



AAAI Report 1577
AAAI Project 88018

QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT SECOND QUARTER 2020

AUGUST 2020

Prepared for:



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**QUARTERLY NOISE MONITORING AT HOLLYWOOD BURBANK AIRPORT
SECOND QUARTER 2020**

I. INTRODUCTION

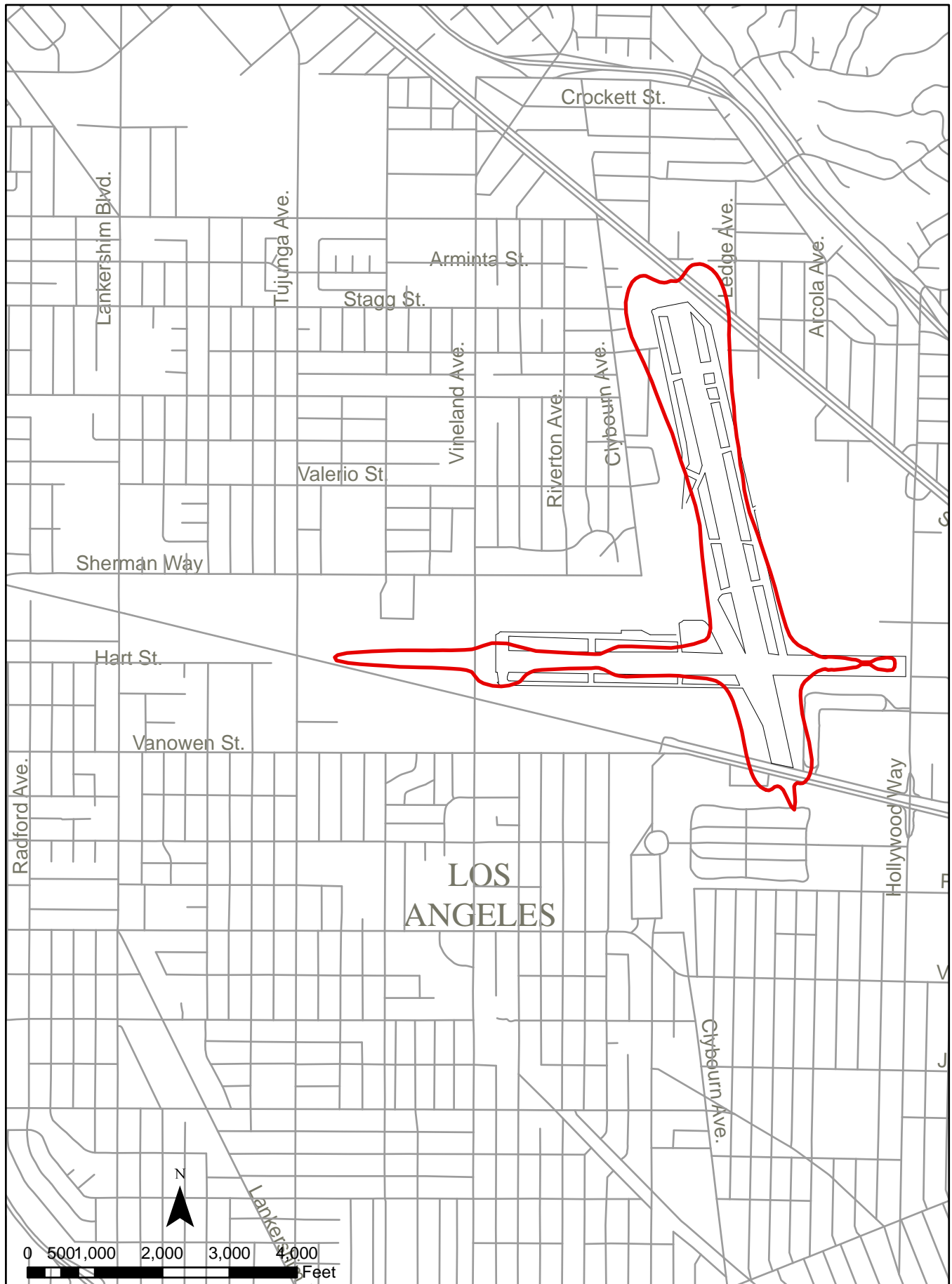
In compliance with the California Noise Standards (Reference 1) and the current variance from certain provisions of the Standards (Reference 2), the operator of the Hollywood Burbank Airport is required to perform noise monitoring in the vicinity of the airport for the purpose of establishing a noise impact boundary. The Noise Standards currently specify a community noise equivalent level (CNEL) of 65 dB for the noise impact boundary¹. 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.

