



AAAI Report 1572  
AAAI Project 88018

# QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT FIRST QUARTER 2020

JULY 2020

Prepared for:



## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
I. INTRODUCTION .....	1
II. NOISE MEASUREMENTS .....	4
A. Sites .....	4
B. Noise Measurement Equipment .....	4
C. Noise Data .....	4
D. Operational Data .....	6
III. MEASURED NOISE DATA .....	6
IV. SCHEDULED AIRLINE AND AIR TAXI OPERATIONS .....	6
V. CNEL CONTOUR DEVELOPMENT .....	6
VI. INCOMPATIBLE LAND USE .....	15
REFERENCES .....	16

APPENDIX A - NOISE MONITOR INSTRUMENTATION

APPENDIX B - CALIBRATION

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. CNEL VALUES FOR JANUARY 2020 .....	7
2. CNEL VALUES FOR FEBRUARY 2020 .....	8
3. CNEL VALUES FOR MARCH 2020 .....	9
4. AVERAGE CNEL VALUES .....	10
5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI FLIGHTS .....	11

**LIST OF FIGURES**

<b><u>Figure</u></b>	<b><u>Page</u></b>
1. CNEL 70 CONTOUR FOR HOLLYWOOD BURBANK AIRPORT -FIRST QUARTER 2020 .....	2
2. CNEL 65 CONTOUR FOR HOLLYWOOD BURBANK AIRPORT -FIRST QUARTER 2020 .....	3
3. NOISE MONITOR LOCATIONS .....	5

## QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT FIRST QUARTER 2020

### 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.

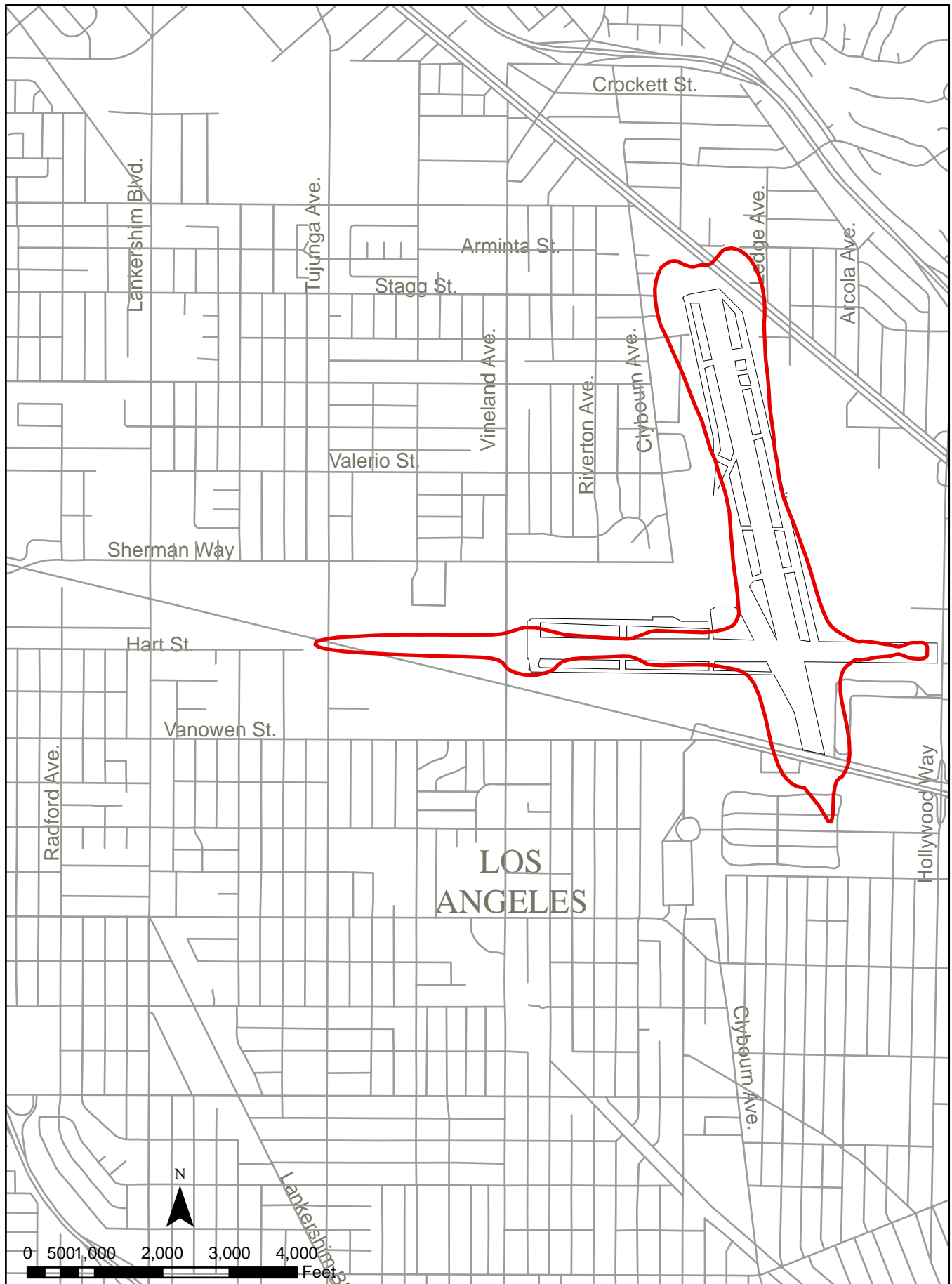
A permanent noise monitoring system became operational in April 1980 and, with brief interruption for system expansion, maintenance, and program changes, has been operational since that time. Of the original nine noise monitor sites, eight have remained unchanged since 1980. The monitor at site 8 was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

