



AAAI Report 1596  
AAAI Project 88018

# QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT SECOND QUARTER 2021

AUGUST 2021

Prepared for:



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**QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT  
SECOND 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.

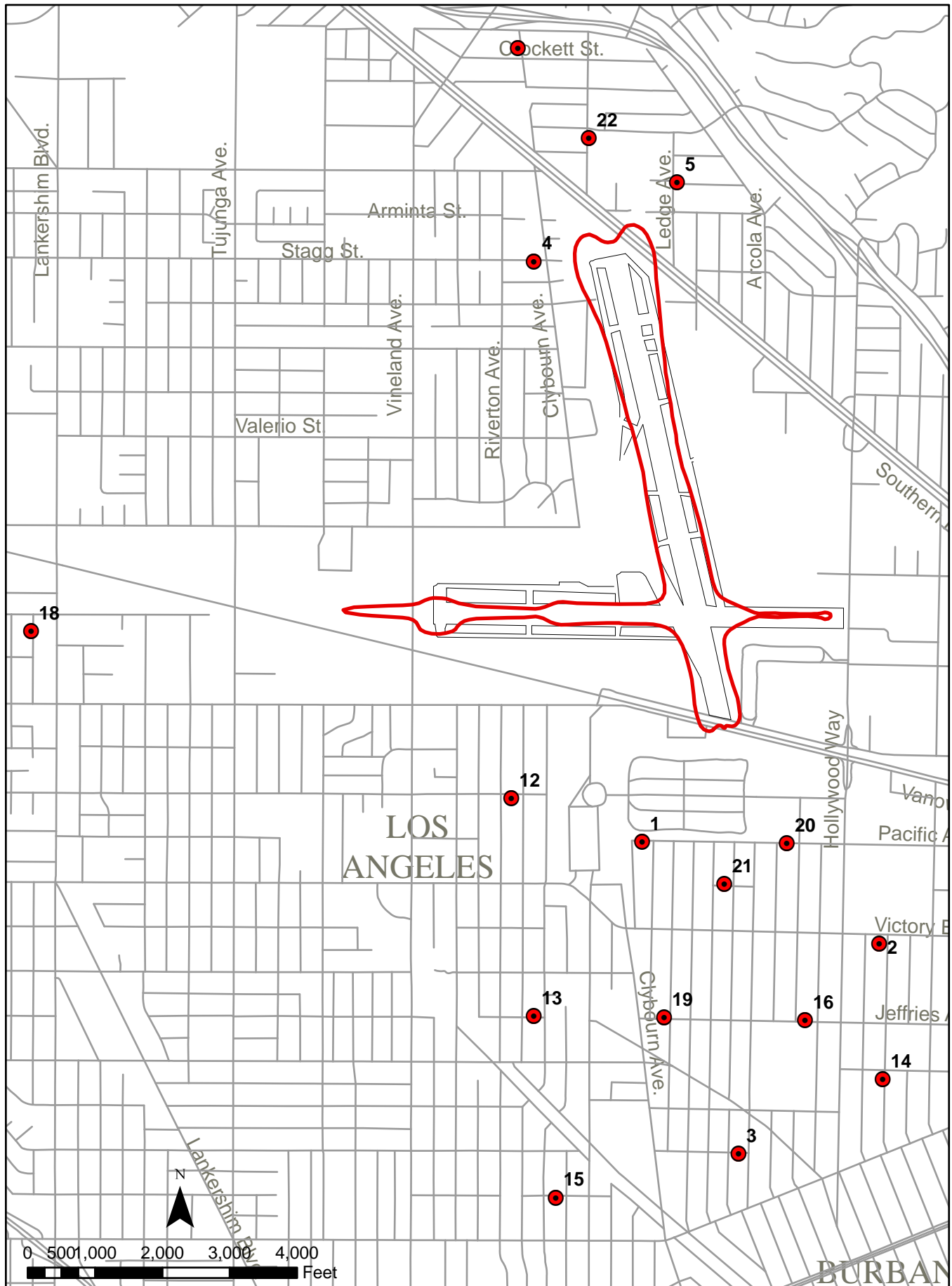
A permanent noise monitoring system became operational in April 1980 and, with brief interruption for system expansion, maintenance, and program changes, has been operational since that time. Of the original nine noise monitor sites, eight have remained unchanged since 1980. The monitor at site 8 was 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.