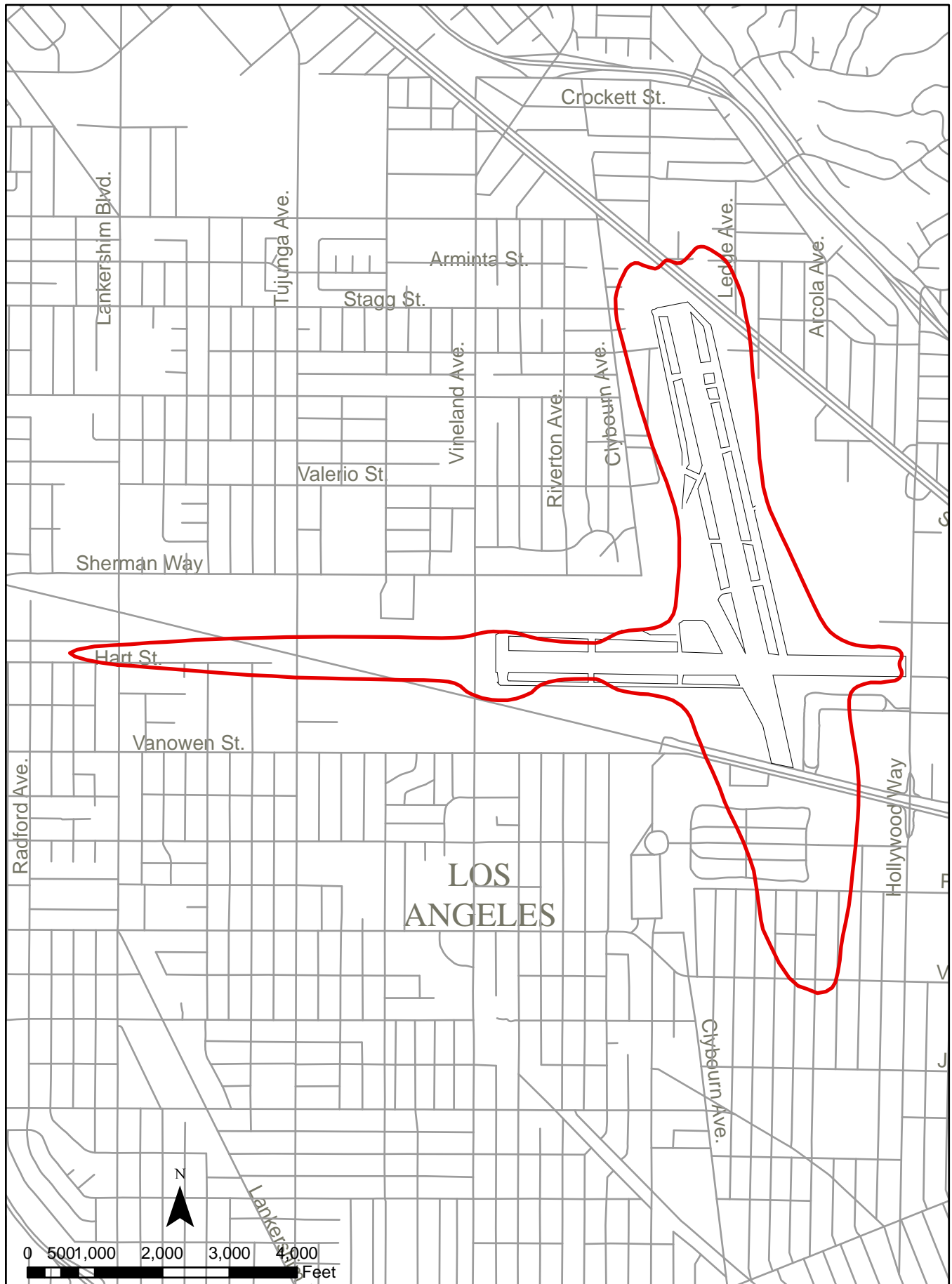
The Hollywood Burbank Airport Noise Monitoring System was modernized and augmented in late December 2012 by replacing the noise and flight track matching software, the noise monitoring hardware, and by adding sites 19, 20, 21, and 22 to allow closer monitoring to the current 65 dB CNEL contour. The old 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 second, third, and fourth quarter of 2019, and first quarter 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.

