

# QUARTERLY NOISE REPORT

For:  
California Department of Transportation

4<sup>th</sup> Quarter 2016  
October 1– December 31, 2016



**SAN DIEGO**  
INTERNATIONAL AIRPORT

LET'S **GO.**

Airport Noise Mitigation

February 28, 2016



**QUARTERLY NOISE REPORT**  
**For the Period**  
**October 1 through December 31, 2016**

The California Department of Transportation, Division of Aeronautics, granted a Variance from the requirements of Section 5012, Chapter 2.5, Subchapter 6, Title 21, of the California Administrative Code to the San Diego County Regional Airport Authority for the operation of San Diego International Airport on May 8<sup>th</sup>, 2012.

This Quarterly Report for the 4<sup>th</sup> Quarter of 2016 was prepared by Airport Noise Mitigation at San Diego International Airport, in accordance with the Airport Noise Standards, State of California.

A handwritten signature in cursive script that reads "Angela Jamison". The signature is written in black ink and is positioned above a horizontal line.

Angela Jamison  
Acting Director, Airport Planning & Noise Mitigation

A handwritten signature in cursive script that reads "Thella F. Bowens". The signature is written in black ink and is positioned above a horizontal line.

Thella F. Bowens  
President / CEO

## TABLE OF CONTENTS

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Summary of Statistical Information for the California Department of Transportation .....	1
Aircraft Noise Measurements .....	2
Table 1: Change in N.I.A. and M.I.A. ....	2
Table 2: Quarterly and Annual CNEL Data. ....	3
Airport Operations .....	4
Table 3: SAN ATCT Counts.....	4
Quarterly Operations Survey Report .....	5
Table 4: Single Event Noise Exposure Level (SENEL) Comparison.....	5
Table 5: Quarterly Operations Survey – Arrivals.....	6
Table 6: Quarterly Operations Survey – Departures.....	8
Table 7: Air Carrier Operations Mix by Time of Day and Runway Use .....	10
Aircraft Noise Complaints .....	11
Enforcement Actions .....	11
Residential Sound Insulation Program .....	11
Airport Noise Advisory Committee (ANAC).....	11
Appendix A - Aircraft Noise Monitoring System	
Appendix A1	Remote Noise Monitoring Terminal (RMTs) Thresholds
Appendix A2	Daily/Monthly CNEL Levels – October 2016
Appendix A3	Daily/Monthly CNEL Levels – November 2016
Appendix A4	Daily/Monthly CNEL Levels – December 2016
Appendix B – ANOMS Commercial Flight Operations Mix – 4 <sup>th</sup> Quarter 2016	
Attachment: Comparison of the 2015 and 2016 4 <sup>th</sup> Quarter 65 dB CNEL Contours	

## Summary of Statistical Information for the California Department of Transportation

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1. Size of Noise Impact Area as defined in the Noise Standards (California Code of Regulations, Title 21, Chapter 2.5, Subchapter 6):  
**Noise Impact Area = 0.757 sq. miles; Military Noise Impact Area = 0.106 sq. miles**

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2. Estimated number of dwelling units included in the Noise Impact Area as defined in the Noise Standards:  
**9,999\* (QHP Insulated = 3,453)**

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3. Estimated number of people residing within the Noise Impact Area as defined in the Noise Standards:  
**20,081\* (QHP Insulated = 8,633)**

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4. Identification of the aircraft type having the highest takeoff noise level operating at SDIA, together with the estimated number of operations by this aircraft type during the calendar quarter reporting period:  
**Boeing 747-400: 154**

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5. Total number of aircraft operations during the calendar quarter:  
**48,698**

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6. Number of Air Carrier operations by aircraft certified under Federal Aviation Regulations (FAR) Part 36:  
**43,905**

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7. Percentage of Air Carrier operations by aircraft certificated under FAR Part 36, Stage III:  
**100%**

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8. Estimated number of operations by Air Taxi aircraft during the calendar quarter:  
**2,405**

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9. Estimated number of operations by General Aviation aircraft during the calendar quarter:  
**2,209**

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10. Estimated number of operations by Military aircraft during the calendar quarter:  
**179**

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Form DOA 617, 10/89

\* Population and dwelling unit calculations are based upon 2010 Census Block Boundary Data.