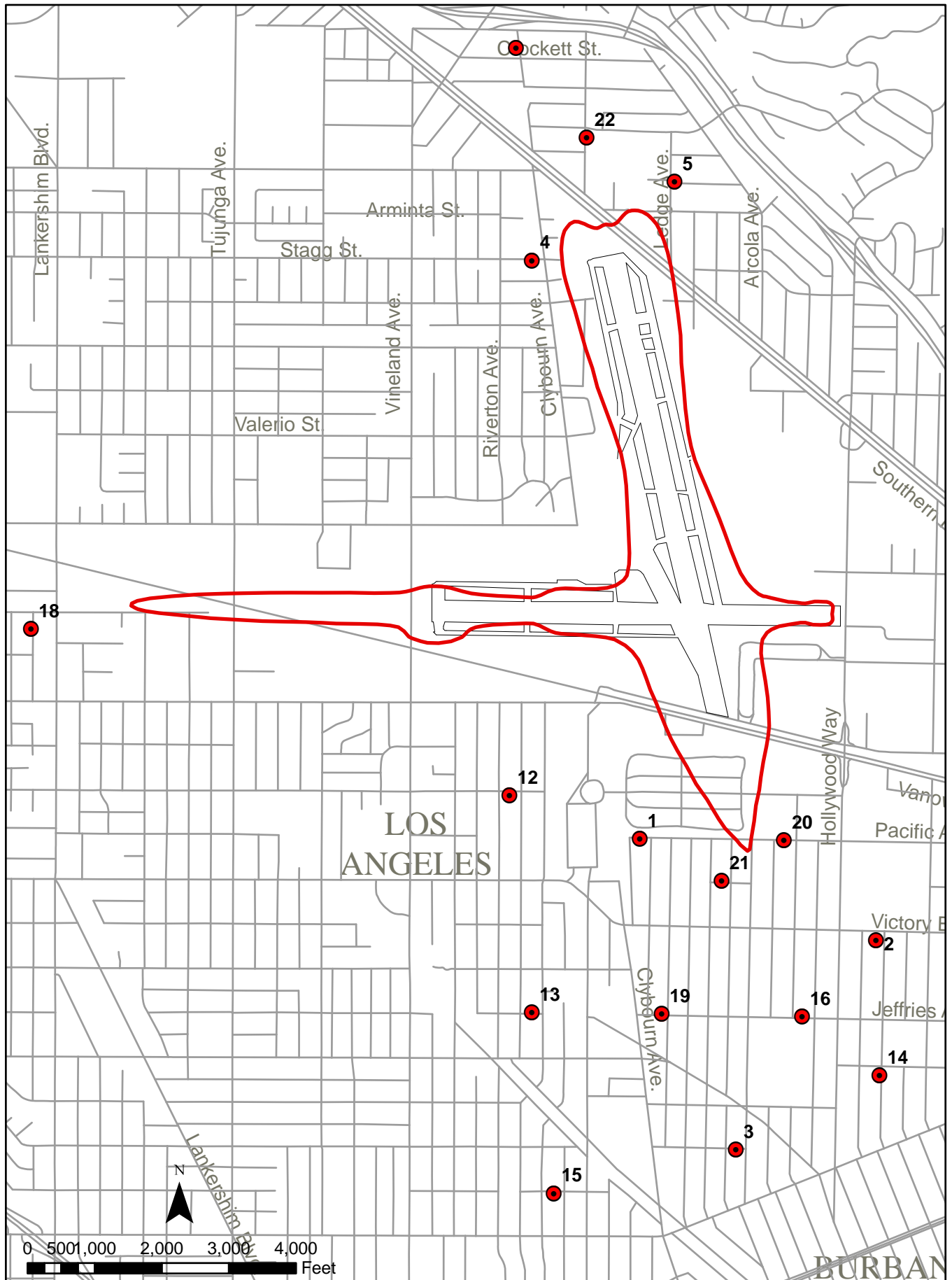
This report describes the data acquired by the monitoring system during the second quarter of 2021. Noise impact boundaries for 65 dB and 70 dB are shown based on these measurements and measurements obtained during the third and fourth quarters of 