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



BURBANK AIRPORT - 70 CNEL CONTOUR for 2nd QUARTER 2020



BURBANK AIRPORT - 65 CNEL CONTOUR for 2nd QUARTER 2020

II. NOISE MEASUREMENTS

A. Sites

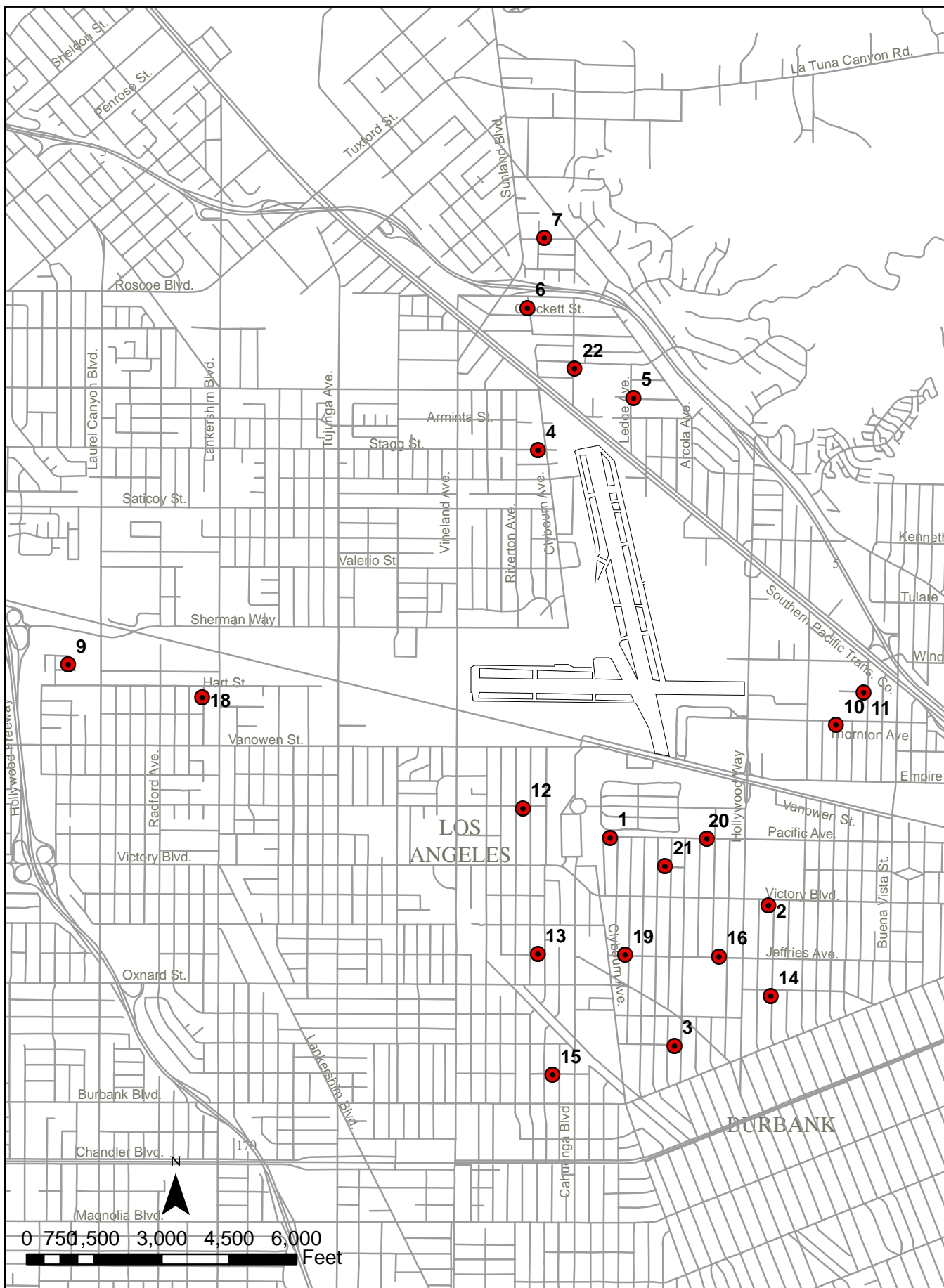
Aircraft noise levels were monitored at 15 locations prior to February, 1997. Two sites were added in February 1997, and equipment at one site west of the airport was moved to a new location. In July 2003, the monitor station at site 9 was moved 105 feet further west to accommodate new construction at 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 APRIL 2020