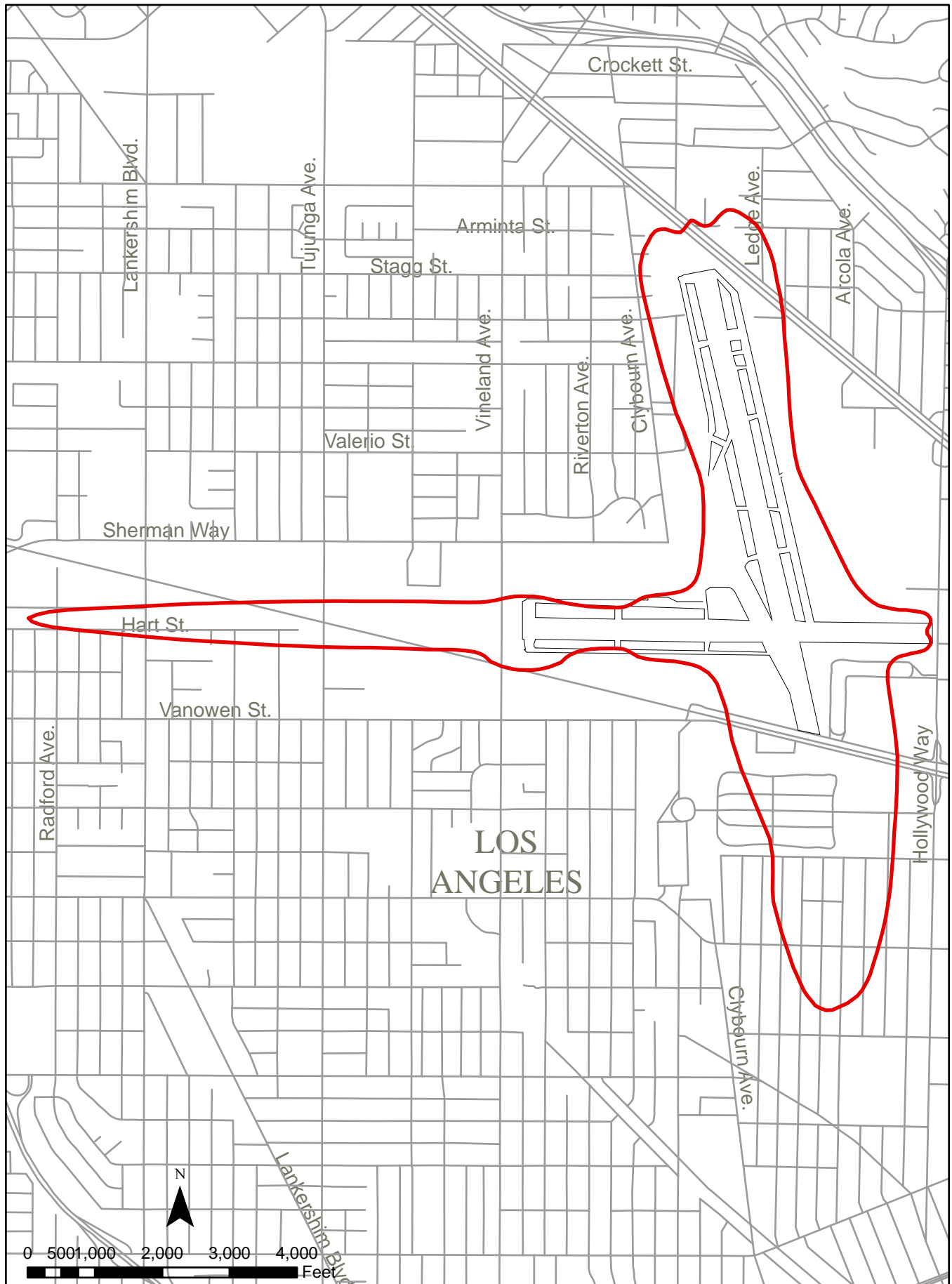
This report describes the data acquired by the monitoring system during the First quarter of 2020. Noise impact boundaries for 65 dB and 70 dB are shown based on these measurements and measurements obtained during the first, second, and third quarter of 2019 reported in References 3, 4 and 5. Figure 1 shows the 70 dB contour and Figure 2 shows the 65 dB contour, based on the measured noise data.

