



AAAI Report 1590  
AAAI Project 88018

# QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT FIRST QUARTER 2021

MAY 2021

Prepared for:



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## QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT FIRST QUARTER 2021

### I. INTRODUCTION

In compliance with the California Noise Standards (Reference 1) and the current variance from certain provisions of the Standards (Reference 2), the operator of the Hollywood Burbank Airport is required to perform noise monitoring in the vicinity of the airport for the purpose of establishing a noise impact boundary. The Noise Standards currently specify a community noise equivalent level (CNEL) of 65 dB for the noise impact boundary<sup>1</sup>. The airport is required to provide, each quarter, an updated annual noise impact contour based on measurement data over the four preceding quarters.

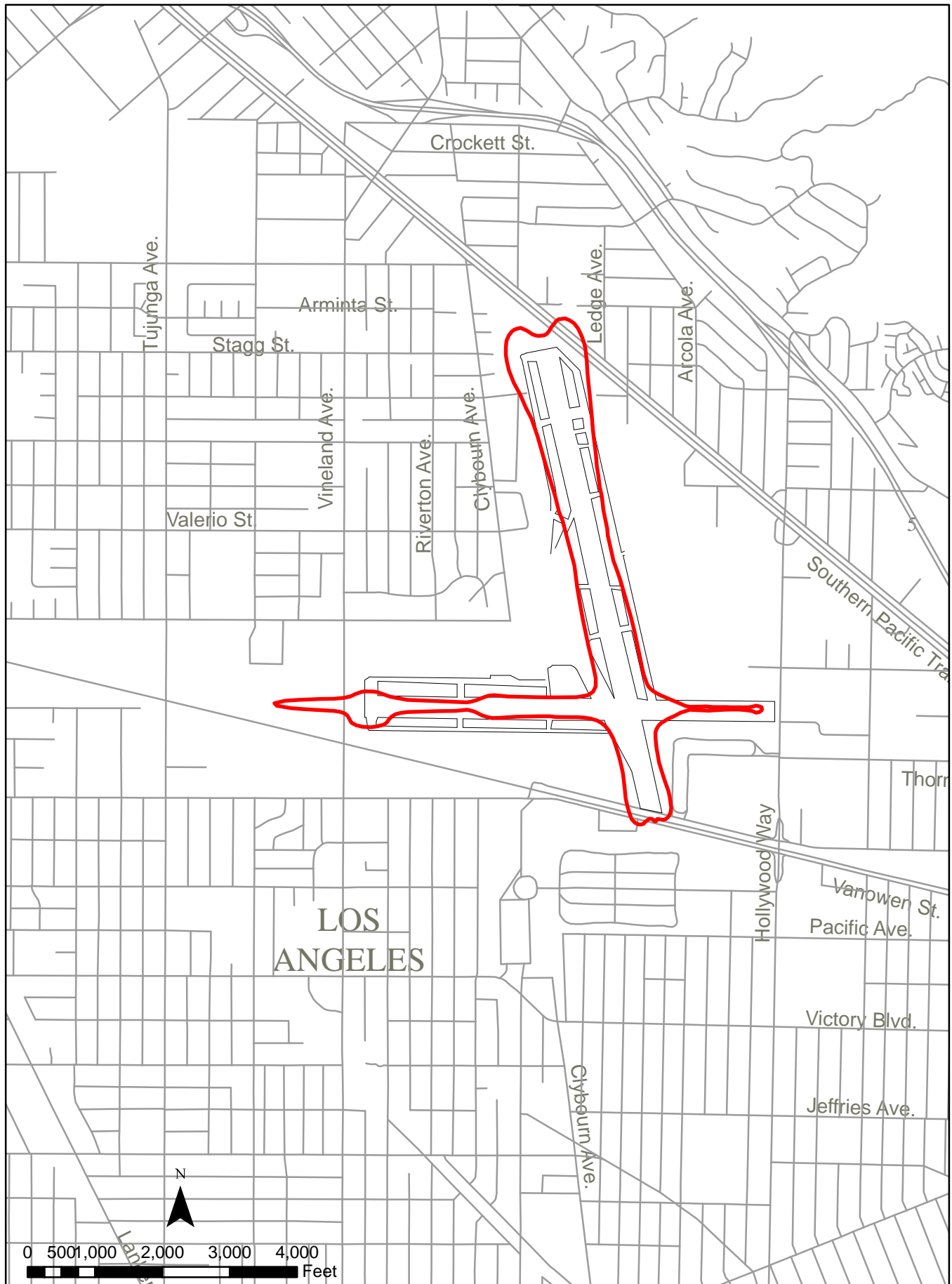
A permanent noise monitoring system became operational in April 1980 and, with brief interruption for system expansion, maintenance, and program changes, has been operational since that time. Of the original nine noise monitor sites, eight have remained unchanged since 1980. The monitor at site 8 was removed in 1997 and replaced by a monitor at site 18. Two sites were added east of the airport in late 1980. Four sites were added south of the airport in January 1986 in response to the requirement to determine the 65 dB contour. Three more locations were added in February 1997. Two of these, identified as 16 and 17, are south of the airport, and one, 18, is to the west. These locations were added to permit monitoring closer to the 65 dB contour. The noise monitoring computer at the airport was replaced in August 1995.

The Hollywood Burbank Airport Noise Monitoring System was modernized and augmented in late December 2012 by replacing the noise and flight track matching software, the noise monitoring hardware, and by adding sites 19, 20, 21, and 22 to allow closer monitoring to the current 65 dB CNEL contour. The old site 17 was removed as redundant with site 15, so the updated noise monitoring system contains 20 permanent microphone locations.