	RMS NUMBER																				
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
04/01/20	59.9	----	56.4	55.2	52.8	52.7	59.7	60.2	47.8	44.8	52.3	57.6	56.1	57.1	57.4	60.4	59.3	60.9	62.4	59.9	
04/02/20	59.9	----	57.5	50.1	50.8	50.6	49.7	61.1	48.8	48.5	51.1	56.0	54.4	56.3	58.1	61.2	59.3	63.9	64.6	56.5	
04/03/20	59.8	----	56.2	50.1	53.5	54.8	49.2	60.2	46.1	47.6	51.7	56.8	55.9	56.5	56.9	59.9	58.8	60.6	61.7	57.9	
04/04/20	55.0	----	52.2	49.9	48.5	47.6	49.5	55.4	45.2	41.2	47.1	52.0	50.5	52.1	53.1	55.5	55.4	57.5	58.2	55.3	
04/05/20	57.6	----	52.1	48.3	51.2	39.9	41.9	56.1	45.8	42.0	49.8	54.7	49.7	53.4	53.2	55.7	55.4	57.2	58.4	44.3	
04/06/20	58.5	----	55.1	52.0	51.5	38.0	38.6	56.3	47.3	41.9	50.4	55.5	52.2	55.0	56.3	55.7	58.4	59.9	61.2	41.3	
04/07/20	57.6	----	54.5	55.6	58.0	58.1	56.0	59.2	47.9	45.3	49.2	54.5	51.0	54.7	55.0	59.1	57.4	59.1	60.3	61.6	
04/08/20	58.6	----	57.2	47.6	51.2	51.7	52.5	61.4	47.3	47.3	52.1	55.6	54.5	56.1	58.1	59.9	58.4	61.2	61.9	59.2	
04/09/20	60.1	----	55.9	54.7	49.0	50.8	49.0	61.0	50.0	46.5	54.4	57.1	52.9	56.6	57.0	61.0	59.7	61.1	62.3	56.6	
04/10/20	58.4	----	55.1	52.5	45.4	49.6	49.7	59.7	47.6	42.6	52.4	54.7	52.6	54.5	56.2	59.1	57.4	59.9	61.0	54.9	
04/11/20	54.3	----	50.9	49.9	47.4	47.8	50.0	53.7	48.8	46.7	48.4	50.6	47.8	51.1	51.5	53.7	53.8	55.5	56.8	55.2	
04/12/20	56.0	----	52.6	51.0	44.1	34.6	37.0	55.1	45.8	36.9	49.9	52.9	49.2	53.8	53.5	57.7	56.4	57.1	58.9	25.8	
04/13/20	58.6	----	56.3	51.7	52.8	52.1	57.3	57.0	49.6	42.4	50.8	55.5	53.5	56.1	57.4	56.6	59.8	60.8	61.9	62.6	
04/14/20	58.5	----	56.2	52.3	50.9	54.1	57.3	58.8	49.2	47.1	51.1	55.7	55.6	54.9	57.1	58.3	56.9	60.1	60.7	59.9	
04/15/20	56.7	51.2	55.0	50.9	49.4	50.4	50.3	57.2	50.1	49.5	49.7	52.8	52.1	52.9	55.8	56.6	55.9	59.5	59.8	59.0	
04/16/20	57.6	53.5	54.9	51.1	50.2	48.3	47.5	59.2	51.2	51.1	49.5	54.4	51.9	54.4	55.6	58.4	56.7	59.1	60.1	53.0	
04/17/20	58.0	54.4	55.1	51.6	50.7	46.8	49.3	59.1	46.8	44.8	49.7	54.9	52.6	54.4	56.0	58.5	56.7	59.6	60.3	55.6	
04/18/20	53.5	49.0	49.7	49.5	50.8	50.6	51.8	54.7	47.4	44.7	46.1	50.7	46.7	49.8	50.6	54.8	52.7	54.5	55.8	57.6	
04/19/20	55.4	51.3	51.7	45.6	47.4	44.4	44.5	54.4	43.6	41.0	47.3	52.7	48.9	52.4	52.5	54.1	55.1	56.9	58.4	52.6	
04/20/20	57.3	54.1	55.9	47.4	48.0	43.2	45.5	57.3	49.4	46.1	51.9	54.3	53.0	54.1	56.6	56.6	57.0	59.7	60.7	50.1	
04/21/20	56.7	53.9	55.8	53.6	53.9	54.0	51.9	58.6	46.5	45.6	50.8	54.1	53.6	54.3	57.4	58.8	57.0	59.5	60.8	57.2	
04/22/20	59.1	57.3	59.3	57.6	57.9	57.2	54.0	56.4	48.7	46.7	50.9	54.1	56.1	56.2	61.3	56.4	59.4	63.2	64.2	58.7	
04/23/20	54.7	50.5	51.6	56.9	57.6	59.5	56.0	57.7	53.7	51.5	49.0	47.5	50.5	47.3	57.0	56.7	51.4	57.2	57.8	61.5	
04/24/20	53.9	52.3	54.1	53.6	54.7	54.9	53.5	57.6	46.7	59.8	48.5	48.8	58.1	51.7	57.4	57.1	54.6	58.9	59.7	59.0	
04/25/20	52.5	49.8	50.6	49.4	45.3	47.7	47.3	52.5	41.9	40.7	45.0	48.5	46.7	50.0	51.2	52.6	52.7	55.4	56.7	52.6	
04/26/20	54.8	52.8	52.5	48.1	47.5	40.7	47.2	56.0	44.2	45.9	46.4	51.5	48.9	52.2	53.2	55.4	55.0	57.3	58.8	50.1	
04/27/20	58.1	54.4	55.7	52.6	50.4	52.5	55.4	56.6	48.4	46.7	49.3	54.4	52.5	55.0	56.8	56.3	58.1	60.1	61.1	59.5	
04/28/20	58.5	54.4	55.7	54.0	53.8	52.1	57.6	60.1	47.2	45.6	52.0	55.1	52.5	55.4	56.8	59.2	58.3	60.2	61.4	62.9	
04/29/20	57.5	54.4	56.2	52.8	50.4	49.9	47.3	59.2	49.7	47.9	49.7	54.5	52.7	54.7	57.4	58.9	57.7	60.3	61.7	55.0	
04/30/20	58.3	55.2	57.3	55.8	50.8	51.5	54.3	59.6	54.2	47.7	50.4	54.1	53.6	55.0	57.5	58.9	58.3	60.8	62.3	57.5	
	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
Average	57.1	53.5	54.7	52.3	52.0	52.1	52.2	57.7	48.4	48.5	49.9	53.8	52.5	53.9	56.0	57.3	56.8	59.1	60.2	57.5	
NO. DAYS	30	16	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