2020 and first quarter of 2021 reported in References 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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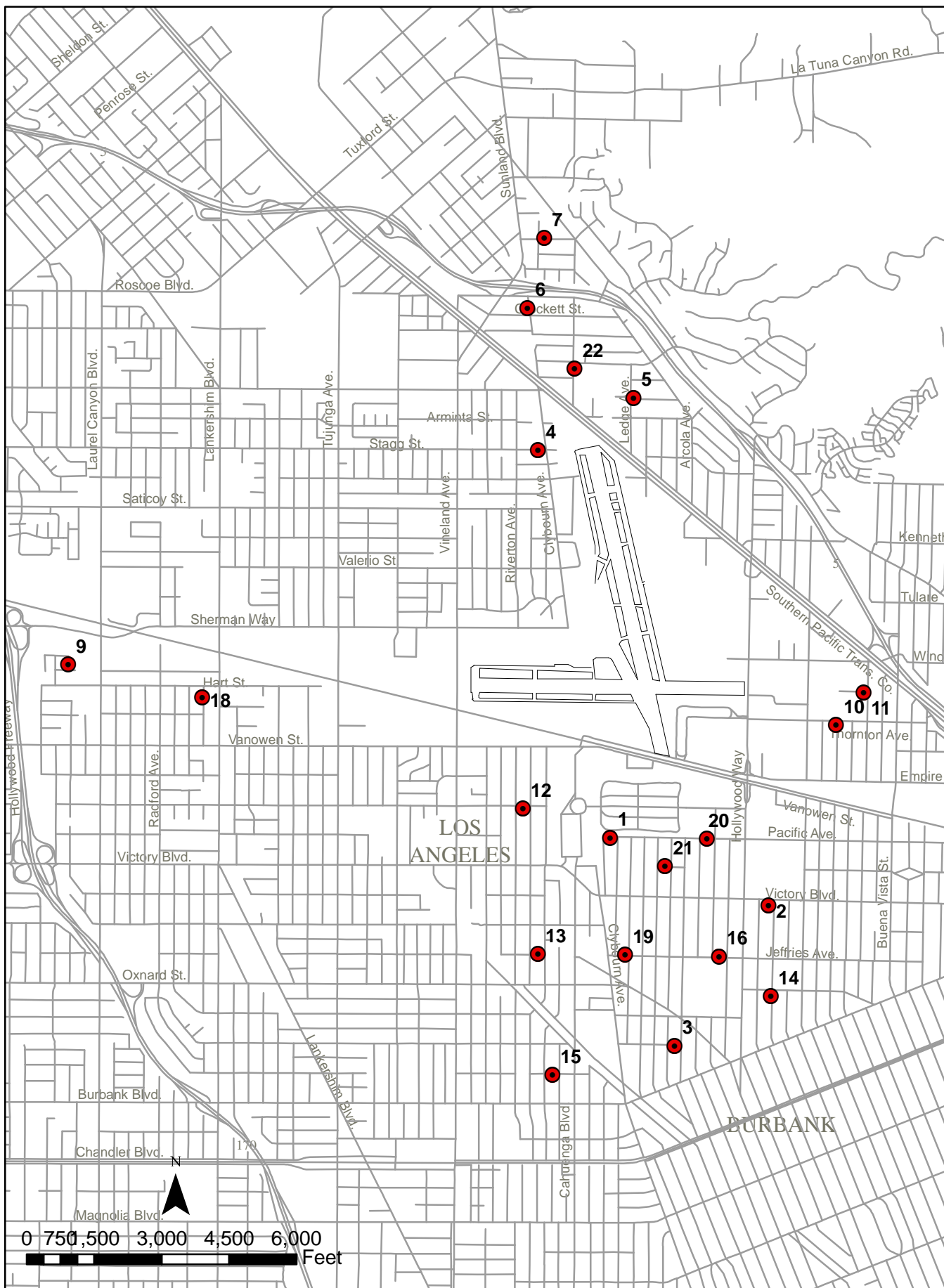
<sup>1</sup> Prior to January 1, 1986, a CNEL of 70 dB defined the noise impact boundary.