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



BURBANK AIRPORT - 70 CNEL CONTOUR for 1st QUARTER 2020



BURBANK AIRPORT - 65 CNEL CONTOUR for 1st QUARTER 2020

## II. NOISE MEASUREMENTS

### A. Sites

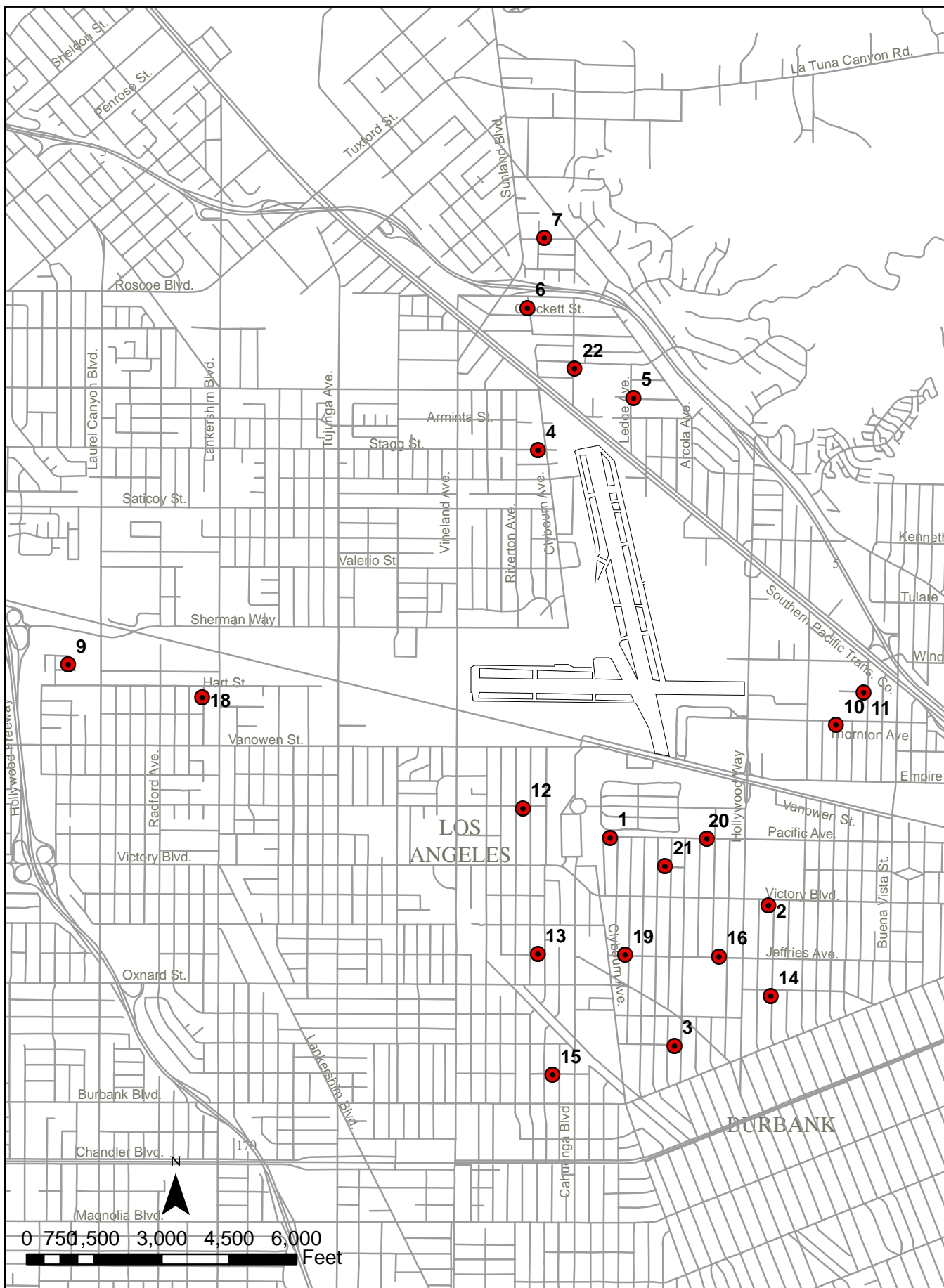
Aircraft noise levels were monitored at 15 locations prior to February, 1997. Two sites were added in February 1997, and equipment at one site west of the airport was moved to a new location. In July 2003, the monitor station at site 9 was moved 105 feet further west to accommodate new construction at 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**

Departure and arrival schedules are provided by the airlines. In addition, operations of air carrier, general aviation and rotary-wing aircraft are determined from the airport's 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 scheduled 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 2020