TABLE 2. CNEL VALUES FOR MAY 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
05/01/20	56.6	53.7	55.1	57.1	57.0	58.7	57.0	56.8	49.6	51.5	51.1	53.7	52.1	54.7	58.7	56.6	57.3	59.2	61.1	62.3
05/02/20	55.4	50.6	51.2	49.0	45.6	41.9	46.0	52.6	47.0	46.2	46.3	50.8	47.8	51.2	52.6	52.3	53.9	58.2	59.5	53.1
05/03/20	57.4	51.6	52.9	54.3	53.0	48.6	49.7	54.5	47.1	41.2	48.4	54.8	49.2	55.0	53.4	54.2	56.4	57.5	59.3	56.2
05/04/20	57.3	54.2	56.0	55.1	48.3	46.2	48.3	56.2	48.3	44.2	50.4	54.3	52.3	56.1	56.6	55.5	59.3	60.6	62.0	54.2
05/05/20	58.1	57.5	59.6	52.8	53.6	53.7	53.8	57.4	50.4	52.7	52.0	53.0	56.1	54.3	60.2	58.0	58.3	63.5	64.1	59.3
05/06/20	56.9	54.1	55.7	51.2	55.0	57.1	56.6	59.1	51.8	47.1	54.3	51.2	52.7	52.9	56.4	58.4	56.3	60.1	60.7	61.3
05/07/20	57.1	55.1	56.0	48.3	50.3	52.9	54.1	58.5	59.4	54.3	49.1	53.3	53.1	53.8	56.8	57.3	57.2	60.7	61.6	57.6
05/08/20	57.5	55.5	55.3	52.8	53.5	51.8	51.7	59.3	51.2	49.8	50.1	52.5	54.0	53.6	56.8	58.8	56.8	60.7	61.2	59.5
05/09/20	55.5	52.6	52.2	50.0	54.1	52.9	52.5	55.2	51.3	47.8	46.4	52.2	52.0	52.3	53.7	55.1	54.8	57.0	58.3	61.3
05/10/20	55.2	52.4	52.9	48.3	48.7	45.1	47.5	54.4	45.8	38.6	47.4	51.7	51.6	52.4	54.1	54.7	55.4	58.5	59.6	55.0
05/11/20	56.6	54.4	55.9	49.5	52.9	50.0	51.3	56.2	51.8	46.8	47.9	53.8	53.4	54.8	56.7	55.5	57.6	59.7	61.2	56.8
05/12/20	59.8	57.6	59.0	50.9	51.9	51.9	55.6	60.0	49.5	48.0	51.9	56.6	56.5	55.7	59.9	59.3	59.3	62.9	63.9	61.8
05/13/20	57.1	55.0	56.8	49.9	50.6	48.8	50.8	59.0	46.4	44.1	49.2	53.6	53.4	54.6	57.3	58.6	57.7	60.4	61.5	58.3
05/14/20	56.8	54.7	56.8	54.5	53.6	54.9	51.0	59.5	50.6	50.7	50.6	52.8	54.5	53.4	57.9	59.0	57.2	60.5	61.6	57.8
05/15/20	58.3	56.6	57.4	56.5	55.0	52.8	54.3	60.1	48.6	48.7	51.0	55.3	54.8	55.7	59.0	59.3	58.4	61.7	62.5	60.9
05/16/20	55.0	53.0	52.4	48.9	50.1	48.8	50.9	54.8	48.1	44.3	47.6	51.6	49.9	52.8	53.2	54.3	55.6	57.2	58.8	58.3
05/17/20	55.2	51.5	52.4	48.0	51.1	44.5	49.4	54.5	45.2	45.9	47.8	52.6	49.3	53.3	53.2	54.2	55.8	57.0	58.5	54.7
05/18/20	57.6	55.0	55.7	52.6	51.6	46.0	52.7	56.0	48.4	47.9	50.3	54.2	53.4	54.2	56.8	54.9	56.9	60.2	61.5	57.4
05/19/20	58.8	54.0	54.9	56.1	58.5	59.4	58.5	58.8	50.4	48.9	51.4	56.0	54.9	54.5	57.5	58.3	57.0	59.8	60.9	62.6
05/20/20	58.8	56.6	56.7	53.2	53.8	54.5	53.0	59.7	48.0	48.3	50.5	53.2	55.0	54.6	57.9	59.6	58.0	62.0	62.3	59.6
05/21/20	55.9	54.7	56.3	47.0	52.5	50.8	51.5	58.9	49.2	44.0	53.9	52.2	53.0	54.0	57.3	58.1	57.2	60.8	61.6	55.0
05/22/20	58.2	56.7	56.7	53.2	54.4	51.7	56.1	59.5	51.8	49.5	50.6	54.5	55.4	56.0	58.4	58.7	58.8	62.1	62.7	59.8
05/23/20	56.3	54.8	54.0	53.7	50.4	43.3	43.3	56.2	51.9	54.4	49.5	52.3	51.2	53.9	55.9	55.3	57.0	59.2	60.4	46.5
05/24/20	58.4	53.3	52.6	52.6	53.1	52.5	49.0	55.8	51.9	57.1	53.2	54.7	50.9	53.2	53.7	55.7	56.0	57.8	59.5	53.3
05/25/20	54.7	51.8	53.7	48.3	44.7	41.3	44.8	55.5	47.5	37.8	46.6	51.7	50.7	52.1	54.2	55.4	55.6	59.6	59.8	49.5
05/26/20	58.6	56.8	57.7	53.6	49.7	51.9	52.7	58.4	51.2	49.1	52.6	52.7	55.3	54.1	58.6	57.7	58.3	61.8	62.6	58.9
05/27/20	59.4	58.5	60.5	54.8	50.7	53.4	53.6	59.4	49.0	47.0	53.5	53.4	57.1	55.2	61.8	59.5	59.4	64.1	64.9	59.6
05/28/20	58.2	56.8	58.2	53.3	50.4	56.3	53.9	58.9	58.4	49.6	50.5	54.3	55.1	55.3	59.4	58.7	59.3	62.8	63.8	59.5
05/29/20	58.0	55.0	54.9	50.9	52.4	51.5	48.9	59.3	52.1	51.4	51.7	53.4	52.3	54.6	56.5	59.3	58.3	60.8	61.9	56.6
05/30/20	55.0	53.1	53.5	47.6	51.7	49.4	49.3	55.8	48.7	46.6	47.4	50.9	51.3	52.6	55.2	55.5	55.6	58.9	59.5	56.2
05/31/20	55.4	52.6	53.9	47.9	51.3	45.3	49.9	55.9	51.5	51.4	47.5	54.0	51.2	55.3	55.0	55.3	56.4	58.7	60	54.4
AVERAGE	57.3	55.0	56.0	52.6	52.8	52.8	52.8	57.8	51.5	49.8	50.6	53.5	53.4	54.2	57.2	57.3	57.4	60.5	61.5	58.5
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 2020