BURBANK AIRPORT - 70 CNEL CONTOUR for 2nd QUARTER 2021



BURBANK AIRPORT - 65 CNEL CONTOUR for 2nd QUARTER 2021



BURBANK AIRPORT - NOISE MONITOR LOCATIONS

## 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.



**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 APRIL 2021

RMS NUMBER																					
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
04/01/21	57.8	56.2	57.3	53.0	52.3	49.1	52.6	56.6	58.7	47.3	53.7	51.6	54.6	54.2	59.2	55.6	57.8	62.4	63.1	58.6	
04/02/21	60.8	56.7	58.8	56.4	55.3	52.7	57.6	61.1	50.1	47.1	52.5	55.8	54.7	57.3	59.3	60.2	60.6	62.9	64.2	60.2	
04/03/21	58.1	55.2	56.0	53.7	53.2	50.4	53.5	58.7	49.9	46.3	50.3	53.4	52.4	55.7	57.0	58.4	58.3	61.1	61.8	59.8	
04/04/21	57.8	55.7	56.8	54.7	50.6	47.9	52.5	57.5	49.2	47.6	50.3	53.0	53.4	55.5	57.8	57.2	58.5	61.7	62.3	57.6	
04/05/21	59.0	57.2	58.4	54.6	52.9	51.1	53.8	58.9	49.8	52.3	50.7	55.0	55.3	57.2	59.8	57.9	60.2	62.9	63.5	59.6	
04/06/21	63.0	57.2	57.7	52.8	55.0	55.1	52.7	61.1	51.3	47.2	51.6	57.9	54.8	58.0	58.5	60.1	60.6	62.8	63.4	57.3	
04/07/21	60.3	57.5	58.3	54.0	53.7	52.0	55.7	60.7	49.1	51.6	52.2	54.9	55.1	57.1	59.1	60.0	60.4	65.4	63.6	60.1	
04/08/21	62.4	59.8	61.3	58.8	58.3	53.9	61.0	61.4	54.6	49.5	54.0	56.9	58.2	58.7	62.2	60.5	62.1	66.3	66.0	60.8	
04/09/21	59.1	57.9	58.5	56.6	54.7	52.1	56.4	61.0	52.9	51.1	51.5	54.8	55.2	57.6	59.3	60.7	60.5	63.8	64.1	60.2	
04/10/21	58.3	55.6	56.7	55.5	52.8	48.8	52.9	59.0	55.4	47.4	50.6	54.1	53.1	55.9	57.5	59.1	58.9	61.3	62.7	57.3	
04/11/21	60.0	56.4	57.6	57.4	55.4	51.8	56.4	60.5	50.6	50.5	53.9	56.2	54.1	57.5	58.6	60.0	60.4	62.3	63.8	60.8	
04/12/21	59.1	57.2	58.0	53.0	54.0	52.8	53.3	60.8	50.4	50.7	50.9	54.8	54.8	57.3	59.1	59.6	60.0	62.6	63.6	60.8	
04/13/21	61.0	59.5	60.4	54.4	57.3	51.9	56.6	60.5	52.0	49.4	51.3	57.9	57.6	57.8	61.2	60.2	61.2	64.4	64.8	59.8	
04/14/21	61.4	60.1	59.9	55.4	58.4	53.2	58.7	60.5	52.3	51.1	53.9	56.9	57.6	57.7	61.5	59.5	61.9	64.8	65.3	62.8	
04/15/21	59.7	59.0	61.2	55.1	56.6	55.1	57.0	61.1	50.6	58.8	53.4	56.0	57.4	57.3	62.4	61.7	60.4	64.6	64.6	61.4	
04/16/21	59.9	58.8	59.4	55.1	54.6	50.1	51.6	61.3	51.6	49.6	52.2	55.3	56.5	57.8	60.8	60.9	60.8	64.5	65.2	58.6	
04/17/21	57.5	54.9	55.6	51.5	50.7	48.5	49.3	56.2	48.9	45.5	51.5	53.7	52.7	59.7	57.0	56.5	58.3	60.7	62.1	57.7	
04/18/21	56.3	46.6	50.0	58.9	61.0	61.7	58.0	47.5	45.5	44.6	51.3	47.0	47.9	43.7	57.4	47.0	47.7	54.8	55.9	64.4	
04/19/21	56.4	54.8	56.1	54.5	54.0	52.7	54.0	56.0	46.0	47.8	48.0	52.2	53.0	53.7	56.9	56.1	57.3	60.7	61.5	61.1	
04/20/21	60.6	59.5	60.5	58.5	59.0	53.3	54.8	61.2	51.5	47.6	53.8	56.6	57.5	57.6	61.2	59.9	60.8	64.5	65.0	60.9	
04/21/21	58.0	56.2	57.3	53.3	53.5	51.7	52.4	61.0	49.6	48.9	51.0	54.8	53.8	56.8	57.9	60.5	59.4	61.2	62.4	58.9	
04/22/21	59.3	58.1	58.9	54.4	55.0	48.8	53.7	61.2	53.5	45.7	51.7	55.1	55.9	57.9	60.2	61.4	60.3	63.2	64.1	57.0	
04/23/21	58.7	56.7	57.9	51.5	56.5	51.5	54.2	60.7	54.4	48.3	51.0	55.1	54.6	57.3	58.6	60.5	60.3	62.4	63.5	58.6	
04/24/21	57.4	54.6	55.4	48.5	50.6	48.7	46.6	58.4	50.3	45.8	50.5	54.2	52.2	55.6	56.2	57.2	58.7	60.0	61.3	55.5	
04/25/21	59.7	57.2	57.5	52.1	55.0	47.0	49.1	58.7	53.6	50.4	52.7	55.2	55.0	57.2	59.0	58.0	59.7	62.5	63.6	53.6	
04/26/21	59.3	56.7	57.7	55.2	55.8	53.9	56.1	58.6	53.3	52.4	51.5	55.7	54.4	57.0	58.5	58.0	59.8	61.7	62.9	61.2	
04/27/21	59.6	57.9	59.6	56.1	54.5	51.1	53.7	60.6	50.4	47.8	52.4	55.6	56.3	56.9	60.4	60.1	60.6	63.7	64.5	57.7	
04/28/21	59.6	58.9	60.8	59.5	60.9	61.4	59.1	56.3	52.6	52.2	53.6	54.0	57.5	54.9	62.5	55.3	59.1	64.2	64.6	65.5	
04/29/21	57.7	56.4	57.5	54.3	57.3	52.9	54.9	58.4	51.2	51.9	50.7	52.4	54.4	54.3	58.8	57.9	61.5	62.2	63.0	60.2	
04/30/21	58.0	56.0	57.2	54.7	54.2	48.4	52.0	59.1	49.9	46.5	54.7	53.9	53.5	54.9	58.3	58.3	58.8	62.0	63.1	56.7	
	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
Average	59.2	57.1	58.1	55.1	55.8	53.6	55.0	59.4	51.3	50.2	51.8	54.8	55.0	56.6	59.3	58.9	59.7	62.7	63.3	59.9	
NO. DAYS	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