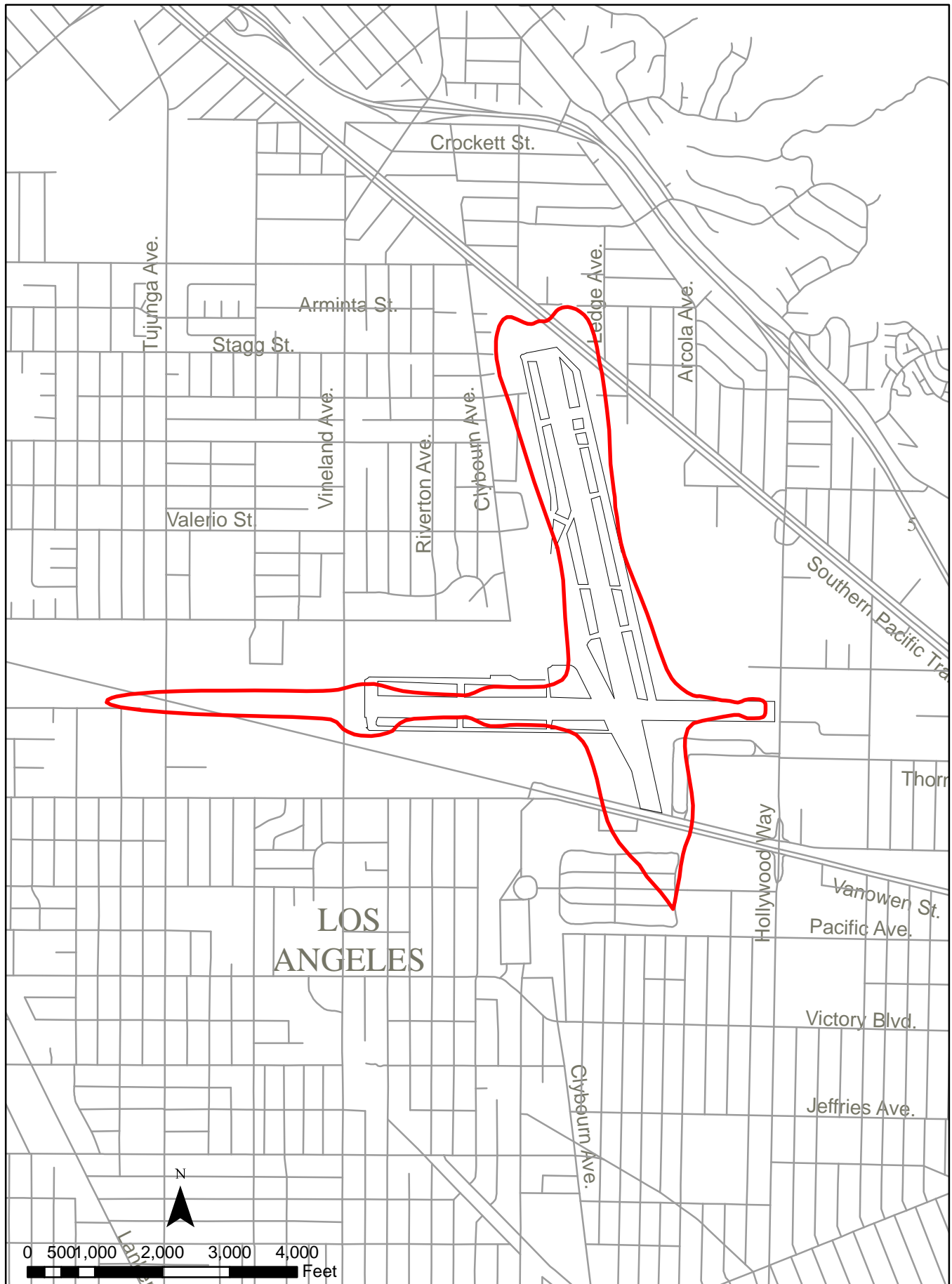
This report describes the data acquired by the monitoring system during the first quarter of 2021. Noise impact boundaries for 65 dB and 70 dB are shown based on these measurements and measurements obtained during the second, third, and fourth quarters of 2020 reported in References 3, 4 and 5. Figure 1 shows the 70 dB contour and Figure 2 shows the 65 dB contour, based on the measured noise data.

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<sup>1</sup> Prior to January 1, 1986, a CNEL of 70 dB defined the noise impact boundary.



BURBANK AIRPORT - 70 CNEL CONTOUR for 1st QUARTER 2021



BURBANK AIRPORT - 65 CNEL CONTOUR for 1st QUARTER 2021

## **II. NOISE MEASUREMENTS**

### **A. Sites**

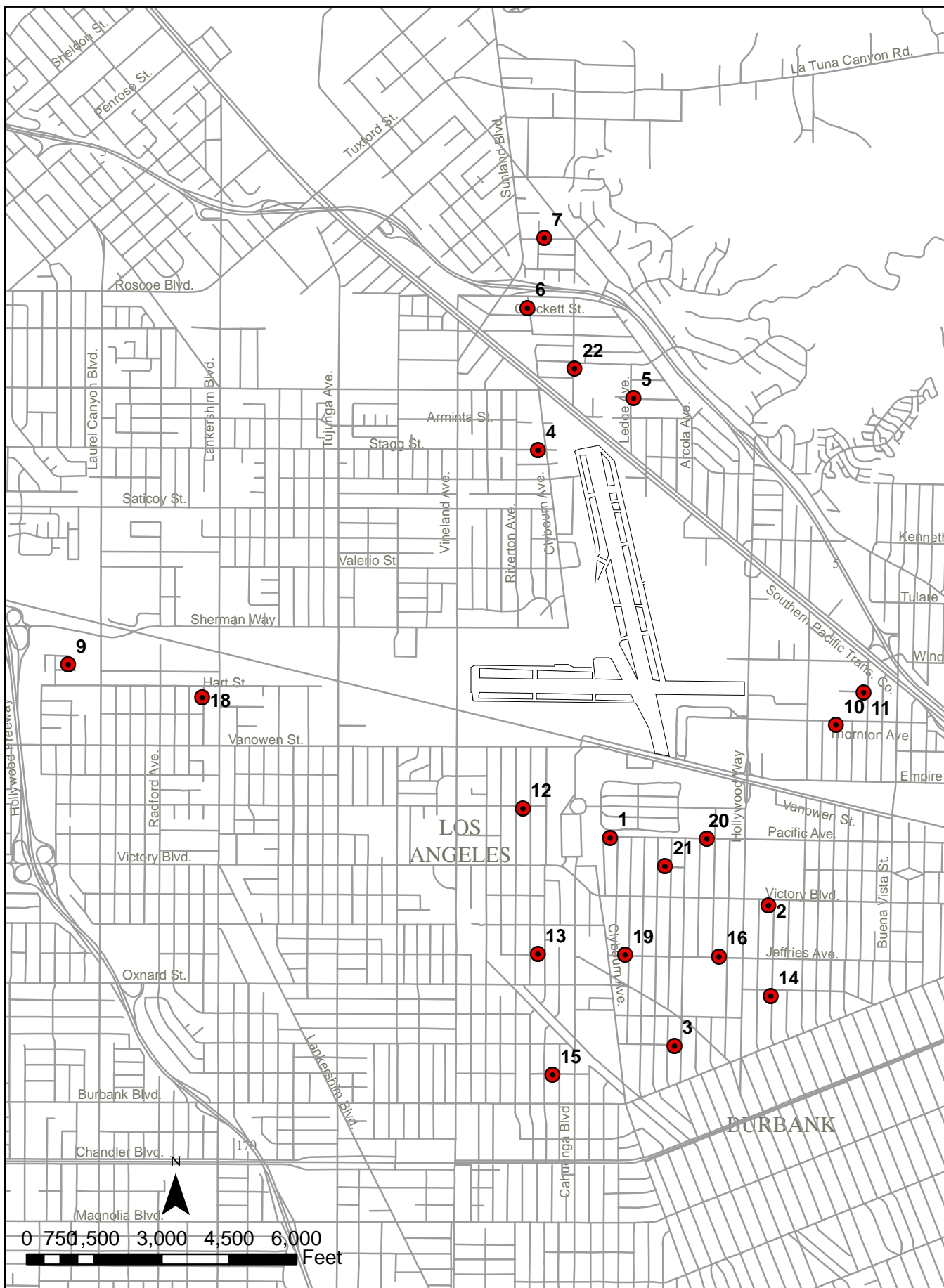
Aircraft noise levels were monitored at 15 locations prior to February, 1997. Two sites were added in February 1997, and equipment at one site west of the airport was moved to a new location. In July 2003, the monitor station at site 9 was moved 105 feet further west to accommodate new construction at the Fire Station. In December 2012, four new monitor sites were added and one existing site removed as redundant, leaving a total of twenty noise monitoring locations. The noise monitor sites are shown in Figure 3.

