardship on the numerous companies and individuals that currently conduct helicopter operations. This would also cause hardships on those many entities and individuals that rely directly or indirectly on the services provided by those helicopter operations. The FAA indicated that capping or phasing out of the current fleet of helicopters constitutes an airport noise and access restriction. Consideration of airport noise and access restrictions in the Part 150 Study is appropriate pursuant to Part 150 Section B150.7 (b)(5). Implementation of any new or revised, more stringent, noise and access restrictions that are applicable to operations of Stage 2 and 3 aircraft will be subject to the requirements of ANCA and FAR Part 161. The cost factors related to this measure would need to be analyzed and compared to the benefits within the context of a Part 161 Study.

In addition to being the subject of a Part 161 Study this measure should also be forwarded to the Helicopter Task Force, as one of the items that they should consider. The measure would only be included in the Part 150 Study with the acknowledgement that it be one of the items to be analyzed in a comprehensive Part 161 Study. A determination on whether to further pursue this type of measure would be predicated on the findings of the Part 161 Study. Based on those findings, and pending the outcome of the investigation into the feasibility and desirability of the measure by the Helicopter Task Force, the measure could then be subject to further evaluation within the context of the Part 150 Study.

Alternative Measures Not Adopted

The following five measures were considered by the Steering Committee on May 29th and July 16th of 2001 and were not adopted. Reference should be made to the Steering Committee minutes for these meetings in the Background Appendix to obtain the comments made by the public and members of the Committee. Along with the alternative scenarios considered by the Steering Committee in 1992, the discussion of why these measures were rejected complies with the requirement for analysis of alternative measures as specified under Part 150 Section 150.23(e)(2).

--A proposal that suggested the Part 150 noise contour should be expanded to include the 60 and 55 CNEL contours was not adopted for the following reasons:

Analysis**:** The suggestion made by the supporter of this proposed measure was that the current noise model's reliance on the 65 CNEL is inadequate and does not reflect the potential growth and affected areas that are greatly impacted outside the 65 CNEL. However, the primary purpose of a Part 150 Study is to address impacts within the 65 CNEL. There are no statutory provisions for an airport operator to go beyond the 65 CNEL within the context of a Part 150 Study. This is not to say that there may be impacts in the areas beyond this limitation, albeit relatively diminished. But it is simply not the primary purpose of a Part 150 Study to address those potential impacts. These impacts become land use issues that are most appropriately resolved through local land use planning and controls.

In a related situation the Naples Airport Authority in Florida recently attempted to establish a ban on Stage 2 operations to minimize residential land use impacts within the 60 dB DNL (DNL or day night level is a common noise metric used in most parts of the country and is the metric cited in the Part 150 guidelines; in California the CNEL noise metric, which is more restrictive than the DNL, is an acceptable substitute). The FAA has indicated that it supports planning and other actions taken by local governments to establish noise buffer areas beyond the 65 dB DNL. However, in response to the Naples Authority the FAA stated that "No restriction on access to a federally obligated airport has ever been based on residential impacts below the significant exposure level of 65 dB DNL." The 65 dB CNEL is the federal threshold for compatible residential use.

The approval statements given by the FAA for the Chico Part 150 provisions dealing with contours beyond the 65 dB CNEL consistently indicated that the actions were within the authority of the local government and were intended to prevent the introduction of new incompatible land uses. They reflected actions that had been taken by the City, or were contemplated to be taken by the City, in order to address their local land use concerns.

In the Part 150 for Kansas City International Airport the FAA approved in concept a land use planning measure for airport environs in the 60 dB DNL. In that approval they indicated that this was a local prerogative for purposes of long range preventative land use planning. They further stated that the land use compatibility planning scenario map had not been accepted by

the FAA as an official Noise Exposure Map (NEM) meeting Part 150 official map requirements. It was presented in the NCP as the airport operator's representation as a possible worst case noise environment for preventive planning purposes to reduce the likelihood of future non-compatible development.