TABLE 2. CNEL VALUES FOR MAY 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
05/01/21	58.0	55.6	56.7	54.1	52.6	51.6	52.0	58.5	59.2	50.3	51.0	54.5	53.3	56.0	57.4	57.9	59.1	61.1	62.2	58.0
05/02/21	58.8	57.1	57.7	52.1	54.4	50.4	53.0	58.7	47.9	46.8	50.3	54.8	54.8	57.0	58.6	58.6	60.1	62.4	63.6	55.5
05/03/21	60.0	58.3	60.9	54.7	58.7	50.2	56.0	58.5	53.5	52.4	51.9	55.1	56.8	57.9	61.4	59.3	60.8	64.1	65.3	59.1
05/04/21	59.2	56.6	58.2	55.3	55.5	53.8	56.4	59.8	49.3	47.3	50.6	55.3	55.2	56.2	58.9	60.5	59.1	62.1	63.2	62.4
05/05/21	58.1	56.3	57.7	54.2	52.1	50.2	54.6	60.3	48.1	48.9	50.6	53.3	54.3	55.9	58.5	59.5	59.7	61.9	63.2	60.5
05/06/21	59.2	57.2	58.3	56.5	54.8	51.6	53.6	61.9	53.3	50.1	50.7	54.8	54.9	57.2	59.3	60.8	60.3	63.0	64.3	58.1
05/07/21	60.1	57.8	59.0	54.4	56.9	51.3	54.7	61.6	51.0	48.7	51.4	55.3	56.0	57.5	60.4	60.8	60.8	63.8	64.6	59.7
05/08/21	59.9	57.9	57.7	52.5	56.5	43.9	50.2	60.1	52.1	47.8	52.6	56.1	56.3	57.2	59.1	59.1	60.3	62.9	63.6	55.5
05/09/21	59.8	56.8	58.3	54.3	57.0	48.2	50.1	61.9	53.3	47.0	51.4	56.2	54.5	58.0	59.3	61.3	60.9	62.7	64.3	54.3
05/10/21	59.9	57.6	58.7	56.0	55.3	52.6	53.3	61.0	52.3	48.4	51.7	56.6	56.1	58.2	60.0	61.2	61.2	63.4	64.7	61.4
05/11/21	59.2	57.2	58.5	54.8	55.7	56.5	58.3	61.7	51.0	49.0	51.2	56.5	55.2	57.4	59.1	61.2	60.4	62.9	64.0	64.1
05/12/21	61.7	59.4	60.7	55.4	57.0	55.5	55.3	62.4	52.4	52.2	53.1	57.4	58.1	58.2	62.6	61.2	61.9	65.5	66.5	62.1
05/13/21	61.0	59.1	60.6	54.0	56.9	52.6	53.7	62.1	52.4	47.4	52.9	56.8	57.3	58.9	61.9	60.9	62.4	65.1	66.2	59.9
05/14/21	60.5	57.8	58.5	54.9	56.3	49.4	54.2	62.8	49.9	45.4	51.8	56.0	55.1	57.8	59.6	61.3	60.8	63.7	64.8	58.8
05/15/21	59.6	57.2	58.1	52.5	55.6	49.0	52.0	59.0	51.5	52.5	52.0	56.0	54.8	57.4	59.4	58.6	60.2	62.9	63.8	56.9
05/16/21	60.2	58.3	59.0	55.4	54.6	45.4	45.6	61.2	52.9	53.3	52.2	56.0	56.0	58.2	60.3	60.6	61.3	63.9	65.1	50.1
05/17/21	60.6	58.8	59.6	53.7	53.9	46.3	51.7	60.0	52.4	51.4	52.1	56.4	57.8	58.8	60.6	59.5	61.8	64.5	65.3	57.4
05/18/21	61.8	60.9	62.2	57.0	55.1	50.9	53.3	61.2	51.5	49.1	53.5	57.4	59.1	59.6	62.8	60.5	62.2	65.9	66.6	58.9
05/19/21	61.7	60.1	61.0	54.7	55.6	52.6	54.0	61.4	51.7	50.1	53.3	56.1	57.5	58.9	62.0	60.8	62.1	65.6	66.5	59.9
05/20/21	62.3	58.3	59.5	55.7	56.4	54.1	57.1	63.2	51.2	45.8	54.2	58.4	56.3	58.9	60.5	62.8	62.2	65.4	66.6	61.0
05/21/21	57.6	56.3	58.0	57.1	59.5	59.7	58.3	60.4	50.6	52.1	51.3	53.0	54.9	55.0	60.8	60.4	58.2	62.1	62.4	62.9
05/22/21	59.5	56.5	57.1	55.0	54.5	45.9	51.9	58.5	49.9	47.5	51.4	55.0	54.0	57.0	58.1	58.1	59.9	62.1	63.4	56.4
05/23/21	59.8	57.1	58.2	53.5	55.7	50.3	52.6	59.4	49.6	48.8	52.0	57.5	54.9	58.0	59.3	58.7	61.0	62.9	64.4	57.2
05/24/21	59.0	58.1	59.1	55.1	56.2	50.2	52.6	58.3	47.5	49.2	50.9	54.5	56.1	57.1	60.3	57.7	60.2	64.0	64.6	60.5
05/25/21	60.1	58.9	60.7	55.0	55.3	53.4	54.8	59.9	50.9	49.3	52.7	55.5	57.2	57.2	61.3	59.8	60.5	64.4	65.3	58.3
05/26/21	60.7	58.8	59.7	55.3	55.1	51.9	53.5	61.4	53.4	49.8	52.4	55.6	56.7	57.8	60.9	60.4	61.1	64.4	65.3	61.7
05/27/21	61.4	59.1	60.6	53.5	54.6	51.2	53.2	62.5	54.8	47.4	53.5	57.2	57.1	59.3	61.5	62.0	62.6	64.9	66.0	59.2
05/28/21	60.7	59.0	60.0	55.1	59.6	52.2	51.8	62.3	51.4	50.9	53.4	56.5	56.7	58.8	61.4	61.6	62.0	64.4	65.8	60.8
05/29/21	58.3	56.3	57.3	51.7	55.8	46.9	47.4	59.1	52.3	48.5	49.3	53.7	54.0	56.2	58.2	58.6	59.2	62	63	56.5
05/30/21	59.4	57.7	58.4	52.5	54.7	49.3	51.6	59.7	54.2	47.6	51.1	55.9	55.6	57.8	59.9	59.4	60.3	62.9	64.2	55.8
05/31/21	59.6	57.6	58.4	56.1	54.1	48.7	47.0	60.3	52.5	52.0	51.2	55.0	55.7	57.6	59.7	59.4	61.2	63.6	64.9	54.7
AVERAGE	60.1	58.0	59.2	54.8	56.0	52.2	53.9	60.8	52.4	49.7	52.0	55.9	56.1	57.8	60.3	60.3	60.9	63.7	64.8	59.5
NO. DAYS	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