RMS NUMBER																					
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22	
06/01/20	53.3	52.2	54.1	54.6	57.1	58.4	57.1	53.6	54.7	51.6	45.3	48.6	51.5	50.9	57.7	53.2	55.1	58.8	59.3	62.0	
06/02/20	57.8	56.3	56.4	52.4	52.3	54.9	55.1	58.9	52.4	52.4	51.2	55.0	54.0	54.8	57.6	58.6	58.7	61.5	62.3	60.2	
06/03/20	56.8	54.8	56.7	51.7	48.6	49.7	51.8	59.0	46.4	48.1	49.3	51.8	53.5	53.1	57.6	57.8	57.2	60.7	61.4	58.8	
06/04/20	58.1	55.7	56.8	52.0	50.9	54.0	52.0	60.7	51.7	47.9	49.6	53.8	53.9	55.4	57.8	60.1	58.6	61.5	62.3	55.4	
06/05/20	60.0	57.1	56.6	53.1	54.1	51.7	50.9	59.7	50.7	49.2	50.3	54.4	54.8	55.4	57.9	59.1	58.7	62.8	62.6	56.0	
06/06/20	56.2	53.1	53.4	51.6	50.3	54.3	51.8	57.7	49.8	46.6	49.7	53.0	50.6	53.5	54.6	56.5	56.2	59.1	59.5	57.5	
06/07/20	54.6	52.7	54.2	52.5	53.3	54.0	53.7	53.1	43.7	41.2	50.0	50.9	51.3	52.4	57.8	51.2	55.5	58.8	59.6	59.0	
06/08/20	56.1	54.1	53.5	57.1	59.5	60.6	57.7	53.4	45.9	48.0	48.0	51.9	52.8	50.9	57.9	52.8	55.2	59.4	59.2	63.6	
06/09/20	53.7	53.5	55.0	56.0	55.6	55.8	56.0	55.7	49.2	52.0	46.4	49.3	52.3	51.7	57.8	55.9	55.0	59.7	59.9	59.4	
06/10/20	57.0	55.0	56.2	51.2	53.0	53.9	52.3	57.6	51.4	50.5	52.3	52.8	53.0	53.5	57.5	56.5	57.3	61.1	61.4	59.4	
06/11/20	58.5	55.6	56.5	51.9	52.9	52.1	54.1	58.9	50.3	54.4	50.3	53.4	53.9	54.5	58.2	58.4	57.9	61.4	62.1	59.2	
06/12/20	58.4	55.3	56.3	54.2	51.7	52.9	54.7	61.0	47.6	48.2	50.1	55.0	53.9	59.0	57.5	59.5	59.0	61.4	62.2	59.7	
06/13/20	55.9	54.4	54.4	48.3	51.6	49.0	50.8	56.0	44.3	44.7	47.8	52.8	51.3	54.2	55.4	55.5	56.7	58.9	59.8	63.6	
06/14/20	57.7	55.1	56.1	51.0	52.7	47.1	50.4	57.8	49.0	46.6	48.7	54.2	52.6	55.7	57.1	56.6	58.5	61.0	61.9	56.1	
06/15/20	58.5	56.5	58.0	52.6	51.7	48.6	53.0	58.0	47.0	46.7	49.4	54.4	54.8	56.3	59.2	57.1	59.6	62.5	63.3	57.4	
06/16/20	59.0	57.2	58.0	51.5	54.8	52.0	53.4	60.7	51.9	49.5	50.5	55.5	55.1	56.3	59.3	60.0	60.0	63.2	64.3	58.9	
06/17/20	58.8	56.7	57.9	53.6	53.8	51.3	54.9	61.0	49.9	48.6	50.7	54.9	55.3	56.7	58.9	60.4	59.6	62.4	63.3	60.4	
06/18/20	59.4	56.9	58.3	62.5	54.4	52.5	55.7	61.8	55.0	51.7	50.4	55.7	54.9	56.7	59.4	60.2	60.3	62.8	63.8	61.5	
06/19/20	60.0	57.8	60.3	66.7	53.3	51.2	50.4	59.9	50.1	50.1	51.8	55.7	56.3	56.9	61.7	59.2	60.3	64.4	64.8	59.0	
06/20/20	57.6	54.1	55.1	46.4	50.4	49.2	52.1	56.5	47.3	48.0	48.5	53.9	51.8	54.8	56.2	55.7	57.7	59.9	60.9	57.6	
06/21/20	57.1	54.6	56.2	48.6	53.1	50.5	50.2	58.3	45.5	42.6	49.4	55.0	53.7	56.1	56.9	57.8	59.1	60.5	61.9	56.5	
06/22/20	58.7	56.6	58.0	52.5	51.3	48.6	53.4	58.7	47.9	53.5	50.8	56.3	54.6	56.6	59.0	58.1	60.0	62.8	63.8	58.9	
06/23/20	58.0	55.5	56.7	60.2	53.7	54.5	55.9	60.6	51.7	51.8	49.8	54.7	53.7	55.2	58.2	60.1	58.7	62.0	62.7	61.9	
06/24/20	58.0	55.5	56.9	52.0	51.0	54.0	53.4	61.0	48.0	49.5	49.4	54.3	53.1	55.9	58.0	60.7	59.1	61.8	62.9	60.3	
06/25/20	59.8	57.1	58.5	51.7	52.4	52.4	57.0	61.4	53.1	47.1	51.7	55.7	55.6	57.0	60.0	60.7	60.0	63.0	64.0	62.5	
06/26/20	60.5	58.0	58.1	55.3	52.3	50.7	54.9	60.5	50.2	51.7	50.2	54.9	56.0	55.9	59.9	59.8	59.6	63.9	64.4	58.6	
06/27/20	57.5	54.3	56.0	54.3	52.5	53.6	53.7	57.6	53.0	52.7	49.4	53.7	52.5	55.2	57.1	57.2	58.2	61.3	62.5	59.6	
06/28/20	57.4	54.8	56.1	52.0	54.2	41.8	44.2	58.7	45.7	44.8	48.6	54.9	52.5	56.2	57.2	57.8	59.1	60.9	62.1	53.6	
06/29/20	59.2	57.0	57.4	55.1	54.9	51.0	52.5	58.5	50.6	49.6	51.1	55.9	56.2	57.2	59.1	59.4	60.3	62.5	63.6	56.8	
06/30/20	59.5	57.1	58.3	52.7	53.4	53.4	54.8	60.8	48.2	48.6	51.7	56.7	55.4	57.1	59.4	60.2	60.2	62.8	63.8	59.0	
AVERAGE	58.1	55.7	56.8	56.3	53.6	53.4	53.9	59.1	50.3	49.9	50.0	54.3	54.0	55.5	58.3	58.4	58.7	61.7	62.5	59.7	
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 2019	4th Quarter 2019	1st Quarter 2020	2nd Quarter 2020	4 Quarter Average
1	62.1	62.3	61.5	57.6	61.2
2	60.3	60.2	-----	55.0	60.2
3	61.7	61.7	60.6	56.0	60.5
4	57.1	59.2	58.0	54.1	57.5
5	56.3	59.3	58.4	52.8	57.3
6	53.9	57.8	57.0	52.7	55.9
7	56.1	56.5	55.8	53.2	55.6
9	62.9	62.4	62.0	58.4	61.7
10	53.3	53.4	52.9	50.3	52.7
11	52.7	52.7	52.1	49.4	51.6
12	53.6	55.0	54.4	50.3	53.7
13	57.3	57.6	57.9	54.0	57.0
14	58.6	58.2	59.1	53.5	57.8
15	60.2	60.0	59.5	54.7	59.1
16	62.8	63.2	61.9	57.3	61.8
18	62.4	61.7	61.3	57.9	61.1
19	63.3	63.1	62.4	57.8	62.1
20	66.3	66.3	65.0	60.7	65.1
21	67.7	67.5	66.2	61.6	66.3
22	61.5	61.4	60.2	58.6	60.6