## RMS NUMBER

Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
01/01/20	62.7		62.4	58.7	57.2	47.0	51.2	62.3	50.6	47.2	54.8	58.2	58.6	60.9	63.2	61.3	64.1	66.4	67.9	54.7
01/02/20	62.7		62.0	62.1	61.5	59.4	57.6	63.0	54.4	52.5	56.0	58.1	58.3	60.1	63.3	62.3	63.4	66.4	67.7	61.6
01/03/20	62.6		62.2	58.2	62.0	56.8	55.8	62.5	55.0	54.9	55.3	57.7	58.7	60.0	63.4	61.6	63.3	66.6	67.6	58.9
01/04/20	60.1		60.3	55.8	56.4	49.5	51.7	60.6	51.9	51.0	54.4	55.0	57.9	57.9	61.6	59.5	61.2	63.9	65.3	56.3
01/05/20	61.8		61.2	58.8	54.9	52.8	51.5	62.8	55.1	55.6	56.2	56.5	57.5	59.4	62.8	61.7	62.5	66.2	67.2	51.7
01/06/20	61.3		60.7	58.9	56.9	55.0	52.5	61.1	49.3	52.1	55.1	60.3	57.0	58.9	63.0	59.9	62.5	65.5	66.6	55.9
01/07/20	60.3		60.3	58.3	57.7	53.8	53.0	61.2	54.0	53.7	53.0	55.8	56.4	58.3	61.4	60.8	61.4	65.0	65.9	57.3
01/08/20	63.0		61.8	57.1	60.1	53.4	54.4	63.2	55.3	52.3	55.8	58.7	58.1	61.0	63.0	62.5	63.8	66.4	67.6	59.9
01/09/20	63.7		63.3	60.2	62.0	62.3	59.8	62.4	53.2	52.4	56.8	58.4	59.7	60.4	65.4	61.8	63.6	67.6	68.4	65.0
01/10/20	62.9		61.6	57.1	56.1	55.3	55.9	62.9	53.1	52.8	56.0	58.4	58.6	60.6	62.8	62.3	63.4	66.1	67.2	60.2
01/11/20	59.8		59.2	54.6	56.4	50.1	52.5	60.0	51.6	50.6	54.0	56.1	55.5	59.1	60.2	59.2	61.3	63.5	65.0	56.1
01/12/20	61.5		60.9	56.4	55.8	51.1	56.0	62.7	50.1	48.4	54.2	58.4	57.0	61.1	62.1	62.2	63.4	65.6	67.1	58.8
01/13/20	63.6		62.6	57.3	61.9	52.5	56.8	62.2	53.4	53.3	57.7	59.5	58.7	61.6	63.5	61.6	64.6	66.8	68.1	60.2
01/14/20	62.2		61.6	56.1	57.1	56.5	57.7	63.1	52.7	52.7	54.9	59.4	58.1	60.7	62.3	62.4	63.4	65.5	67.0	65.4
01/15/20	61.8		61.5	57.8	57.8	55.5	54.2	64.0	52.0	50.3	55.4	58.3	57.6	60.8	62.5	63.0	63.5	65.8	67.1	60.4
01/16/20	63.3		61.6	59.8	58.1	53.0	52.4	64.8	57.1	51.1	55.6	61.1	57.9	61.7	62.6	64.4	64.5	66.2	67.6	55.5
01/17/20	63.5		62.5	57.0	57.4	55.7	53.0	63.8	52.9	51.5	56.6	58.7	59.3	61.1	63.8	63.2	64.2	66.9	68.2	58.0
01/18/20	59.5		58.7	52.9	54.0	54.5	55.1	58.9	55.2	57.6	53.9	55.0	54.9	57.1	60.0	59.0	60.0	63.5	64.5	59.1
01/19/20	60.4		59.9	57.4	55.1	48.6	46.3	61.1	49.1	50.5	54.2	55.9	56.1	58.7	61.3	61.0	61.7	64.8	66.0	50.5
01/20/20	62.6		61.9	57.1	57.2	49.1	54.3	63.0	52.3	49.2	54.6	59.2	58.4	61.3	63.0	63.1	64.4	66.5	68.2	54.5
01/21/20	62.8		62.4	54.7	56.3	50.2	54.2	63.8	53.4	50.4	55.5	59.6	59.0	65.1	63.4	63.0	64.0	66.9	67.9	54.9
01/22/20	62.5		62.0	56.7	57.8	51.4	54.1	63.2	49.9	51.6	55.0	58.9	58.2	61.1	62.9	62.6	64.0	66.4	67.8	60.0
01/23/20	62.5		62.7	60.3	63.2	56.6	55.8	63.7	53.6	54.1	58.1	58.2	58.9	61.0	63.7	62.8	64.1	66.7	67.9	59.3
01/24/20	62.2		62.5	60.1	60.0	54.9	56.3	61.8	51.5	53.5	55.4	56.6	58.5	60.2	64.0	61.1	63.0	66.3	67.5	59.8
01/25/20	59.2		59.3	57.9	54.7	46.8	50.6	59.7	52.3	49.3	51.9	54.7	56.1	58.1	60.3	59.3	60.8	63.6	64.9	57.5
01/26/20	61.5		61.4	56.0	58.6	59.2	56.6	61.5	51.0	51.0	54.1	56.6	57.8	59.8	63.8	60.9	62.7	65.9	67.2	61.3
01/27/20	60.4		60.0	61.0	62.3	63.7	60.4	59.2	55.1	53.4	53.5	53.9	57.5	56.6	64.4	59.0	59.7	64.6	65.6	65.4
01/28/20	61.0		59.9	60.6	61.9	63.9	60.5	59.3	51.3	55.7	55.4	62.0	57.9	57.6	63.4	59.0	61.5	65.3	66.1	66.9
01/29/20	59.9		59.0	61.0	62.5	63.4	59.0	59.1	49.9	51.4	54.0	53.2	56.4	55.9	63.0	58.3	58.8	63.4	64.3	64.3
01/30/20	61.9		61.3	60.4	60.5	53.5	54.5	62.0	54.4	56.0	54.4	57.8	57.8	59.9	62.5	61.9	63.1	65.9	67.0	57.8
01/31/20	62.2		61.2	60.4	59.3	55.7	55.5	62.0	54.9	52.5	56.0	57.3	57.8	59.6	62.4	60.7	62.7	66.0	67.1	57.4
AVERAGE	62.0		61.4	58.6	59.3	57.2	55.8	62.2	53.2	52.8	55.3	58.1	57.9	60.2	62.9	61.6	63.0	65.8	67.0	60.6
NO. DAYS	31	0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