TABLE 3. CNEL VALUES FOR JUNE 2021

RMS NUMBER																					
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
06/01/21	60.7	58.4	59.8	58.2	53.4	52.5	56.2	62.5	52.2	50.6	52.8	56.1	56.2	58.2	60.9	62.1	62.2	65.5	65.8	59.2	
06/02/21	62.4	60.5	61.7	59.2	54.5	51.9	52.1	62.7	53.3	51.6	54.4	57.2	58.7	59.1	62.8	62.7	62.7	66.0	66.8	60.5	
06/03/21	61.2	59.2	60.3	54.8	55.9	52.6	52.6	62.4	50.7	49.2	54.0	56.1	56.9	58.6	61.8	63.1	62.1	65.1	65.9	61.0	
06/04/21	62.6	61.5	64.9	61.2	57.2	52.1	50.8	62.4	52.2	51.7	56.1	58.1	60.9	59.5	67.5	61.7	63.4	67.6	69.5	60.4	
06/05/21	59.9	58.8	60.2	53.8	54.8	50.4	49.1	60.3	53.7	50.9	52.8	54.4	58.7	59.6	61.0	60.1	60.6	64.7	65.6	58.6	
06/06/21	60.3	58.7	59.4	55.4	57.6	54.8	49.6	61.4	54.3	50.4	52.7	56.5	56.4	59.4	60.6	60.7	62.4	64.0	65.5	59.9	
06/07/21	61.9	60.3	61.3	55.1	58.9	46.2	49.6	61.1	54.2	54.4	53.8	57.7	58.4	59.7	64.0	60.4	63.0	65.9	67.0	54.1	
06/08/21	61.0	58.9	60.0	54.9	56.5	51.7	52.6	62.9	51.3	50.4	53.6	56.6	56.9	58.8	60.9	63.1	61.6	64.2	65.3	58.5	
06/09/21	61.8	60.8	61.2	59.3	55.9	51.9	50.3	61.3	52.7	51.1	54.2	57.4	57.5	59.5	62.3	60.8	62.9	65.8	66.8	62.0	
06/10/21	62.6	61.8	63.1	57.6	56.3	55.2	49.0	61.9	53.2	49.2	54.7	57.4	60.2	59.9	64.1	61.6	63.6	67.2	68.0	63.2	
06/11/21	61.0	59.5	60.4	57.6	56.6	54.2	51.8	61.2	50.8	49.8	54.4	55.9	57.1	59.2	61.6	60.6	62.3	65.2	66.5	61.1	
06/12/21	60.7	58.2	59.4	56.1	54.6	49.8	54.9	59.6	52.3	50.1	52.4	54.8	55.6	57.2	60.8	59.1	60.8	64.4	65.3	57.4	
06/13/21	60.5	59.0	59.6	54.7	54.5	47.7	48.2	59.7	49.9	50.2	52.0	54.9	56.5	58.2	61.1	59.0	61.9	64.8	66.0	61.6	
06/14/21	62.4	60.5	62.7	55.5	55.1	52.1	52.2	59.6	54.7	51.7	54.0	57.1	58.7	60.0	63.2	59.3	62.9	66.7	67.7	60.8	
06/15/21	62.3	60.8	62.4	59.4	54.5	53.1	52.5	62.1	63.7	51.4	54.6	56.0	58.4	59.6	63.3	61.5	62.8	66.9	67.9	58.0	
06/16/21	61.3	59.5	60.6	56.2	54.9	53.0	52.2	62.7	54.5	46.5	56.9	56.3	57.3	58.6	62.2	62.0	62.3	65.5	66.5	61.7	
06/17/21	62.8	61.3	62.7	59.5	58.0	54.3	55.0	62.4	54.7	51.9	54.6	56.7	59.4	59.0	64.0	61.5	63.2	67.1	68.1	63.7	
06/18/21	62.1	59.6	61.0	60.0	55.4	53.3	53.4	62.7	54.2	57.9	53.3	55.9	57.2	58.9	62.3	62.2	62.4	65.8	66.8	59.7	
06/19/21	59.0	57.0	58.4	54.4	50.2	52.1	42.7	60.3	52.7	50.1	51.2	53.6	54.6	56.6	59.2	59.8	60.5	63.0	64.4	58.7	
06/20/21	60.6	58.8	59.9	57.1	53.2	50.6	56.0	60.9	55.1	47.1	52.4	55.8	56.1	59.1	60.9	60.3	61.8	64.7	65.9	61.6	
06/21/21	61.8	59.7	60.9	56.5	56.2	52.7	57.2	61.5	50.9	49.5	52.5	55.9	57.2	59.1	62.2	61.2	62.4	65.7	66.9	61.3	
06/22/21	62.2	60.4	62.0	57.2	52.8	50.4	52.8	62.4	53.0	50.4	54.5	57.2	58.1	60.1	62.7	61.8	64.1	66.2	67.5	57.4	
06/23/21	61.0	59.5	60.9	56.7	55.7	52.3	56.0	62.7	54.9	48.6	52.8	56.4	57.1	59.1	62.2	62.3	62.2	65.4	66.2	61.9	
06/24/21	62.5	60.7	61.9	59.0	55.7	52.4	57.5	62.7	55.6	53.1	55.5	58.3	58.3	61.1	62.9	62.5	64.3	66.6	67.6	60.3	
06/25/21	62.4	60.9	62.2	58.5	55.0	50.2	55.3	63.1	58.6	54.2	54.4	57.2	58.5	59.9	63.8	63.0	63.5	66.6	67.7	60.6	
06/26/21	60.1	58.4	59.3	55.6	53.2	47.0	58.1	61.2	52.6	50.6	51.9	54.9	55.7	58.0	60.9	60.7	61.0	65.2	65.5	58.1	
06/27/21	61.4	59.5	61.0	58.6	53.0	49.5	56.4	62.0	50.7	48.9	53.3	55.5	57.1	58.9	61.9	61.1	62.3	65.5	66.8	59.7	
06/28/21	61.6	60.2	61.6	57.7	54.4	51.1	56.2	61.3	55.9	54.7	54.6	56.4	57.9	59.3	62.6	60.5	63.1	66.1	67.2	61.2	
06/29/21	61.1	60.1	61.5	55.3	55.0	52.0	54.9	63.5	52.5	51.0	53.9	55.8	58.2	58.8	62.4	62.4	62.4	65.7	66.8	59.1	
06/30/21	62.7	60.2	61.2	55.4	54.9	52.1	55.2	63.2	53.2	47.6	54.5	56.4	57.6	59.2	62.4	62.5	63.1	66.2	67.1	59.3	
AVERAGE	61.6	59.9	61.3	57.4	55.5	52.1	54.1	61.9	54.8	51.6	53.9	56.4	57.8	59.2	62.6	61.5	62.6	65.8	66.8	60.4	
NO. DAYS	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

**TABLE 4. AVERAGE CNEL VALUES**

Site No.	3rd Quarter 2020	4th Quarter 2020	1st Quarter 2021	2nd Quarter 2021	4 Quarter Average
1	58.0	57.7	58.0	60.4	58.7
2	56.0	55.8	55.7	58.5	56.9
3	57.5	57.0	56.8	59.8	57.9
4	53.2	54.8	55.9	56.0	55.1
5	53.0	55.5	56.1	55.8	55.3
6	51.7	53.4	55.7	52.7	53.6
7	53.5	51.7	55.1	54.5	53.9
9	59.3	58.1	58.0	60.9	59.2
10	49.7	50.6	51.9	53.1	51.5
11	48.9	50.1	51.9	50.6	50.6
12	50.5	51.5	51.5	52.8	51.6
13	54.3	53.3	53.9	55.8	54.4
14	54.4	54.0	53.9	56.5	54.8
15	55.7	55.6	55.2	58.0	56.3
16	58.9	58.6	58.9	61.0	59.5
18	58.6	57.6	57.4	60.4	58.7
19	58.9	58.6	58.1	61.2	59.4
20	62.2	61.9	61.4	64.3	62.6
21	63.1	62.4	62.2	65.3	63.4
22	58.7	57.2	59.5	60.0	59.0