### **B. Noise Measurement Equipment**

Each of the microphone locations uses an identical set of equipment connected to a central control unit. The noise level at each site is stored locally and transmitted by broad band connection to the central site once per 24-hour period. The automated noise and flight track monitoring software processes the data to produce (among other measures) the CNEL at each site. Appendix A provides a brief description of the system.

### **C. Noise Data**

During this quarter, there were occasional power interruptions and monitor equipment failures, causing some loss of data. Tables 1, 2, and 3 show the aircraft CNEL measured at each monitoring site for each day of the quarter. The dashed lines indicate days for which a monitor was operating for less than 94% of the time. The data for these days was excluded from the averages.



BURBANK AIRPORT - NOISE MONITOR LOCATIONS



**D. Operational Data**

Operations of air carrier, general aviation and rotary-wing aircraft are determined from the Airport ANOMS computerized flight tracking system.

**III. MEASURED NOISE DATA**

Daily CNEL values for the noise monitoring system are listed in Tables 1, 2, and 3. Table 4 lists the average values for each quarter together with the annual average.

**IV. SCHEDULED AIRLINE AND AIR TAXI OPERATIONS**

The air carrier and commuter operations for the quarter are shown in Table 5.

**V. CNEL CONTOUR DEVELOPMENT**

The contours shown in Figures 1 and 2 are based upon computer-generated "master" contours which are adjusted to reflect the monitoring data. Beginning with the first quarter 2009, noise contours are developed using the master contours produced by Version 7.0 of the Integrated Noise Model (INM), a sophisticated aircraft noise modeling program developed for the Federal Aviation Administration. Inputs to the program consist of aircraft types and performance data, flight paths, numbers of operations, and day/evening/night distribution of flights. The program calculates CNEL values at equally spaced grid points and produces CNEL contour lines at 1 dB intervals. The annual average CNEL values at each site were marked at the appropriate locations on the contour map and the locations of the 65 and 70 dB CNEL contours were determined in the vicinity of each measuring point. These points were then joined following the general shape of the computed contours.

The master contours used in developing the contours for this quarter are based on operations for the 12-month period from January 1, 2019 through December 31, 2019. These replaced the previous master set of CNEL Contours which were based on operations for the 12-month period from January 1, 2014 through December 31, 2014.

TABLE 1. CNEL VALUES FOR JANUARY 2021

RMS NUMBER																					
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
01/01/21	53.2	49.7	51.9	57.1	52.9	54.3	50.6	54.6	45.0	42.2	48.9	48.5	49.1	50.0	53.7	53.1	53.1	56.4	57.5	56.5	
01/02/21	57.6	55.3	56.3	51.5	52.7	52.5	55.5	57.3	53.3	51.3	50.6	54.8	53.3	55.8	57.3	56.5	58.6	61.1	62.0	59.0	
01/03/21	59.2	56.3	57.3	50.0	52.0	51.1	54.7	59.5	50.1	48.7	55.4	54.5	54.1	56.7	58.6	58.7	59.3	62.1	63.1	60.4	
01/04/21	58.6	56.0	57.8	53.2	50.9	49.7	53.5	59.3	47.6	45.0	51.2	55.1	54.1	57.0	58.3	58.8	59.6	62.1	63.2	57.3	
01/05/21	59.1	57.1	58.8	56.9	53.1	51.4	51.8	59.7	50.3	58.3	52.1	56.2	56.9	56.4	62.3	58.8	59.4	63.2	63.9	50.2	
01/06/21	58.2	55.9	57.4	56.1	55.4	53.9	51.0	59.0	50.5	55.0	52.1	53.4	53.9	55.1	58.3	58.4	58.3	62.1	62.7	55.8	
01/07/21	58.8	58.5	59.6	58.4	60.5	53.3	51.3	58.1	53.7	57.8	52.8	53.6	56.3	56.3	61.4	57.0	60.2	64.6	65.0	53.8	
01/08/21	55.4	52.5	54.0	55.4	56.5	57.4	55.0	55.9	44.9	50.2	48.8	50.7	51.8	51.6	58.3	54.0	55.2	59.0	60.0	59.9	
01/09/21	54.8	51.5	51.3	55.5	56.1	57.6	56.9	53.5	45.3	49.6	45.3	50.6	48.8	50.8	53.2	53.6	53.8	57.4	57.7	61.1	
01/10/21	54.5	51.8	53.3	53.8	53.8	46.9	49.9	55.0	46.2	47.3	49.9	51.0	49.2	52.3	54.5	54.0	55.6	58.5	59.6	51.9	
01/11/21	55.1	53.5	55.2	54.1	54.3	50.9	51.0	55.0	45.5	47.2	48.3	51.0	52.3	53.2	55.7	53.8	55.8	59.5	60.3	56.6	
01/12/21	58.7	57.7	59.3	56.4	57.7	54.4	52.2	57.5	51.3	53.6	52.6	56.2	55.9	56.3	60.2	56.5	59.2	63.5	63.9	56.4	
01/13/21	55.7	54.2	55.1	54.7	55.5	55.4	56.1	58.5	49.9	48.5	49.4	51.4	52.2	53.3	56.3	57.5	56.5	60.0	60.4	61.0	
01/14/21	56.8	55.9	56.9	59.3	57.1	56.7	54.3	54.3	49.7	49.8	51.4	52.1	53.8	54.1	58.8	53.1	57.6	61.9	62.4	60.5	
01/15/21	55.7	53.3	54.3	53.9	54.2	55.9	53.4	56.5	46.1	48.4	48.6	49.9	51.0	51.8	55.6	55.2	55.9	59.4	60.4	58.1	
01/16/21	53.0	51.0	52.4	51.2	52.1	49.4	47.4	53.7	42.7	45.6	46.0	49.2	49.4	52.3	53.5	52.4	54.2	57.1	58.6	56.6	
01/17/21	53.4	50.7	51.8	55.2	51.0	47.7	49.3	55.3	47.4	46.8	46.9	49.8	48.2	50.9	52.7	54.6	54.0	57.0	58.0	53.3	
01/18/21	55.1	53.1	54.6	57.4	56.1	55.8	53.0	55.1	44.9	46.4	48.3	50.4	51.3	52.6	56.2	54.7	55.9	59.3	59.9	59.4	
01/19/21	58.6	58.2	59.1	57.9	57.5	59.6	55.8	60.4	47.7	49.6	51.6	52.1	56.7	53.9	60.2	59.2	56.9	63.1	63.0	60.8	
01/20/21	55.1	51.5	51.2	61.7	62.3	64.8	61.5	59.1	52.1	54.6	50.5	50.1	47.9	51.0	52.2	58.0	53.3	56.7	56.9	65.9	
01/21/21	59.9	59.5	59.9	55.0	54.9	54.8	56.6	59.3	52.2	53.0	53.7	54.5	57.5	55.4	61.3	58.8	59.9	64.4	64.9	61.2	
01/22/21	58.4	54.8	56.8	56.2	55.7	54.0	54.8	60.1	47.8	49.1	51.9	55.0	53.4	56.3	57.9	59.1	59.1	60.5	61.5	59.5	
01/23/21	55.8	53.5	54.3	48.7	46.7	46.7	49.2	56.6	49.3	46.4	48.2	52.9	50.9	53.9	55.2	56.1	57.0	59.0	59.8	55.4	
01/24/21	57.2	54.5	55.7	54.2	53.2	44.7	49.1	57.0	46.8	45.8	49.9	53.6	52.2	55.1	57.0	56.4	57.9	60.4	61.6	49.7	
01/25/21	52.5	46.9	49.4	59.3	60.4	62.3	60.7	53.7	48.1	50.3	47.8	42.9	49.1	40.0	58.0	53.8	50.1	55.9	55.9	64.7	
01/26/21	60.2	59.1	61.0	54.0	55.2	53.8	52.2	59.6	50.0	49.8	56.4	55.8	57.7	57.1	61.5	59.5	59.2	64.6	64.3	57.5	
01/27/21	58.2	54.7	55.9	56.6	55.1	53.5	54.1	60.6	46.1	47.6	51.5	54.5	52.9	55.2	56.8	59.9	58.4	60.4	61.4	59.7	
01/28/21	59.4	55.2	55.8	57.0	55.7	52.4	51.2	60.1	50.8	47.5	55.7	54.9	52.9	55.6	57.3	58.5	58.9	61.0	62.3	57.6	
01/29/21	58.3	55.5	56.3	54.0	52.1	50.9	49.5	56.9	50.1	47.3	51.3	55.1	53.5	56.2	57.5	56.6	59.3	61.0	62.1	53.1	
01/30/21	56.4	53.3	54.3	48.9	49.5	48.7	47.3	55.3	46.5	44.2	49.8	53.2	51.1	54.2	55.2	55.0	57.0	59.5	61.0	53.9	
01/31/21	55.5	54.7	56.8	45.9	52.7	40.9	45.5	53.4	46.2	44.2	47.4	50.5	54.0	53.3	59.8	52.6	56.3	61.9	62.2	44.2	
AVERAGE	57.2		56.5	55.9	55.8	55.8	54.4	57.7	49.2	51.0	51.3	53.1	53.5	54.4	58.1	56.9	57.5	61.1	61.7	59.0	
NO. DAYS	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	