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

AIRCRAFT	SCHEDULE IN EFFECT FROM				4/1/2020 to 4/30/2020		30 DAYS			
	AS EMB175	AS B7379	AS B7379	AS A320	AS A320	US CRJ9	AA CRJ7	AA CRJ7	AA CRJ7	AA CRJ7
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	10	11	0	0	0	0	5	6	0	0
EVENING	0	0	0	0	0	0	2	0	0	0
NIGHT	1	0	0	0	0	0	0	0	0	0
TOTAL	11	11	0	0	0	0	7	7	0	0

	SCHEDULE IN EFFECT FROM				4/1/2020 to 4/30/2020		30 DAYS			
	AA B7378	WN B7378	WN B7378	WN B7377	WN B7377	UA A320	UA RJ	UA RJ	UA RJ	UA RJ
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	7	3	12	11	87	75	0	0	7	7
EVENING	0	4	3	4	20	32	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	7	7	14	14	108	108	0	0	7	7

	SCHEDULE IN EFFECT FROM				4/1/2020 to 4/30/2020		30 DAYS			
	UA EMB175	UA CRJ7	FE A300	FE A300	FE A300	UPS A300	DL E175	DL E175	DL E175	DL E175
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	6	6	0	0	0	5	4	5	15	11
EVENING	0	0	0	0	9	4	5	0	0	4
NIGHT	0	0	0	0	0	0	1	4	0	0
TOTAL	6	6	0	0	9	9	9	9	15	15

	SCHEDULE IN EFFECT FROM				4/1/2020 to 4/30/2020		TOTALS	
	DL B738	B6 A21N	NKS A319	NKS A319	NKS A319	NKS A319	DEP	ARR
	DEP	ARR	DEP	ARR	DEP	ARR		
DAY	0	0	0	0	0	0	153	140
EVENING	0	0	1	0	0	0	40	50
NIGHT	0	0	0	0	0	0	2	5
TOTAL	0	0	1	1	0	0	195	195

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

AIRCRAFT	SCHEDULE IN EFFECT FROM					5/1/2020	to	5/31/2020	31 DAYS		
	AS EMB175	AS B7379		AS A320				US CRJ9	AA CRJ7		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	15	16	0	0	0	0		0	1	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	16	16	0	0	0	0		1	1	4	4

	SCHEDULE IN EFFECT FROM					5/1/2020	to	5/31/2020			
	AA B7378	WN B7378		WN B7377				UA A320	UA RJ		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	5	5	15	15	87	55		0	0	6	0
EVENING	0	1	0	0	1	33		0	0	0	6
NIGHT	0	0	0	0	0	0		0	0	0	0
TOTAL	5	5	15	15	88	88		0	0	6	6

	SCHEDULE IN EFFECT FROM					5/1/2020	to	5/31/2020			
	UA EMB175	UA CRJ7		FE A300				UPS A300	DL E175		
	DEP	ARR	DEP	ARR	DEP	ARR		DEP	ARR	DEP	ARR
DAY	1	1	10	10	2	5		2	4	5	4
EVENING	0	0	0	0	8	0		5	0	0	1
NIGHT	0	0	0	0	0	4		2	4	0	0
TOTAL	1	1	10	10	9	9		8	8	5	5

	SCHEDULE IN EFFECT FROM					5/1/2020	to	5/31/2020			
	DL B738	B6 A21N		NKS A319						TOTALS	
	DEP	ARR	DEP	ARR	DEP	ARR				DEP	ARR
DAY	0	0	0	0	0	0				153	119
EVENING	0	0	0	0	0	0				13	42
NIGHT	0	0	0	0	0	0				2	8
TOTAL	0	0	0	0	0	0				169	169