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

AIRCRAFT	AS EMB175	OPERATIONS FROM				4/1/2021	to	4/30/2021	30 DAYS		
		AS B7377	AS B7377	AS A319	AS B7378				AS B7379		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	30	30	2	2	0	0	7	5	75	50	
EVENING	0	0	0	0	0	0	0	3	0	22	
NIGHT	0	0	0	0	0	0	1	0	3	6	
TOTAL	30	30	2	2	0	0	8	8	78	78	
	AS A320	OPERATIONS FROM				4/1/2021	to	4/30/2021	AA CRJ7		
		A21N	A21N	US CRJ9	AA CRJ2				AA CRJ7		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	0	0	0	0	0	0	0	0	85	66	
EVENING	0	0	0	0	0	0	0	0	0	19	
NIGHT	0	0	0	0	0	0	0	0	0	0	
TOTAL	0	0	0	0	0	0	0	0	85	85	
	AA B7378	OPERATIONS FROM				4/1/2021	to	4/30/2021	UA A320		
		WN B38M	WN B38M	WN B7377	WN B7378				UA A320		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	49	29	6	6	438	336	82	62	0	0	
EVENING	0	20	0	0	53	142	3	23	0	0	
NIGHT	0	0	0	0	0	13	0	0	0	0	
TOTAL	49	49	6	6	491	491	85	85	0	0	
	UA A319	OPERATIONS FROM				4/1/2021	to	4/30/2021	UA CRJ7		
		UA B7378	UA B7378	UA EMB175	UA RJ				UA CRJ7		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	0	0	0	0	6	6	13	13	12	12	
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	6	6	13	13	12	12	
	FE A300	OPERATIONS FROM				4/1/2021	to	4/30/2021	DL CRJ		
		UPS B757	UPS B757	UPS A300	DL E175				DL CRJ		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	13	17	0	1	7	16	116	98	0	0	
EVENING	22	1	1	0	21	0	0	16	0	0	
NIGHT	0	17	0	0	5	17	0	2	0	0	
TOTAL	35	35	1	1	33	33	116	116	0	0	
	DL CRJ7	OPERATIONS FROM				4/1/2021	to	4/30/2021	C208		
		DL B7377	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				4/1/2021	to	4/30/2021	A21N		
		B6 A321	B6 A321	B6 A21N	NKS A320				A21N		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	0	0	0	0	0	0	1	1	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	0	0	0	0	0	0	1	1	8	8	
TOTALS										DEP	ARR
										814	626
										56	229
										4	19
										874	874

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

AIRCRAFT	AS EMB175	OPERATIONS FROM				5/1/2021	to	5/31/2021	31 DAYS		
		AS B7377		AS A319					AS B7378		AS B7379
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	
DAY	19	19	2	1	0	0	19	10	61	39	
EVENING	0	0	0	0	0	0	0	6	0	19	
NIGHT	0	0	0	1	0	0	0	3	0	3	
TOTAL	19	19	2	2	0	0	19	19	61	61	
	AS A320	OPERATIONS FROM			5/1/2021	to	5/31/2021				
		A21N									
	DEP	ARR	DEP	ARR	US CRJ9	AA CRJ2	AA CRJ7				
	DAY	20	20	0	0	0	0	0	85	59	
	EVENING	12	12	0	0	0	0	0	1	25	
	NIGHT	0	0	0	0	0	0	0	0	2	
TOTAL	32	32	0	0	0	0	0	0	86	86	
	AA B7378	OPERATIONS FROM			5/1/2021	to	5/31/2021				
		WN B38M									
	DEP	ARR	DEP	ARR	WN B7377	WN B7378	UA A320				
	DAY	56	31	4	4	516	358	52	52	0	0
	EVENING	1	25	2	2	59	178	7	7	0	0
	NIGHT	0	1	0	0	1	40	0	0	0	0
TOTAL	57	57	6	6	576	576	59	59	0	0	
	UA A319	OPERATIONS FROM			5/1/2021	to	5/31/2021				
		UA B7378									
	DEP	ARR	DEP	ARR	UA EMB175	UA RJ	UA CRJ7				
	DAY	0	0	0	0	3	3	1	2	26	26
	EVENING	0	0	0	0	0	0	1	0	0	0
	NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	3	3	2	2	26	26	
	FE A300	OPERATIONS FROM			5/1/2021	to	5/31/2021				
		UPS B757									
	DEP	ARR	DEP	ARR	UPS A300	DL E175	DL CRJ				
	DAY	12	18	0	0	7	17	123	94	1	1
	EVENING	20	0	0	0	20	0	0	27	0	0
	NIGHT	2	16	0	0	6	16	0	2	0	0
TOTAL	34	34	0	0	33	33	123	123	1	1	
	DL CRJ7	OPERATIONS FROM			5/1/2021	to	5/31/2021				
		DL B7377									
	DEP	ARR	DEP	ARR	DL B738	B6 A320	C208				
	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			5/1/2021	to	5/31/2021				
		B6 A321									
	DEP	ARR	DEP	ARR	B6 A21N	NKS A320	A21N				
	DAY	0	0	0	0	0	0	7	7	2	2
	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	7	7	2	2	
									TOTALS		
									DEP	ARR	
									873	633	
									83	274	
									1	50	
									957	957	