TABLE 2. CNEL VALUES FOR FEBRUARY 2021

## RMS NUMBER

Date/Time	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
02/01/21	57.1	55.1	57.1	49.3	52.8	54.2	55.9	56.5	51.4	47.8	51.8	52.8	53.7	53.9	57.5	55.6	57.4	61.0	61.4	60.9
02/02/21	59.5	57.1	59.1	54.7	56.6	57.2	60.6	60.3	53.5	56.8	55.0	54.5	55.5	56.6	59.9	60.8	58.9	63.2	63.6	62.0
02/03/21	61.1	60.0	60.8	56.3	59.3	53.4	55.8	58.9	54.5	54.1	56.4	56.2	57.9	57.3	62.0	58.4	61.0	65.3	65.8	61.8
02/04/21	57.6	57.0	57.5	53.9	52.1	49.7	49.3	59.3	53.2	54.8	51.0	53.7	54.5	55.2	58.6	58.2	58.5	62.0	62.7	56.5
02/05/21	58.2	55.7	57.2	57.4	55.5	52.7	54.1	57.6	50.9	48.0	51.3	55.2	53.7	56.0	58.2	56.3	58.9	62.1	62.6	55.0
02/06/21	54.4	52.9	53.3	50.6	53.5	53.3	53.4	54.1	47.6	47.5	48.0	50.8	49.5	53.5	54.4	53.1	55.4	58.8	59.4	60.9
02/07/21	57.1	54.0	54.6	56.9	56.4	51.7	51.9	57.3	49.3	50.3	50.4	53.7	54.4	54.6	57.3	56.8	57.6	60.5	61.1	59.0
02/08/21	58.2	56.0	57.2	53.2	54.0	53.3	54.5	58.0	49.8	48.3	51.0	54.2	53.6	56.7	58.4	56.9	59.9	62.4	63.4	59.4
02/09/21	58.1	55.9	58.0	52.9	56.2	53.7	60.0	60.0	49.2	53.7	50.1	55.3	54.3	56.7	58.4	58.9	58.9	62.0	62.8	59.4
02/10/21	59.4	57.8	59.5	54.1	53.3	51.9	54.1	59.6	50.9	49.8	52.1	55.3	56.0	57.6	60.3	58.8	60.5	63.8	64.4	59.5
02/11/21	59.4	57.4	60.9	60.0	56.5	52.1	54.3	58.2	49.5	50.9	53.9	54.7	56.1	56.7	61.5	57.3	59.9	64.0	65.6	58.4
02/12/21	56.6	55.5	57.0	56.9	59.0	59.9	-----	57.2	53.5	53.8	50.0	50.8	54.7	52.1	60.0	56.4	56.0	61.3	61.5	62.0
02/13/21	57.6	54.0	55.1	57.6	56.1	55.6	-----	54.1	50.1	50.5	48.8	54.0	52.7	54.7	59.2	53.4	57.6	60.2	61.0	55.9
02/14/21	55.4	47.7	51.6	55.2	57.0	58.8	-----	45.0	40.0	43.9	47.7	46.1	50.6	43.1	58.7	47.3	48.6	57.3	56.9	60.0
02/15/21	58.0	54.8	56.0	55.3	55.3	55.0	-----	57.7	46.4	44.1	50.4	53.8	52.9	56.0	57.6	57.0	59.0	60.8	62.2	62.2
02/16/21	64.6	54.9	53.6	63.4	63.6	64.3	65.0	49.8	53.3	55.6	51.6	53.4	54.2	49.1	60.7	49.9	52.8	59.7	59.5	67.9
02/17/21	55.4	52.2	53.2	59.8	60.5	62.0	57.7	54.8	50.0	53.5	52.9	48.9	53.8	47.3	67.8	52.8	51.9	58.7	59.9	63.2
02/18/21	59.1	56.2	57.2	54.0	54.8	53.3	55.6	57.3	50.7	51.2	51.0	54.9	54.3	56.3	58.3	57.2	59.3	61.5	62.7	58.5
02/19/21	57.4	55.5	56.4	53.3	54.9	49.3	53.3	58.4	51.3	54.0	53.5	53.7	52.5	55.0	57.8	58.4	58.1	61.0	62.5	53.5
02/20/21	54.0	54.2	52.5	56.4	57.9	58.3	54.9	46.5	46.7	63.9	48.2	48.8	49.9	50.7	57.6	48.3	52.9	57.7	58.0	60.0
02/21/21	55.3	53.1	53.8	49.6	52.1	47.8	51.2	55.7	43.3	39.5	49.2	51.5	51.3	53.3	55.0	55.1	56.4	59.2	60.2	56.2
02/22/21	55.2	54.5	55.1	53.9	52.1	50.6	50.1	55.2	48.0	49.4	49.1	51.2	51.6	53.6	56.6	54.7	56.3	59.6	60.5	58.1
02/23/21	57.2	55.1	55.7	55.2	55.4	53.4	53.5	58.3	58.2	55.4	52.9	53.2	53.1	54.7	56.5	58.0	56.8	60.8	61.2	58.7
02/24/21	58.8	57.0	58.1	57.7	55.5	52.7	55.8	58.9	52.9	50.4	52.4	54.6	54.8	55.0	58.8	58.5	59.6	62.6	63.4	57.5
02/25/21	56.5	54.3	55.5	55.0	53.6	48.2	51.2	59.3	47.6	45.8	49.9	52.8	51.8	54.1	56.6	60.2	57.4	60.5	61.7	54.3
02/26/21	55.9	54.2	55.1	55.2	55.5	54.3	53.1	56.3	46.5	47.9	49.3	50.6	52.6	52.5	56.7	55.6	56.1	59.9	60.7	60.0
02/27/21	54.2	48.4	49.7	59.2	59.3	60.4	56.6	46.1	51.0	47.1	49.0	43.3	48.0	44.4	56.8	46.9	47.1	55.4	55.8	62.4
02/28/21	55.0	51.9	52.4	51.0	51.3	46.9	49.9	56.4	45.1	43.7	47.8	51.5	48.8	52.4	53.8	56.2	55.2	58.1	59.3	50.7
AVERAGE	58.1	55.4	56.6	56.5	56.8	56.4	56.5	57.2	51.2	53.6	51.5	53.2	53.6	54.6	59.5	56.7	57.7	61.2	62.0	60.4
NO. DAYS	28	28	28	28	28	28	24	28	28	28	28	28	28	28	28	28	28	28	28	28