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

AIRCRAFT	SCHEDULE IN EFFECT FROM				6/1/2020 to 6/30/2020		30 DAYS			
	AS EMB175	AS B7379		AS A320	US CRJ9	AA CRJ7				
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	25	18	0	0	0	0	0	0	7	7
EVENING	0	7	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	25	25	0	0	0	0	0	0	7	7

	SCHEDULE IN EFFECT FROM				6/1/2020 to 6/30/2020					
	AA B7378	WN B7378		WN B7377	UA A320	UA RJ				
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	7	7	21	15	139	110	0	0	7	0
EVENING	0	0	0	6	5	34	0	0	0	7
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	7	7	21	21	144	144	0	0	7	7

	SCHEDULE IN EFFECT FROM				6/1/2020 to 6/30/2020					
	UA EMB175	UA CRJ7		FE A300	UPS A300	DL E175				
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	1	1	7	7	3	8	4	5	0	0
EVENING	0	0	0	0	9	0	5	0	0	0
NIGHT	0	0	0	0	0	4	0	4	0	0
TOTAL	1	1	7	7	12	12	9	9	0	0

	SCHEDULE IN EFFECT FROM				6/1/2020 to 6/30/2020					
	DL B738	B6 A21N		NKS A319			TOTALS			
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	3	3	224	181		
EVENING	0	0	0	0	0	0	18	54		
NIGHT	0	0	0	0	0	0	1	8		
TOTAL	0	0	0	0	3	3	243	243		

Table 5. (continued)

PERIOD TOTALS FOR
AIR CARRIERS AND COMMUTERS

AIR CARRIERS

	<u>DEP</u>	<u>ARR</u>
DAY	2125	1758
EVE	309	607
NIGHT	22	91
TOTAL	2456	2456

COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	168	145
EVE	0	23
NIGHT	0	0
TOTAL	168	168

AIR CARRIERS AND COMMUTERS

	<u>DEP</u>	<u>ARR</u>
DAY	2293	1903
EVE	309	630
NIGHT	22	91
TOTAL	2624	2624

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 578.3 and 238.3 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 7.22 acres within the 65 dB contour of which 0.23 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 175 parcels of land. Those 175 parcels total 25.42 acres. None of the 175 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. 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 48 single family residential parcels, totaling approximately 6.82 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 62 within the 65 dB contour, of which 1 is also within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 167 and 3, 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, Third Quarter 2019", AAAI Report 1552.
4. "Quarterly Noise Monitoring at Hollywood Burbank Airport, Fourth Quarter 2019", AAAI Report 1553.
5. "Quarterly Noise Monitoring at Hollywood Burbank Airport, First Quarter 2020", AAAI Report 1557.

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.

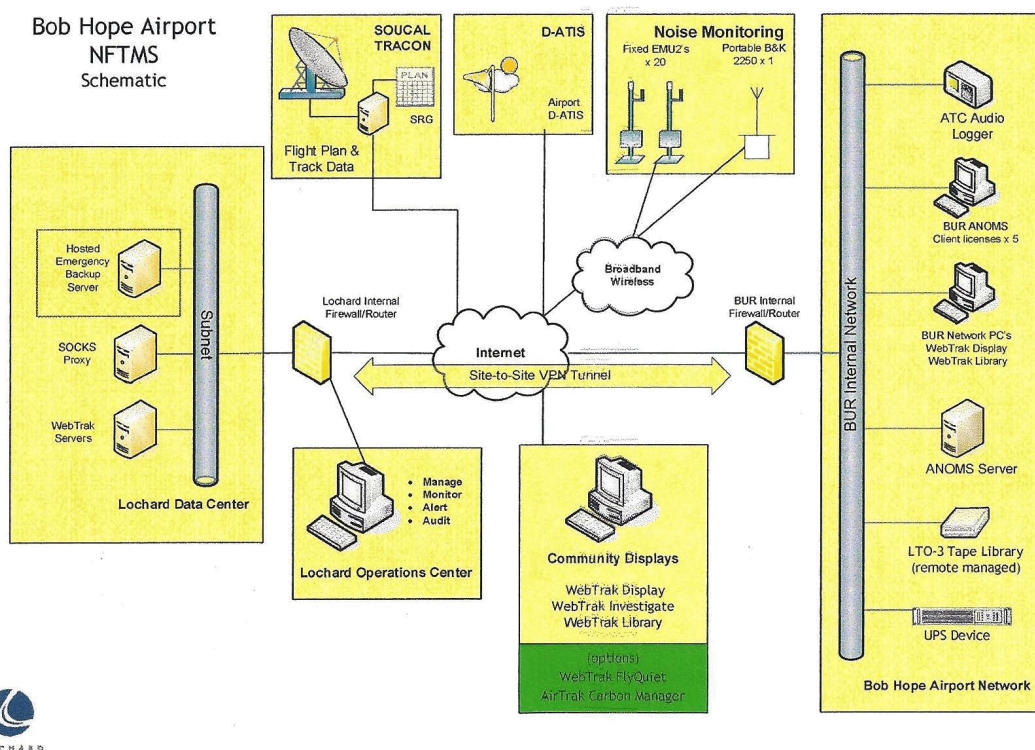


Figure A-1. Permanent Noise Monitor System Schematic

TABLE A-1
NOISE MONITOR SITE LOCATIONS

NMT	Latitude	Longitude
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