TABLE 2. CNEL VALUES FOR FEBRUARY 2020

## RMS NUMBER

Date/Time	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
02/01/20	58.4		58.7	55.5	57.7	53.7	53.5	58.6	50.4	50.7	52.8	53.5	55.3	56.8	60.2	57.8	59.8	63.3	64.4	57.6
02/02/20	61.7		60.9	58.4	58.2	57.3	54.5	61.4	54.7	54.8	54.2	57.0	57.2	59.8	62.7	60.9	63.0	65.6	67.0	59.8
02/03/20	57.8		55.0	62.3	63.8	65.3	61.0	49.4	50.0	51.5	51.5	48.9	53.6	43.2	62.9	50.0	51.4	60.7	61.4	66.7
02/04/20	56.6		52.3	60.2	61.1	62.8	59.4	59.9	44.9	50.8	48.1	52.3	51.3	51.8	57.7	59.5	54.3	57.6	59.5	65.8
02/05/20	61.2		60.5	56.8	56.5	52.7	54.4	61.6	49.6	52.1	55.1	57.7	56.9	59.3	61.3	60.7	62.1	64.7	65.9	59.9
02/06/20	62.6		62.0	56.4	56.3	52.4	55.1	63.1	53.0	51.4	58.7	59.4	67.0	60.7	63.1	62.6	64.0	66.4	67.5	57.7
02/07/20	62.6		62.6	57.3	57.9	53.3	55.7	63.5	51.4	51.5	55.1	58.2	58.8	61.3	63.3	62.7	64.1	66.6	68.0	59.2
02/08/20	59.9		59.2	53.3	55.1	51.2	53.2	60.2	51.4	59.2	52.1	56.0	55.4	58.1	60.2	59.2	60.6	63.7	64.6	55.8
02/09/20	62.5		61.1	61.0	58.5	57.7	53.4	62.6	51.9	49.7	55.5	58.0	57.0	60.4	62.0	62.1	63.3	65.6	67.2	58.2
02/10/20	58.0		49.6	62.8	65.1	66.8	63.1	61.7	58.6	54.0	54.6	49.4	51.1	45.4	56.3	60.6	49.9	58.1	56.5	68.1
02/11/20	60.6		59.0	60.9	61.9	61.9	58.9	61.7	49.7	51.4	53.8	57.0	55.0	58.0	60.2	61.1	61.1	63.3	64.6	64.3
02/12/20	62.6		62.7	58.0	60.4	52.6	56.8	62.8	52.6	53.0	55.4	58.0	59.5	60.2	63.7	61.7	63.8	67.1	67.9	60.1
02/13/20	63.5		63.9	57.6	58.0	53.6	55.2	63.5	53.7	51.6	56.4	59.5	59.9	62.1	64.9	62.5	65.0	67.8	69.1	58.7
02/14/20	62.3		62.1	56.6	57.3	55.1	55.7	63.0	51.6	50.7	53.8	58.4	58.4	61.2	63.1	62.0	64.1	66.5	67.8	58.5
02/15/20	59.6		58.7	52.8	53.1	50.0	52.5	60.0	48.7	50.1	51.2	55.4	54.9	57.9	59.8	59.3	61.1	63.4	64.9	55.8
02/16/20	61.2		60.3	56.2	55.2	48.1	60.0	62.6	48.8	49.6	53.4	57.2	56.5	59.8	61.4	61.2	62.8	65.1	66.4	58.7
02/17/20	63.6		63.0	61.6	58.6	53.8	55.4	63.6	53.6	51.5	54.5	58.9	59.4	61.9	64.1	61.9	64.9	67.3	68.8	59.6
02/18/20	62.0		61.7	59.6	57.9	57.4	57.7	63.5	51.9	52.2	51.4	58.3	58.3	60.3	62.4	63.2	63.4	65.5	67.0	62.4
02/19/20	62.4		62.4	59.1	57.0	53.3	55.8	63.7	61.0	52.6	53.5	58.6	58.5	60.9	63.5	63.1	63.7	66.5	67.7	59.3
02/20/20	63.0		63.4	58.3	59.5	53.7	55.5	62.7	54.2	51.2	54.9	58.6	59.6	61.5	64.5	62.0	64.4	67.5	68.8	58.4
02/21/20	62.7		62.1	60.3	58.5	52.6	57.1	63.8	54.5	57.7	52.2	58.9	58.2	60.9	62.9	62.7	64.0	66.3	67.7	60.5
02/22/20	61.1		61.0	53.7	55.9	43.5	50.8	60.1	51.7	55.0	47.0	57.4	57.5	60.2	62.2	59.5	63.2	65.5	66.8	55.4
02/23/20	62.7		63.3	55.4	57.3	48.3	53.6	62.2	51.8	50.8	52.4	58.5	60.2	61.4	64.1	62.4	64.2	67.1	68.3	58.7
02/24/20	62.1		62.2	54.6	54.9	53.7	54.7	62.3	51.5	53.4	50.9	57.3	58.3	60.6	63.3	61.3	63.7	66.6	67.8	59.3
02/25/20	60.6		60.5	59.3	59.6	54.3	57.0	61.4	51.0	49.3	53.0	57.4	56.7	58.8	61.6	60.7	61.7	65.0	66.0	58.2
02/26/20	60.2		60.0	57.7	56.4	52.2	51.9	61.2	51.0	50.1	53.1	56.1	55.8	58.7	61.0	60.9	61.6	64.4	65.5	55.3
02/27/20	61.9		61.2	60.2	56.7	52.7	52.1	61.8	54.2	52.6	55.0	57.8	57.6	59.6	62.4	62.1	62.8	65.9	67.0	56.7
02/28/20	61.0		59.3	55.3	54.6	52.3	52.8	61.8	51.5	49.6	56.0	55.6	56.5	57.8	60.7	61.1	61.0	64.6	65.5	57.0
02/29/20	60.0		58.7	55.0	56.0	49.0	53.1	60.2	51.9	50.4	51.9	56.0	55.5	58.2	60.1	59.2	61.1	63.6	64.9	55.5
AVERAGE	61.5		61.0	58.6	58.8	57.7	56.6	62.0	53.3	52.8	54.0	57.3	58.5	59.6	62.3	61.3	62.7	65.4	66.6	60.9
NO. DAYS	29	0	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29