TABLE 3. CNEL VALUES FOR MARCH 2021

RMS NUMBER																					
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
03/01/21	54.6	52.9	54.3	53.5	49.9	49.8	52.3	54.7	60.5	46.7	47.7	50.9	51.6	52.5	55.6	54.1	55.9	59.2	60.9	58.2	
03/02/21	58.5	56.3	57.5	53.3	53.4	52.5	52.1	56.9	59.0	47.4	51.3	53.1	53.1	52.8	58.4	57.0	57.4	61.7	63.0	57.1	
03/03/21	59.9	52.6	55.8	56.3	54.3	52.0	50.0	60.4	49.0	46.9	53.1	54.2	52.1	54.4	57.3	59.3	56.3	60.5	62.1	55.6	
03/04/21	60.1	58.6	59.7	54.3	57.1	53.1	56.1	59.1	51.8	48.8	53.1	55.0	56.8	57.4	60.5	58.3	58.9	63.7	64.6	62.7	
03/05/21	56.7	54.3	55.7	53.4	52.8	48.8	50.4	59.2	48.3	47.8	49.1	52.2	50.3	54.4	56.0	56.7	57.9	60.6	61.3	54.5	
03/06/21	54.6	51.8	53.8	51.5	50.4	49.2	53.6	56.2	48.3	45.8	48.3	52.8	48.8	53.6	54.0	55.6	56.1	58.1	59.0	56.7	
03/07/21	58.0	55.3	56.6	48.5	51.0	43.0	46.6	58.3	49.7	42.7	50.8	56.0	52.0	56.2	57.4	58.2	59.4	61.8	62.2	47.8	
03/08/21	58.2	56.0	56.0	53.5	49.2	47.2	50.6	56.8	50.5	47.9	51.1	55.9	53.9	55.6	58.0	58.3	59.3	59.1	61.9	53.6	
03/09/21	58.6	57.4	58.6	58.1	59.7	60.8	59.4	57.7	59.4	54.8	50.8	54.5	57.0	54.4	61.2	57.7	57.8	63.2	60.1	63.9	
03/10/21	60.8	58.6	59.3	54.7	54.2	45.6	51.6	61.1	51.1	47.9	52.8	54.7	56.5	57.4	60.9	60.4	60.4	64.4	65.1	53.1	
03/11/21	59.7	57.8	58.7	51.7	53.8	54.3	52.8	61.9	52.3	47.8	53.4	56.1	55.6	57.6	59.9	60.8	60.6	63.2	64.0	58.1	
03/12/21	59.5	57.4	58.2	54.3	56.1	57.1	54.3	60.8	51.7	53.0	52.5	55.4	55.4	57.1	60.3	59.7	59.9	63.0	63.6	59.0	
03/13/21	58.1	55.6	55.2	53.4	53.3	47.8	52.7	58.0	50.9	49.0	51.8	54.6	52.3	55.6	57.1	58.9	58.3	60.8	61.6	55.9	
03/14/21	59.5	56.4	56.8	53.0	54.5	50.4	47.8	60.4	50.1	45.8	52.2	56.1	53.6	57.5	57.8	59.4	60.3	62.1	63.3	50.3	
03/15/21	57.3	55.1	56.5	59.3	60.4	60.9	60.2	52.8	51.3	50.1	50.7	52.0	54.9	53.6	62.2	52.6	56.6	61.3	62.3	63.8	
03/16/21	60.1	57.1	58.3	56.2	56.7	56.5	57.3	59.6	53.8	50.3	53.3	56.5	55.0	57.1	59.4	58.7	60.0	63.0	63.6	62.7	
03/17/21	61.1	57.9	59.4	54.7	56.0	53.2	55.0	60.9	51.2	55.5	54.1	56.3	55.8	58.0	60.3	60.2	61.4	63.6	64.5	55.7	
03/18/21	60.0	57.8	59.3	52.2	54.6	51.8	54.1	60.8	62.5	57.2	54.1	56.3	55.9	58.3	60.0	61.2	61.6	63.6	64.8	58.4	
03/19/21	59.2	57.9	58.8	54.9	53.6	53.5	53.4	59.7	54.1	46.7	54.0	54.7	56.1	57.2	61.2	59.1	60.4	63.4	64.2	57.6	
03/20/21	57.5	54.1	55.6	51.9	51.2	45.2	49.1	56.2	47.4	46.0	50.2	54.0	54.2	55.2	57.9	55.2	57.8	60.2	61.6	53.4	
03/21/21	57.8	54.7	56.4	56.6	58.1	58.5	55.3	54.5	48.4	50.4	51.3	53.1	53.5	54.8	60.7	53.4	58.2	60.9	62.3	61.2	
03/22/21	58.5	57.0	57.9	55.6	56.2	53.8	53.2	58.9	49.0	50.6	50.7	54.7	55.9	56.7	58.7	59.1	59.6	62.2	63.1	59.8	
03/23/21	56.7	55.5	56.5	58.0	59.7	60.7	57.2	57.4	48.7	49.5	50.5	51.2	54.7	52.1	61.8	56.9	55.5	60.9	61.3	62.6	
03/24/21	52.9	50.5	51.9	57.9	59.1	60.1	57.4	56.5	47.8	50.5	49.2	46.9	49.7	49.2	58.0	56.6	51.2	57.8	60.7	62.2	
03/25/21	60.5	58.0	59.1	58.1	57.6	52.9	54.2	61.5	50.8	51.2	53.7	58.0	55.8	58.0	59.9	60.8	61.2	63.4	64.5	58.4	
03/26/21	59.3	57.7	58.6	55.3	54.0	52.3	50.7	61.0	50.9	49.8	51.6	56.2	55.6	58.9	59.7	60.3	60.7	63.0	64.7	54.5	
03/27/21	59.1	57.0	57.2	57.8	56.7	51.3	55.1	56.8	54.5	52.7	52.3	54.2	54.4	59.5	58.5	56.8	58.9	61.9	62.9	58.4	
03/28/21	56.9	55.1	56.1	51.9	53.4	49.3	52.9	57.1	51.4	50.6	52.2	60.1	52.6	54.9	57.5	56.5	57.8	61.3	62.2	57.5	
03/29/21	58.7	57.1	58.1	56.9	55.8	54.6	54.6	59.4	49.7	50.2	50.6	53.7	55.3	58.4	59.4	59.4	59.3	62.6	63.3	60.5	
03/30/21	59.6	57.7	58.8	56.2	53.7	53.3	53.7	60.9	51.0	47.4	52.1	56.6	55.5	59.2	59.8	60.2	60.7	63.3	64.1	59.4	
03/31/21	57.4	54.7	55.2	54.0	55.0	51.6	52.8	58.2	47.9	51.4	51.2	52.1	51.8	53.6	56.6	56.9	56.8	60.7	61.2	59.6	
AVERAGE	58.7	56.4	57.4	55.4	55.8	55.0	54.5	59.0	54.0	50.6	51.9	55.1	54.5	56.4	59.3	58.5	59.0	62.1	63.0	59.2	
NO. DAYS	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
QTR. AVG.	58.0	55.7	56.8	55.9	56.1	55.7	55.1	58.0	51.9	51.9	51.5	53.9	53.9	55.2	58.9	57.4	58.1	61.4	62.2	59.5	
NO. DAYS	90	90	90	90	90	90	86	90	90	90	90	90	90	90	90	90	90	90	90	90	