## Aircraft Noise Measurements

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Using data generated from the Airport Noise and Operations Monitoring System (ANOMS) and Geographic Information System (GIS), Airport Noise Mitigation determined that the Noise Impact Area (N.I.A.) and the Federal Military Impact Area (M.I.A.) within the 65 dB Community Noise Equivalent Level (CNEL) contour for the period between January 1, 2016 to December 31, 2016 to be 0.757 square miles (484.5 acres) and 0.106 square miles (67.8 acres), respectively. As compared to the period between January 1, 2015 to December 31, 2015, the Noise Impact Area increased by 0.129 square miles and the Federal Military Noise Impact Area decreased by 0.007 square miles.

**Table 1**

Change in N.I.A. and M.I.A.

<b>Impact Area</b>	<b>January 1, 2016 to December 31, 2016</b>	<b>January 1, 2015 to December 31, 2015</b>	<b>Change</b>
N.I.A.	0.757	0.628	0.129
M.I.A.	0.106	0.113	-0.007

A summary of the quarterly and annual CNEL data is shown on the following page within Table 2. Appendix A: Aircraft Noise Monitoring System contains Remote Monitoring Terminals (RMTs) thresholds and Daily/Monthly CNEL Logs.

The contours were prepared using Harris Miller Miller & Hanson Inc.'s (HMMH) RealContours software. The N.I.A. & M.I.A. were determined using GIS analysis. Use of GIS technology allowed direct counting of individual parcels within the N.I.A. The modeling methodology fulfills the requirements of the State of California, Title 21, California Noise Standards. A review of measured and modeled noise levels indicate good agreement between several key measurement locations.

Additionally, the 65 dB Community Noise Equivalent Level (CNEL) contours for the period between January 1, 2016 to December 31, 2016 compared to the period between January 1, 2015 to December 31, 2015 accompanies this report as an attachment.

**Table 2****Quarterly and Annual CNEL Data**

<b>RMT #</b>	<b>Annual CNEL (dB)<sup>1</sup></b>	<b>Quarter CNEL (dB)<sup>2</sup></b>
1	70.7	69.9
2	66.7	66.9
3	*	*
4	66.3	66.6
6	69.6	70.1
7	75.2	75.5
9	68.1	68.1
10	64.4	64.9
11	72.0	72.3
12	62.8	63.0
13	66.2	66.4
14	65.8	66.3
16	65.1	65.2
17	65.5	65.9
18	60.9	62.7
19	62.9	64.1
20	61.8	62.2
21	58.4	59.0
22	65.4	65.3
23	64.0	63.8
24	64.5	64.3
25	62.9	62.6
26	63.3	62.9

<sup>1</sup> = For the period January 1, 2016 to December 31, 2016

<sup>2</sup> = For the period October 1, 2016 through December 31, 2016

Note 1: RMTs #5, #8 and #15 are no longer operational since the noise impact boundary has decreased in size.

Note 2: RMT #3 was offline during this time period due to mechanical, electrical and/or communication issues.

## Aircraft Operations

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The following table contains statistics of aircraft operations based upon the Federal Aviation Administration (FAA) Air Traffic Control Tower (ATCT) counts at San Diego International Airport (SAN).

**Table 3**

**SAN ATCT Counts**

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<b>Operations</b>	<b>4th Quarter 2016</b>	<b>4th Quarter 2015</b>	<b>Increase / Decrease</b>	<b>Percent Change</b>
Air Carrier	43,905	41,657	2,248	5.40%
Air Taxi	2,405	3,341	-936	-28.02%
General Aviation	2,209	2,287	-78	-3.41%
Military	179	207	-28	-13.53%
<b>Total</b>	<b>48,698</b>	<b>47,492</b>	<b>1,206</b>	<b>2.54%</b>

## Quarterly Operations Survey Report

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The Quarterly Operations Survey Report for San Diego International Airport (SDIA) encompasses the 4<sup>th</sup> Quarter of 2016. The data used to compile this report was gathered during 24-hour periods on November 8-10, 2016.