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

AIRCRAFT	AS EMB175	OPERATIONS FROM				6/1/2021	to	6/30/2021	30 DAYS	
		AS B7377		AS A319					AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	30	30	0	0	0	0	27	21	31	8
EVENING	0	0	0	0	0	0	1	7	0	10
NIGHT	0	0	0	0	0	0	0	0	0	13
TOTAL	30	30	0	0	0	0	28	28	31	31
	AS A320	OPERATIONS FROM				6/1/2021	to	6/30/2021	AA CRJ7	
		A21N		US CRJ9					AA CRJ2	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	43	36	0	1	26	25	0	0	26	25
EVENING	27	33	1	0	0	1	0	0	0	1
NIGHT	2	3	0	0	0	0	0	0	0	0
TOTAL	72	72	1	1	26	26	0	0	26	26
	AA B7378	OPERATIONS FROM				6/1/2021	to	6/30/2021	UA A320	
		WN B38M		WN B7377					WN B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	57	28	44	48	548	400	197	171	0	0
EVENING	0	26	14	9	77	157	60	69	0	0
NIGHT	0	3	1	2	8	76	5	22	0	0
TOTAL	57	57	59	59	633	633	262	262	0	0
	UA A319	OPERATIONS FROM				6/1/2021	to	6/30/2021	UA CRJ7	
		UA B7378		UA EMB175					UA RJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	27	28	0	0	2	2
EVENING	0	0	0	0	1	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	28	28	0	0	2	2
	FE A300	OPERATIONS FROM				6/1/2021	to	6/30/2021	DL CRJ	
		UPS B757		UPS A300					DL E175	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	13	17	0	1	6	16	120	110	0	0
EVENING	21	0	1	0	21	0	20	27	0	0
NIGHT	0	17	0	0	6	17	2	5	0	0
TOTAL	34	34	1	1	33	33	142	142	0	0
	DL CRJ7	OPERATIONS FROM				6/1/2021	to	6/30/2021	C208	
		DL B7377		DL B738					B6 A320	
	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				6/1/2021	to	6/30/2021	A21N	
		B6 A321		B6 A21N					NKS A320	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	1	0	4	4	10	10
EVENING	0	0	0	0	9	18	0	0	0	0
NIGHT	0	0	0	0	11	3	0	0	0	0
TOTAL	0	0	0	0	21	21	4	4	10	10
									TOTALS	
									DEP	ARR
									1073	837
									190	331
									27	122
									1290	1290



**Table 5. (continued)**PERIOD TOTALS FOR  
AIR CARRIERS AND COMMUTERS

## AIR CARRIERS

	<u>DEP</u>	<u>ARR</u>
DAY	13767	10800
EVE	1976	3896
NIGHT	224	1272
TOTAL	15967	15967

## COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	1711	1467
EVE	90	303
NIGHT	9	39
TOTAL	1809	1809

## AIR CARRIERS AND COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	15478	12267
EVE	2066	4199
NIGHT	233	1311
TOTAL	17777	17777

## 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 391.0 and 161.4 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 1.32 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 3 single family residential parcels, totaling approximately 0.51 acres of the incompatible land use area within the 65 dB contour. Owners of these parcels have 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**

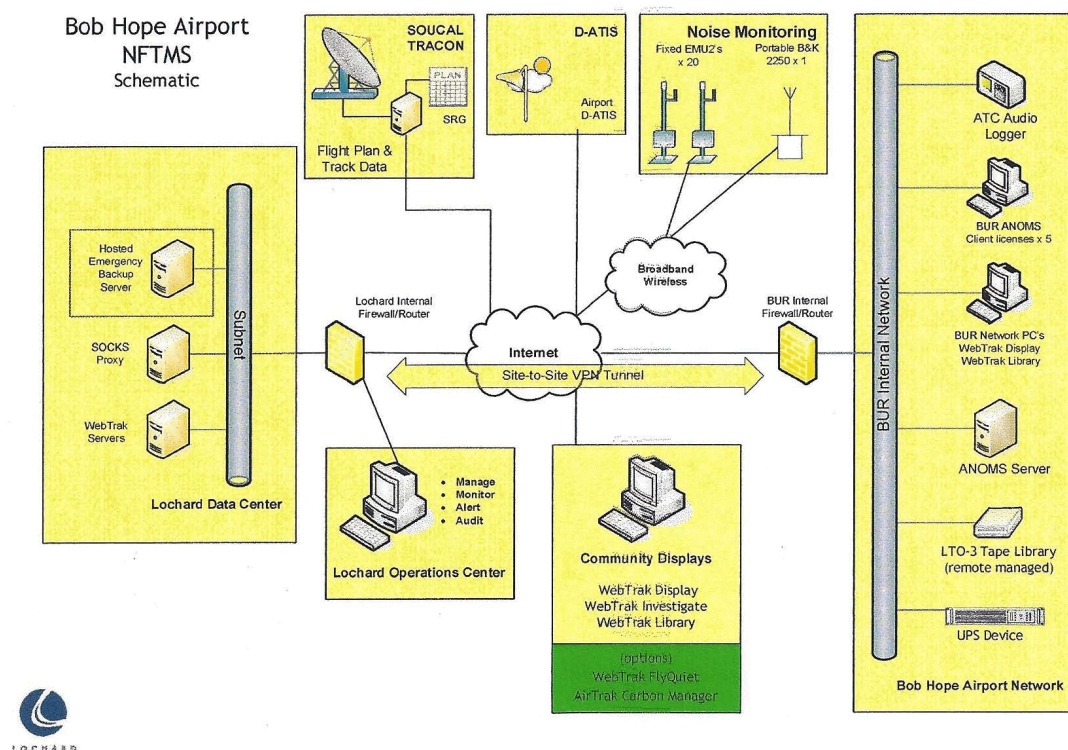
## **APPENDIX A**

### **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