**TABLE 4. AVERAGE CNEL VALUES**

Site No.	2nd Quarter 2020	3rd Quarter 2020	4th Quarter 2020	1st Quarter 2021	4 Quarter Average
1	57.6	58.0	57.7	58.0	57.8
2	55.0	56.0	55.8	55.7	55.8
3	56.0	57.5	57.0	56.8	56.9
4	54.1	53.2	54.8	55.9	54.6
5	52.8	53.0	55.5	56.1	54.6
6	52.7	51.7	53.4	55.7	53.6
7	53.2	53.5	51.7	55.1	53.5
9	58.4	59.3	58.1	58.0	58.5
10	50.3	49.7	50.6	51.9	50.7
11	49.4	48.9	50.1	51.9	50.6
12	50.3	50.5	51.5	51.5	51.0
13	54.0	54.3	53.3	53.9	53.9
14	53.5	54.4	54.0	53.9	54.0
15	54.7	55.7	55.6	55.2	55.3
16	57.3	58.9	58.6	58.9	58.5
18	57.9	58.6	57.6	57.4	57.9
19	57.8	58.9	58.6	58.1	58.4
20	60.7	62.2	61.9	61.4	61.6
21	61.6	63.1	62.4	62.2	62.4
22	58.6	58.7	57.2	59.5	58.6

Table 5. WEEKLY AIR CARRIER AND AIR TAXI  
FLIGHTS FOR THE FIRST QUARTER 2021

AIRCRAFT	AS EMB175	OPERATIONS FROM				1/1/2021	to	1/31/2021	31 DAYS		
		AS B7377				AS A319		AS B7378	AS B7379		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	18	30	2	2	0	0		17	9	53	39
EVENING	13	1	0	0	0	0		0	8	4	19
NIGHT	0	0	0	0	0	0		0	0	1	0
TOTAL	31	31	2	2	0	0		17	17	58	58
	AS A320	OPERATIONS FROM				1/1/2021	to	1/31/2021			
		A21N				US CRJ9		AA CRJ2	AA CRJ7		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	11	11	0	0	5	5		0	0	0	0
EVENING	0	0	0	0	0	0		0	0	0	0
NIGHT	0	0	0	0	0	0		0	0	0	0
TOTAL	11	11	0	0	5	5		0	0	0	0
	AA B7378	OPERATIONS FROM				1/1/2021	to	1/31/2021			
		WN B38M				WN B7377		WN B7378	UA A320		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	30	0	0	0	323	181		104	107	0	0
EVENING	0	30	0	0	8	146		5	2	0	0
NIGHT	0	0	0	0	0	4		0	0	0	0
TOTAL	30	30	0	0	331	331		109	109	0	0
	UA A319	OPERATIONS FROM				1/1/2021	to	1/31/2021			
		UA B7378				UA EMB175		UA RJ	UA CRJ7		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0		34	31	0	0
EVENING	0	0	0	0	0	0		0	3	0	0
NIGHT	0	0	0	0	0	0		0	0	0	0
TOTAL	0	0	0	0	0	0		34	34	0	0
	FE A300	OPERATIONS FROM				1/1/2021	to	1/31/2021			
		UPS B757				UPS A300		DL E175	DL CRJ		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	9	29	0	0	7	15		95	84	0	0
EVENING	36	16	0	0	20	3		0	9	0	0
NIGHT	0	0	0	0	6	15		0	2	0	0
TOTAL	45	45	0	0	33	33		95	95	0	0
	DL CRJ7	OPERATIONS FROM				1/1/2021	to	1/31/2021			
		DL B7377				DL B738		B6 A320	C208		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0		0	0	0	0
EVENING	0	0	0	0	0	0		0	0	0	0
NIGHT	0	0	0	0	0	0		0	0	0	0
TOTAL	0	0	0	0	0	0		0	0	0	0
	NKS A319	OPERATIONS FROM				1/1/2021	to	1/31/2021			
		B6 A321				B6 A21N		NKS A320	A21N		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0		9	9	4	4
EVENING	0	0	0	0	0	0		0	0	0	0
NIGHT	0	0	0	0	0	0		0	0	0	0
TOTAL	0	0	0	0	0	0		9	9	4	4
TOTALS										DEP	ARR
										611	429
										30	209
										1	4
										642	642

Table 5. WEEKLY AIR CARRIER AND AIR TAXI  
FLIGHTS FOR THE FIRST QUARTER 2021

AIRCRAFT	OPERATIONS FROM				2/1/2021 to		2/28/2021		28 DAYS	
	AS EMB175	AS B7377	AS B7377	AS B7377	AS A319	AS A319	AS B7378	AS B7378	AS B7379	AS B7379
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	18	25	0	0	0	0	12	10	58	52
EVENING	7	0	0	0	0	0	2	5	13	16
NIGHT	0	0	0	0	0	0	1	0	3	6
TOTAL	25	25	0	0	0	0	15	15	74	74
	OPERATIONS FROM				2/1/2021 to		2/28/2021		AA CRJ7	
	AS A320	A21N	A21N	A21N	US CRJ9	US CRJ9	AA CRJ2	AA CRJ2	AA CRJ7	AA CRJ7
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	3	0	0	0	0	0	0	0	0
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	3	3	0	0	0	0	0	0	0	0
	OPERATIONS FROM				2/1/2021 to		2/28/2021		UA A320	
	AA B7378	WN B38M	WN B38M	WN B38M	WN B7377	WN B7377	WN B7378	WN B7378	UA A320	UA A320
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	24	0	0	0	250	120	94	94	0	0
EVENING	0	22	0	0	0	127	0	0	0	0
NIGHT	0	2	0	0	0	3	0	0	0	0
TOTAL	24	24	0	0	250	250	94	94	0	0
	OPERATIONS FROM				2/1/2021 to		2/28/2021		UA CRJ7	
	UA A319	UA B7378	UA B7378	UA B7378	UA EMB175	UA EMB175	UA RJ	UA RJ	UA CRJ7	UA CRJ7
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	17	17	10	10	0	0
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	17	17	10	10	0	0
	OPERATIONS FROM				2/1/2021 to		2/28/2021		DL CRJ	
	FE A300	UPS B757	UPS B757	UPS B757	UPS A300	UPS A300	DL E175	DL E175	DL CRJ	DL CRJ
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	8	30	0	0	7	13	84	80	0	0
EVENING	31	2	0	0	17	3	0	4	0	0
NIGHT	1	8	0	0	5	13	0	0	0	0
TOTAL	40	40	0	0	29	29	84	84	0	0
	OPERATIONS FROM				2/1/2021 to		2/28/2021		C208	
	DL CRJ7	DL B7377	DL B7377	DL B7377	DL B738	DL B738	B6 A320	B6 A320	C208	C208
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	0	0	0	0
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0
	OPERATIONS FROM				2/1/2021 to		2/28/2021		A21N	
	NKS A319	B6 A321	B6 A321	B6 A321	B6 A21N	B6 A21N	NKS A320	NKS A320	A21N	A21N
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	1	1	0	0	0	0	7	7	8	8
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	0	0	0	0	7	7	8	8
									<b>TOTALS</b>	
									<b>DEP</b>	<b>ARR</b>
									<b>503</b>	<b>348</b>
									<b>22</b>	<b>170</b>
									<b>4</b>	<b>11</b>
									<b>529</b>	<b>529</b>