Consideration of local land use planning measures is within the purview of the City of Los Angeles Planning Department, Planning Commission and City Council. It would be inappropriate to dictate to the City Planning Department and Planning Commission that a buffer zone or other land use designation be established within the 55 or 60dB CNEL without the City first having the opportunity to determine whether it is feasible and/or desirable. The City Council may wish to investigate the feasibility of creating special zones to protect impacted uses within these areas. If the City Council did decide to designate such zones or land use controls then these designations could be incorporated into the Part 150 Study as representing actions to be taken by the local jurisdiction.

--A proposal that suggested the NCP should establish "Noise Sensitive Areas" was not adopted for the following reasons:

Analysis**:** Reference was made to the Chico Part 150, which includes the definition of noise sensitive areas. The Chico Part 150 states, within the context of a measure for signs, that informational signs will be developed and posted at the end of runways advising pilots to avoid noise sensitive areas. The example given was: Residential area immediately southeast of the Airport is noise sensitive; Observe published noise abatement procedures. In the approval statement for Chico's Part 150 Study the FAA admonished that such signs must not be construed as mandatory air traffic procedures. The FAA also stated that the content and location of airfield signs are subject to a separate approval process by FAA officials outside of the Part 150 process and would not be approved in advance by the Part 150 action.

Lacking any more precise definition as to what constitutes noise sensitive areas it is presumed that the intent is to be analogous to non-compatible uses, which include residential, churches, schools and hospitals. In action taken by the VNY Part 150 Steering Committee at its November 8, 2000 meeting the Committee adopted 26 measures to be included in the NCP. Subsequent actions by the Steering Committee and the Board of Airport Commissioners in July and August of 2001 confirmed final adoption of these measures into the NCP. Measure #14 of the NCP addresses signage by directing the placement of signs on runways advising pilots to fly quietly and engage in noise abatement procedures. The intent of the Fly Neighborly Programs, as embodied in NCP measures #12 and 13 and other measures adopted into the NCP, is also to recognize noise sensitive areas or non-compatible uses and to practice noise abatement procedures to minimize noise impacts. Therefore, the Steering Committee voted to not adopt this measure because the intent was fully represented in other measures.

--A proposed measure that would have equalized departure routes was not adopted in the NCP for the following reasons:

Analysis**:** This proposed measure is antithetical to noise mitigation because it might have actually caused a detrimental impact on noise mitigation by simply shifting the noise from one area to another. The presumed intent is to attempt to have everyone receive an equal share of noise impacts - no more and no less than anyone else. However, this type of measure is really contrary to the minimization of noise impacts and ironically to the concept suggested in the preceding proposed measure on noise sensitive areas.

The approach of equalizing departure routes does not discriminate between effected land uses and essentially spreads all operational activities evenly over a geographic area without regard to the land uses impacted below. The proposed measure that would have established noise sensitive areas recognizes that certain areas have more noise sensitive land uses than others do and should therefore be avoided. It also infers that operations should be concentrated over the least sensitive land use areas. Therefore, the proposed measure was not adopted because of the recognition that aircraft operations should be directed to the least sensitive land uses and not be spread out.

--A proposed measure was not adopted to establish an Airport Influence Area. This area would have encompassed those communities where noise complaints have been recorded and include the area covered by the noise contours. Various specific land use measures within this area would have been implemented. The reasons that the proposed measure was not adopted are as follows:

Analysis**:** Reference should be made to comments on the preceding proposed measures that were not adopted with regard to land use issues. The specific land use measures to be pursued within the context of this measure were not delineated. However, as indicated in previous comments it is the prerogative of the City Planning Department, the City Planning Commission and the City Council to define appropriate land uses. If they were to pursue such a concept they would probably want to define a relationship between the type of complaints, the concentration of complaints, and the location with regard to what type of land use measures would be appropriate.

In general it would seem that the stringency level of whatever controls is contemplated would be relatively proportionate to the number and location of complaints. In other words the severity of any potential controls would become less warranted or justified as the concentration of complaints diminished and the further they were from the airport. However, this is a determination that would have to be made by the City Planning Department and Planning Commission if they decided to pursue such a proposal, and that is the reason it was not adopted within the NCP.