TABLE 3. CNEL VALUES FOR MARCH 2020

Date	RMS NUMBER																			
	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
03/01/20	61.3		60.0	56.8	56.3	48.5	49.1	60.1	48.2	44.4	53.2	58.4	56.1	59.6	60.9	59.3	62.3	64.3	65.8	52.9
03/02/20	55.1		51.7	62.7	64.0	66.2	62.9	61.3	46.3	49.8	52.3	48.8	48.0	43.7	58.4	61.3	50.7	58.0	57.5	66.6
03/03/20	60.6		59.3	57.3	57.0	56.9	55.0	61.3	49.8	50.8	53.6	58.1	56.7	58.8	60.8	61.3	61.8	64.0	65.5	59.6
03/04/20	62.0		61.2	57.0	56.3	54.6	58.4	63.7	53.1	50.1	55.0	58.3	68.6	60.4	62.1	62.4	63.6	65.7	66.9	62.8
03/05/20	61.4		62.0	52.6	55.7	52.8	57.6	63.3	52.8	51.9	53.3	56.8	64.8	60.0	62.9	62.7	63.0	66.1	67.2	60.5
03/06/20	62.7		61.5	56.4	55.5	52.0	55.6	63.5	53.6	52.9	54.0	58.2	61.3	60.4	62.8	62.9	63.6	66.2	67.4	59.1
03/07/20	59.9		58.9	55.5	53.8	48.3	48.1	60.1	48.5	45.4	52.4	56.1	57.8	58.4	60.3	59.4	61.4	63.4	64.8	53.3
03/08/20	61.9		60.9	51.9	54.8	48.2	55.6	63.2	50.2	51.2	54.0	58.8	59.3	60.2	61.8	62.1	63.2	65.3	66.6	57.0
03/09/20	61.9		60.3	56.2	53.6	48.0	52.6	62.4	49.2	47.6	53.6	58.7	70.4	59.9	61.1	61.6	62.7	64.9	66.2	57.2
03/10/20	63.5		60.0	61.9	58.3	49.6	50.6	64.6	57.8	50.2	55.3	60.6	56.6	60.6	61.1	63.9	63.5	64.9	66.4	55.2
03/11/20	61.7		60.9	55.7	55.5	47.5	51.4	63.8	52.3	50.1	53.8	58.5	57.4	60.5	61.7	63.0	63.2	65.1	66.5	56.0
03/12/20	64.0		62.1	61.2	61.8	63.0	59.5	64.6	57.0	54.4	57.2	59.8	58.8	61.4	63.2	63.9	64.3	66.7	67.7	64.6
03/13/20	63.1		61.4	59.0	56.0	47.2	50.0	64.5	53.0	50.5	55.3	60.2	58.1	61.7	62.5	64.1	64.5	66.2	67.5	49.7
03/14/20	60.9		58.5	58.0	53.7	47.4	49.2	61.2	54.4	47.3	52.8	58.1	55.5	58.9	59.6	60.8	61.9	63.2	64.9	53.4
03/15/20	61.9		60.1	55.6	56.2	42.3	47.2	61.5	50.6	51.0	53.9	59.3	56.7	60.0	60.9	60.8	62.8	64.8	66.1	48.8
03/16/20	64.0		59.7	61.2	58.4	52.5	52.7	63.4	54.0	52.7	56.4	61.2	57.0	60.3	60.8	62.2	63.3	64.5	65.8	54.9
03/17/20	61.4		60.0	55.8	57.4	57.4	54.5	61.9	49.9	51.4	54.3	58.9	57.9	58.7	61.5	61.8	61.5	64.1	65.1	59.6
03/18/20	59.7		58.0	57.3	59.2	60.0	59.1	61.3	52.2	52.6	56.3	58.2	61.9	56.9	60.5	60.5	59.7	62.5	63.6	62.9
03/19/20	63.1		59.8	56.9	54.7	51.9	50.2	61.8	53.8	52.7	55.0	63.6	57.5	59.3	61.5	60.9	62.5	64.7	65.8	55.9
03/20/20	62.8		59.0	53.0	55.9	49.3	47.5	62.2	50.9	49.8	54.7	59.6	56.0	59.0	60.1	61.3	61.7	63.9	65.0	51.1
03/21/20	57.1		54.7	46.6	49.1	46.2	46.6	57.4	48.5	51.6	49.7	54.5	51.1	55.0	55.3	56.7	57.7	59.0	60.5	49.5
03/22/20	61.2		56.0	53.0	50.0	49.2	49.2	61.2	48.9	42.9	54.5	58.7	52.8	57.8	56.7	60.3	59.7	60.9	62.3	54.1
03/23/20	60.4		56.9	51.7	53.4	51.2	48.4	60.0	47.8	47.4	52.9	58.0	53.5	57.4	57.5	59.1	60.0	61.3	62.6	56.3
03/24/20	60.6		57.3	50.2	52.2	46.5	49.5	61.3	52.3	49.6	52.7	57.7	54.2	57.5	57.8	60.9	59.6	61.3	62.6	50.7
03/25/20	59.7		57.3	52.3	54.0	51.0	49.6	60.4	48.7	46.9	52.1	56.9	50.8	56.7	58.8	59.4	59.1	61.5	62.4	55.7
03/26/20	57.2		55.5	54.9	56.6	57.0	53.9	59.1	57.4	49.3	57.7	53.9	54.0	53.2	59.7	58.5	56.5	60.3	61.5	59.6
03/27/20	58.1		54.8	58.2	58.8	61.7	58.9	58.7	49.5	51.4	53.2	54.0	53.5	53.6	57.1	58.3	56.2	59.9	60.4	63.3
03/28/20	54.8		52.6	45.3	48.0	48.6	49.2	54.7	44.7	44.3	47.1	51.6	49.6	52.2	55.0	53.9	54.9	57.1	58.2	58.2
03/29/20	54.8		53.0	48.9	52.0	52.2	51.9	54.0	40.6	44.4	48.5	52.2	51.4	52.0	57.6	54.9	54.7	57.6	59.2	56.5
03/30/20	59.0		56.7	51.7	55.7	47.6	50.5	58.1	46.3	46.2	50.9	56.0	55.8	56.5	57.0	57.6	59.3	60.9	62.4	54.9
03/31/20	58.4		57.0	50.6	51.7	53.1	53.1	59.7	48.9	54.2	50.7	55.8	53.9	55.8	57.3	59.4	58.4	60.6	61.9	56.8
AVERAGE	61.1		59.1	56.8	56.7	56.1	54.8	61.7	52.1	50.4	54.0	58.3	60.4	58.6	60.3	61.1	61.5	63.6	64.8	59.0
NO. DAYS	31	0	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31