Table 5. WEEKLY AIR CARRIER AND AIR TAXI  
FLIGHTS FOR THE FIRST QUARTER 2021

AIRCRAFT	AS EMB175	OPERATIONS FROM				3/1/2021 AS A319	to	3/31/2021 AS B7378	31 DAYS	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	31	31	1	1	0	0	0	18	20	70
EVENING	0	0	0	0	0	0	0	3	1	14
NIGHT	0	0	0	0	0	0	0	0	0	1
TOTAL	31	31	1	1	0	0	0	21	21	85
	AS A320	OPERATIONS FROM				3/1/2021 US CRJ9	to	3/31/2021 AA CRJ2	AA CRJ7	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	0	0	0	0	0	0	0	0	0	0
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0
	AA B7378	OPERATIONS FROM				3/1/2021 WN B7377	to	3/31/2021 WN B7378	UA A320	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	30	27	0	0	412	332	126	87	0	0
EVENING	0	3	0	0	92	157	5	40	0	0
NIGHT	0	0	0	0	0	15	0	4	0	0
TOTAL	30	30	0	0	504	504	131	131	0	0
	UA A319	OPERATIONS FROM				3/1/2021 UA EMB175	to	3/31/2021 UA RJ	UA CRJ7	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	0	0	0	0	3	3	22	22	3	3
EVENING	0	0	0	0	0	0	0	1	0	0
NIGHT	0	0	0	0	0	0	1	0	0	0
TOTAL	0	0	0	0	3	3	23	23	3	3
	FE A300	OPERATIONS FROM				3/1/2021 UPS A300	to	3/31/2021 DL E175	DL CRJ	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	12	32	0	0	11	17	31	31	0	0
EVENING	37	0	0	0	22	1	0	0	0	0
NIGHT	0	17	0	0	3	18	0	0	0	0
TOTAL	49	49	0	0	36	36	31	31	0	0
	DL CRJ7	OPERATIONS FROM				3/1/2021 DL B738	to	3/31/2021 B6 A320	C208	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	0	0	0	0	0	0	0	0	0	0
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0
	NKS A319	OPERATIONS FROM				3/1/2021 B6 A21N	to	3/31/2021 NKS A320	A21N	
		ARR	DEP	ARR	DEP				ARR	DEP
DAY	0	0	0	0	0	0	1	1	10	10
EVENING	0	0	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	1	1	10	10
TOTALS										ARR
DEP										593
114										227
2										24
844										844



**Table 5. (continued)**

PERIOD TOTALS FOR  
AIR CARRIERS AND COMMUTERS

AIR CARRIERS

	<u>DEP</u>	<u>ARR</u>
DAY	8090	6417
EVE	1427	2720
NIGHT	93	473
TOTAL	9610	9610

COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	975	911
EVE	0	55
NIGHT	0	9
TOTAL	975	975

AIR CARRIERS AND COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	9065	7328
EVE	1427	2775
NIGHT	93	482
TOTAL	10585	10585

## VI. INCOMPATIBLE LAND USE

The contours shown in Figures 1 and 2 were digitized and overlaid on a digital land use map of the area around the Airport. The total areas enclosed by the 65 and 70 dB CNEL contours were 325.5 and 161.4 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 0.23 acres within the 65 dB contour of which 0 acres were also within the 70 dB contour.

It should be noted that the above incompatible land areas do not include the soundproofed schools in the vicinity of the Airport (the Luther Burbank Middle School, St. Patrick and Glenwood Schools). The above incompatible land use areas also do not include those residences to which the Airport has acquired avigation easements. Within the 65 dB contour, the Airport has acquired avigation easement, through its ongoing residential sound insulation program, to 1 parcel of land. This parcel totals 0.14 acres. No parcels are also located within the 70 dB contour. The Airport has acquired avigation easement to a number of parcels under California law pursuant to the Baker v. Burbank-Glendale-Pasadena Airport Authority line of legal decisions. None of these "Baker" parcels remain within the Airport's current 65 dB CNEL contour.

It should be noted that the Airport Authority has made repeated attempts over the past several years to acoustically treat and obtain avigation easement at the 1 single family residential parcel, totaling approximately 0.23 acres of the incompatible land use area within the 65 dB contour. Owners of this parcel has either refused to respond to notices regarding the sound insulation program, have withdrawn from the program, or own property with major building code deficiencies that prevent them from participating.

The estimated numbers of incompatible residences is 1 within the 65 dB contour, of which 0 are also within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 3 and 0, respectively.

## REFERENCES

1. California Department of Transportation, Division of Aeronautics, "Noise Standards", California Code of Regulations, Title 21, Chapter 2.5, Subchapter 6.
2. L-30488, Department of Transportation, State of California, 27 June 1984.
3. "Quarterly Noise Monitoring at Hollywood Burbank Airport, Second Quarter 2020", AAAI Report 1576.
4. "Quarterly Noise Monitoring at Hollywood Burbank Airport, Third Quarter 2020", AAAI Report 1579.
5. "Quarterly Noise Monitoring at Hollywood Burbank Airport, Fourth Quarter 2020", AAAI Report 1585.