--A proposed measure would have ratified Resolution 13369 passed by the Board of Airport Commissioners on October 2, 1982. This resolution restated a definition, originally established in April 1969. The proposed measure would have interpreted those resolutions as enforcement of a 12,500 lb. weight limit on air taxis and charters. The proposed measure was not adopted for the following reasons:

Analysis**:** The primary intent of the Board of Airport Commissioners (BOAC) in adopting the referenced resolution was to prevent the establishment of scheduled commercial operations and to provide for the operation of unscheduled air taxi operations at VNY. At the time the resolutions were originally adopted aircraft used for unscheduled air taxi operations were normally below 12,500 pounds in weight. The 12,500-pound designation was intended as a definitional characteristic of this type of aircraft. It was not intended to establish a weight limit for air taxis, simply to define what was considered to be a typical physical characteristic of air taxis, at that time. Their weight was one of the factors used to distinguish them from the larger commercial aircraft that were unwanted then and are unwanted now.

Times change and the typical weight of aircraft that perform the same functions as the air taxis at that time are now heavier than 12,500 pounds. Scheduled commercial aircraft have become heavier as well. Nonetheless, the intent of the resolution(s) remains the same, which is scheduled commercial operations are to be prohibited and unscheduled air taxis, regardless of their current weight, are to be promoted at VNY. If any action was to be taken on the resolution it should have been to update the definition of air taxis by reflecting their current weight levels. The proposed measure was not adopted because it incorrectly interpreted the referenced resolutions as an operational weight limit on air taxis, which was not the intent of the BOAC or the Part 150 Steering Committee.

--Another proposal, earlier considered by the Technical Committee, that would have included preferential runway use as an alternative was not adopted for the following reasons:

Analysis: There are two runways at VNY. Runway 16R/34L is 8,000 feet in length and used by jet aircraft. The second runway, 16L/34R, is only 4,000 feet in length and therefore cannot be used by jet aircraft for normal operations. Because of this limitation it was not considered feasible to propose preferential runway use as a viable alternative.

RESOLUTION NO. 21489

WHEREAS, on recommendation of Management, there was presented for approval, the VNY Part 150 Noise Compatibility Study and Noise Exposure Maps, and adoption of the Report, dated July 19, 2001, attached to and made part hereof of this Resolution; and

WHEREAS, the purpose of the Study was to reduce airport-related noise impacts within the context of the Federal Aviation Administration's (FAA) Part 150 guidelines.

WHEREAS, this action, as a continuing administrative activity, is exempt from the requirements of the California Environmental Quality Act as provided by Article 111, Section 2.f of the Los Angeles City CEQA Guidelines; and

WHEREAS, actions taken on this item by the Board of Airport Commissioners will become final pursuant to the provisions of the Los Angeles City Charter Section 245;

NOW, THEREFORE, BE IT RESOLVED that the Board of Airport Commissioners determined that this action is exempt from CEQA requirements, adopted the Staff Report, dated July 19, 2001, which is attached to and made a part hereof of this Resolution, approved the Noise Exposure Maps, and authorized the Executive Director to forward the approved Noise Compatibility Program and Noise Exposure Maps of the VNY Part 150 Study to the Federal Aviation Administration for their review and approval.

I hereby certify that the above is
a true and correct copy of Resolution
No. 21489 adopted by the Board of
Airport Commissioners at a special
meeting held Thursday, July 19, 2001

Sandra J.Miller - Secretary
BOARD OF AIRPORT COMMISSIONERS

Sponsor's NCP Certification

The Noise Compatibility Program and accompanying documentation for the Van Nuys Airport (VNY), including the description of consultation and opportunity for public involvement, submitted in accordance with Federal Aviation Regulations Part 150, are hereby certified as true and complete to the best of my knowledge and belief. It is hereby certified that adequate opportunity has been afforded interested persons to submit their views, data, and comments on the Noise Compatibility Program and supporting data are fair and reasonable representations of existing conditions at the VNY airport.

9/6/06

Date of Signature

Jim Ritchie
Deputy Executive Director
Los Angeles World Airports