**TABLE 4. AVERAGE CNEL VALUES**

Site No.	2nd Quarter 2019	3rd Quarter 2019	4th Quarter 2019	1st Quarter 2020	4 Quarter Average
1	62.4	62.1	62.3	61.5	62.1
2	60.5	60.3	60.2	-----	60.4
3	61.8	61.7	61.7	60.6	61.5
4	57.7	57.1	59.2	58.0	58.1
5	58.3	56.3	59.3	58.4	58.2
6	56.5	53.9	57.8	57.0	56.6
7	57.1	56.1	56.5	55.8	56.4
9	63.2	62.9	62.4	62.0	62.7
10	54.1	53.3	53.4	52.9	53.5
11	53.3	52.7	52.7	52.1	52.7
12	54.5	53.6	55.0	54.4	54.4
13	58.1	57.3	57.6	57.9	57.8
14	58.6	58.6	58.2	59.1	58.6
15	60.5	60.2	60.0	59.5	60.1
16	63.4	62.8	63.2	61.9	62.9
18	62.5	62.4	61.7	61.3	62.0
19	63.6	63.3	63.1	62.4	63.1
20	66.2	66.3	66.3	65.0	66.0
21	67.7	67.7	67.5	66.2	67.3
22	62.1	61.5	61.4	60.2	61.3

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI  
FLIGHTS FOR THE FIRST QUARTER 2020**

AIRCRAFT	SCHEDULE IN EFFECT FROM 1/1/2020 to 1/31/2020									
	AS EMB175	AS B7379		AS A320		A21N		31 DAYS US CRJ9		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	9	11	15	0	0	26	31
EVENING	7	7	0	3	5	1	0	0	6	0
NIGHT	0	0	0	1	0	0	0	0	0	1
TOTAL	7	7	14	14	17	17	0	0	32	32

	SCHEDULE IN EFFECT FROM 1/1/2020 to 1/31/2020									
	AA B7378	WN B7377		WN B7378		UA A319		UA EMB175		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	14	7	320	299	8	8	5	5	1	1
EVENING	0	7	75	93	6	7	0	0	0	0
NIGHT	0	0	3	7	0	0	0	0	0	0
TOTAL	14	14	398	398	14	14	5	5	2	2

	SCHEDULE IN EFFECT FROM 1/1/2020 to 1/31/2020									
	UA RJ	FE A300		UPS A300		DL E175		DL B7377		
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	27	26	0	5	2	5	26	20	7	7
EVENING	7	8	9	0	5	0	0	6	0	0
NIGHT	0	0	0	4	2	4	0	0	0	0
TOTAL	34	34	9	9	9	9	27	27	7	7

	SCHEDULE IN EFFECT FROM 1/1/2020 to 1/31/2020									
	B6 A320	C208		NKS A319		TOTALS				
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	1	6	0	0	13	13	476	457		
EVENING	6	3	0	0	0	0	127	136		
NIGHT	2	0	0	0	0	0	8	18		
TOTAL	9	9	0	0	13	13	611	611		

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI  
FLIGHTS FOR THE FIRST QUARTER 2020**

AIRCRAFT	SCHEDULE IN EFFECT FROM 2/1/2020 to 2/29/2020 29 DAYS									
	AS EMB175	AS B7379	AS A320	A21N	US CRJ9					
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	8	7	11	0	0	26	28
EVENING	7	7	0	5	5	1	0	0	6	1
NIGHT	0	0	0	0	0	0	0	0	0	3
TOTAL	7	7	14	14	12	12	0	0	32	32

	SCHEDULE IN EFFECT FROM 2/1/2020 to 2/29/2020									
	AA B7378	WN B7377	WN B7378	UA A319	UA EMB175					
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	15	8	315	297	6	5	6	2	5	5
EVENING	0	7	76	93	6	7	0	3	0	0
NIGHT	0	0	2	3	0	0	0	0	0	0
TOTAL	15	15	393	393	12	12	6	6	5	5

	SCHEDULE IN EFFECT FROM 2/1/2020 to 2/29/2020									
	UA RJ	FE A300	UPS A300	DL E175	DL B7377					
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	24	25	0	5	3	4	26	20	7	7
EVENING	7	7	9	0	5	0	0	6	0	0
NIGHT	1	0	0	4	1	4	0	1	0	0
TOTAL	33	33	9	9	9	9	26	26	7	7

	SCHEDULE IN EFFECT FROM 2/1/2020 to 2/29/2020										TOTALS	
	B6 A320	C208	NKS A319	B6 A321	B6 A21N						DEP	ARR
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR		
DAY	1	7	0	0	13	9	5	4	0	0	473	445
EVENING	4	0	0	0	0	4	5	5	0	0	130	147
NIGHT	2	0	0	0	0	0	0	1	0	0	7	18
TOTAL	7	7	0	0	13	13	10	10	0	0	610	610

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI  
FLIGHTS FOR THE FIRST QUARTER 2020**

AIRCRAFT	SCHEDULE IN EFFECT FROM					3/1/2020	to	3/31/2020	31 DAYS		
	AS EMB175	AS B7379			AS A320		A21N		US CRJ9		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	2	2	7	4	8	8		0	0	19	21
EVENING	4	4	0	3	4	3		0	0	5	2
NIGHT	0	0	0	1	0	1		0	0	0	0
TOTAL	7	7	7	7	11	11		0	0	23	23