**APPENDIX A**  
**NOISE MONITOR INSTRUMENTATION**

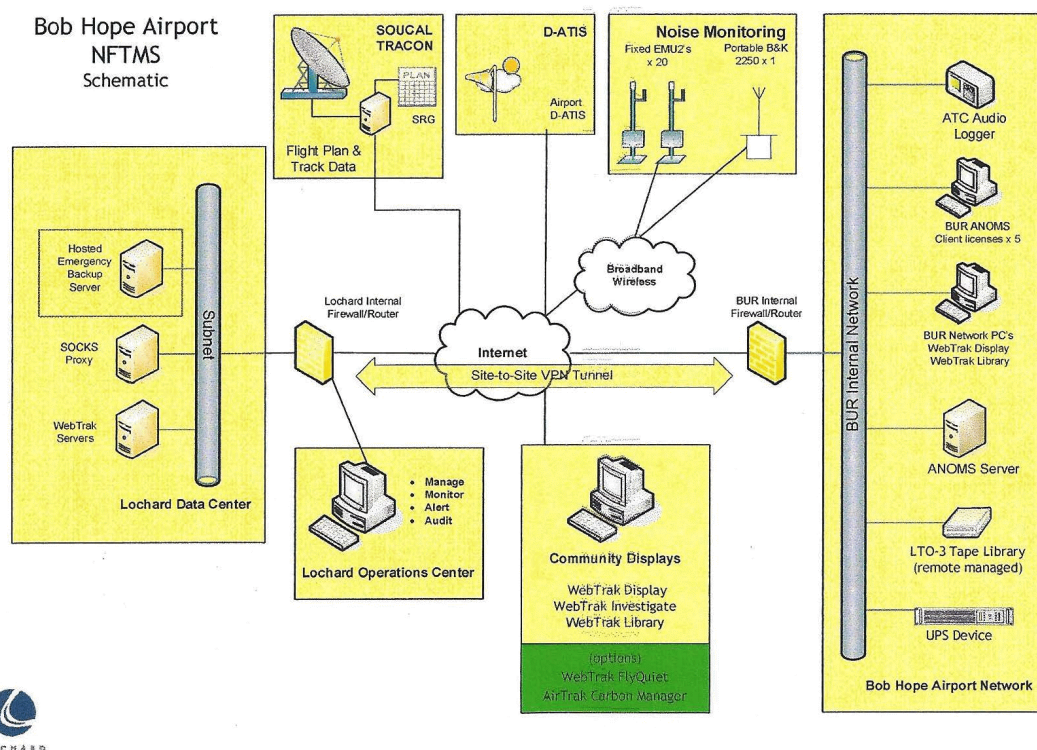
## **APPENDIX A**

### **NOISE MONITOR INSTRUMENTATION**

The permanent noise monitor system, manufactured by Bruel & Kjaer, consists of 20 noise monitoring terminals (NMT) connected to a central site by DSL or wireless connections. The system block diagram showing the major elements is shown in Figure A-1. The electrical signal generated by the microphone/preamplifier assembly at each site is processed and saved locally in the B & K sound level meter. The signal is passed through an A-weighting filter and is then detected and converted to a digital level signal in decibels with a resolution of 0.1 dB.

The stored sound level data at each site is dumped once every 24-hour period via wireless or DSL connection to the central site. The data received by the central site are processed by the ANOMS computer software. According to preset parameters, the noise is separated into two categories--aircraft noise and community noise. Each event attributed to an aircraft is saved in a noise event file. Computations are made of hourly noise level, community noise equivalent level, runway use, and other parameters. A wide variety of data presentations is available by exercising a number of routines provided by B & K, as well as special-purpose routines that can be generated by the user.

The locations of the remote sites (shown in Figure 3) are listed by latitude and longitude in Table A-1.



**Figure A-1. Permanent Noise Monitor System Schematic**

**TABLE A-1**  
**NOISE MONITOR SITE LOCATIONS**

<b>NMT</b>	<b>Latitude</b>	<b>Longitude</b>
1	34.188424	-118.358983
2	34.184296	-118.347330
3	34.175731	-118.354197
4	34.212022	-118.364391
5	34.215261	-118.357381
6	34.220705	-118.365214
7	34.224979	-118.363989
9	34.198871	-118.398889
10	34.195336	-118.342392
11	34.197321	-118.340376
12	34.190175	-118.365404
13	34.181303	-118.345270
14	34.178786	-118.347134
15	34.173922	-118.363157
16	34.181185	-118.350949
18	34.196899	-118.389014
19	34.181277	-118.357866
20	34.188378	-118.351878
21	34.186700	-118.354939
22	34.217035	-118.361725

**APPENDIX B  
CALIBRATION**



## **APPENDIX B CALIBRATION**

The system was calibrated during setup using a Bruel and Kjaer acoustic calibrator. Acoustic calibrations are performed annually. Electrical calibrations are performed automatically four times per 24-hour day. Figure B-1 shows the calibration summary for January 2013 and Figure B-2 shows the detailed electrical calibration report for Noise Monitor Site 1.



## Devices Report

### RMT Calibration Results

Bob Hope Airport

Start Date: 04-Jan-2013

End Date: 31-Jan-2013

Monitor Location: 1 - 1, (Fixed)

Seven Day Period Commencing: Friday January 04, 2013

Calibrated with Sound Calibrator : Never

Number of Calibrations: 27

Average adjustment for this RMT over this period: 0.10 dB

Date Time	Expected Result	Value Measured	Calibration Error
04-Jan-2013 0:00	87.1	87.2	0.1
04-Jan-2013 6:00	87.1	87.2	0.1
04-Jan-2013 12:00	87.1	87.2	0.1
04-Jan-2013 18:00	87.1	87.2	0.1
05-Jan-2013 0:00	87.1	87.2	0.1
05-Jan-2013 6:00	87.1	87.2	0.1
05-Jan-2013 12:00	87.1	87.2	0.1
05-Jan-2013 18:00	87.1	87.2	0.1
06-Jan-2013 0:00	87.1	87.2	0.1
06-Jan-2013 6:00	87.1	87.2	0.1
06-Jan-2013 12:00	87.1	87.2	0.1
06-Jan-2013 18:00	87.1	87.2	0.1
07-Jan-2013 0:00	87.1	87.2	0.1
07-Jan-2013 6:00	87.1	87.2	0.1
07-Jan-2013 12:00	87.1	87.2	0.1
07-Jan-2013 18:00	87.1	87.2	0.1
08-Jan-2013 0:00	87.1	87.2	0.1
08-Jan-2013 6:00	87.1	87.2	0.1
08-Jan-2013 12:00	87.1	87.3	0.2
08-Jan-2013 18:00	87.1	87.2	0.1
09-Jan-2013 0:00	87.1	87.2	0.1
09-Jan-2013 6:00	87.1	87.2	0.1
09-Jan-2013 12:00	87.1	87.2	0.1
09-Jan-2013 18:00	87.1	87.2	0.1
10-Jan-2013 0:00	87.1	87.2	0.1
10-Jan-2013 6:00	87.1	87.2	0.1
10-Jan-2013 12:00	87.1	87.2	0.1



## Devices Report

### RMT Calibration Results

Bob Hope Airport

Start Date: 04-Jan-2013

End Date: 31-Jan-2013

Monitor Location		04-Jan-2013	11-Jan-2013	18-Jan-2013	25-Jan-2013
1	1	0.1	0.1	0.1	0.1
2	2	0.4	0.4	0.3	0.3
3	3	0.5	0.0	0.0	0.0
4	4	0.3	0.3	0.3	0.3
5	#5	0.2	0.2	0.2	0.2
6	6	0.0	0.0	0.0	0.0
7	7	0.3	0.3	0.3	0.3
9	9	0.2	0.2	0.2	0.2
10	10	0.2	0.2	0.2	0.2
11	11	0.6	0.0	0.0	0.0
12	12	0.3	0.3	0.3	0.3
13	13	0.0	0.0	0.0	0.0
14	14	0.0	0.0	0.0	0.0
15	15	0.0	0.0	0.0	0.0
16	16	0.4	0.4	0.4	0.4
18	18	0.0	0.0	0.1	0.1
19	19	0.0	0.0	0.0	0.0
20	20	0.1	0.0	0.1	0.1
21	21	0.0	0.0	0.0	0.0
22	22	0.0	0.0	0.0	0.0