	SCHEDULE IN EFFECT FROM					3/1/2020	to	3/31/2020	31 DAYS		
	AA B7378	WN B7377			WN B7378		UA A319		UA EMB175		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	12	5	243	226	9	5		1	0	10	2
EVENING	0	7	64	77	4	8		0	1	0	8
NIGHT	0	0	1	5	0	1		0	0	0	0
TOTAL	12	12	308	308	13	13		1	1	10	10

	SCHEDULE IN EFFECT FROM					3/1/2020	to	3/31/2020	31 DAYS		
	UA RJ	FE A300			UPS A300		DL E175		DL B7377		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	24	24	0	5	2	5		26	20	5	5
EVENING	5	5	9	0	5	0		1	7	0	0
NIGHT	0	0	0	4	2	4		0	0	0	0
TOTAL	29	29	9	9	9	9		27	27	5	5

	SCHEDULE IN EFFECT FROM					3/1/2020	to	3/31/2020	31 DAYS			TOTALS	
	B6 A320	C208			NKS A319		B6 A321		B6 A21N			DEP	ARR
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR		
DAY	1	6	0	0	6	4		1	1	4	2	382	346
EVENING	5	1	0	0	1	4		1	1	2	3	109	133
NIGHT	2	0	0	0	0	0		0	0	0	0	5	17
TOTAL	8	8	0	0	8	8		2	2	6	6	496	496



**Table 5. (continued)**

PERIOD TOTALS FOR  
AIR CARRIERS AND COMMUTERS

AIR CARRIERS

	<u>DEP</u>	<u>ARR</u>
DAY	5636	5127
EVE	1509	1833
NIGHT	67	252
TOTAL	7212	7212

COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	327	330
EVE	84	85
NIGHT	6	2
TOTAL	417	417

AIR CARRIERS AND COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	5963	5457
EVE	1593	1918
NIGHT	73	254
TOTAL	7629	7629

## 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 709.6 and 280.9 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 14.23 acres within the 65 dB contour of which 0.37 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 easements, through its ongoing residential sound insulation program, to 365 parcels of land. Those 365 parcels total 55.62 acres. One of the 365 parcels is 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. It should be noted that only 7 parcels, however, totaling .89 acres, remain within the Airport's 65 dB CNEL contour. The Airport has a "Baker" easement for the 7 parcels but has not yet also obtained an easement in return for the parcels' participation in the Airport's sound insulation program.

It should be noted that the Airport Authority has made repeated attempts over the past several years to acoustically treat and obtain avigation easements at 92 single family residential parcels, totaling approximately 14.23 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 properties with major building code deficiencies that prevent them from participating.

The estimated numbers of incompatible residences are 168 within the 65 dB contour, of which 2 are also within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 454 and 5, 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 2019", AAAI Report 1551.
4. "Quarterly Noise Monitoring at Hollywood Burbank Airport, Third Quarter 2019", AAAI Report 1552.
5. "Quarterly Noise Monitoring at Hollywood Burbank Airport, Fourth Quarter 2019", AAAI Report 1553.

**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.

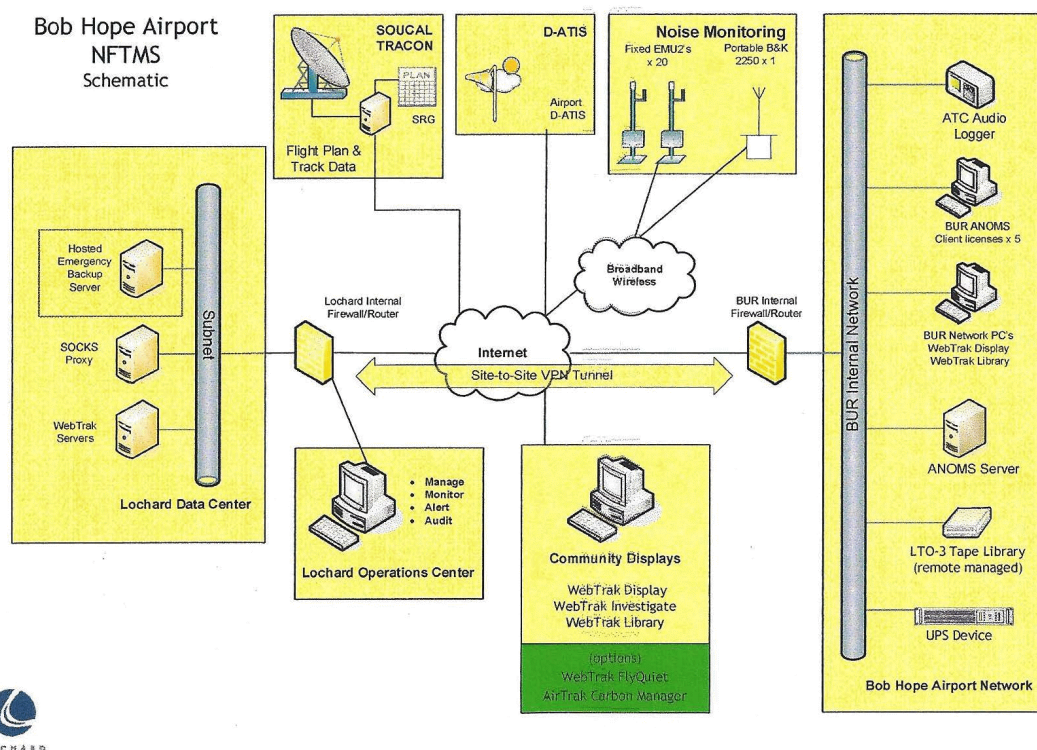


Figure A-1. Permanent Noise Monitor System Schematic

**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