Table 5, Quarterly Operations Survey - Arrivals, identifies the loudest 25% of the aircraft arriving at SDIA, as measured at Remote Monitoring Terminal (RMT) #1, which is located approximately one (1.0) mile from the arrival end of Runway 27. During the 4<sup>th</sup> Quarter 2016 Operations Survey, an average of 240 daily air carrier arrival operations was conducted. Therefore, the loudest 25% of these arrivals totaled approximately 60. These commercial service jet aircraft are listed by Aircraft Type, Single Event Noise Exposure Level (SENEL), Airport Origin, Flight Number and Date/Time.

Table 6, Quarterly Operations Survey - Departures, identifies the loudest 25% of the aircraft departing from SDIA, as measured at Remote Monitoring Terminal (RMT) #7, which is located approximately one-half (0.5) mile from the departure end of Runway 27. During the 4<sup>th</sup> Quarter 2016 Operations Survey, an average of 240 daily air carrier departure operations was conducted. Therefore, the loudest 25% of these departures totaled approximately 60. These commercial service jet aircraft are listed by Aircraft Type, Single Event Noise Exposure Level (SENEL), Airport Destination, Flight Number and Date/Time.

The average Single Event Noise Exposure Level (SENEL) of the loudest 25% of the 4<sup>th</sup> Quarter 2016 Operations Survey is as follows:

**Table 4**

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### Single Event Noise Exposure Level (SENEL) Comparison

	<b>November 8-10, 2016</b>	<b>November 10-12, 2015</b>	<b>Change (dB)</b>
Departures	99.2	99.0	0.2
Arrivals	-	95.1	-

Table 7, Air Carrier Operations Mix by Time of Day and Runway Use, represents the 480 daily operations, which is greater than the 467 daily operations recorded during the 4<sup>th</sup> Quarter of 2015.

## Table 5

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### Quarterly Operations Survey - Arrivals (RMT #1 from November 8-10, 2016)

\* = Missed Approach

RMT #1 was offline during this time period due to mechanical, electrical and/or communication issues and therefore there is no data available.

**Table 5 Continued**

**Quarterly Operations Survey - Arrivals (RMT #1 from November 8-10, 2016)**

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RMT #1 was offline during this time period due to mechanical, electrical and/or communication issues and therefore there is no data available.

Table 6

Quarterly Operations Survey - Departures (RMT #7 from November 8-10, 2016)

Aircraft Type	SENEL (dB)	Departing To	Flight Number	Date and Time
B744	106.0	LHR	BAW72A	11/8/2016 7:13 PM
B744	105.5	LHR	BAW72A	11/10/2016 7:38 PM
B738	100.9	OGG	ASA829	11/9/2016 7:21 AM
B739	100.8	EWR	UAL1827	11/10/2016 9:49 PM
A332	100.7	HNL	HAL15	11/8/2016 10:39 AM
MD83	100.5	ELP	AAV421	11/10/2016 1:27 PM
B739	100.4	ORD	UAL307	11/9/2016 7:06 AM
B739	100.2	EWR	UAL1664	11/10/2016 6:38 AM
B739	100.1	ORD	UAL1476	11/8/2016 10:20 AM
B739	100.0	BOS	ASA798	11/9/2016 8:40 AM
A321	100.0	PHL	AAL754	11/9/2016 9:01 AM
B738	99.9	JFK	AAL94	11/8/2016 7:53 AM
DC10	99.9	MEM	FDX1222	11/8/2016 7:22 PM
B738	99.8	DTW	DAL132	11/9/2016 7:20 AM
B738	99.7	JFK	DAL2404	11/9/2016 7:30 AM
B739	99.7	ORD	UAL307	11/10/2016 7:17 AM
B738	99.6	LIH	ASA857	11/8/2016 8:42 AM
B739	99.6	IAH	UAL1436	11/10/2016 7:14 AM
A321	99.5	CLT	AAL1724	11/10/2016 10:54 PM
B738	99.4	OGG	ASA829	11/10/2016 7:27 AM
B738	99.4	JFK	AAL94	11/10/2016 8:08 AM
B739	99.4	IAD	UAL965	11/10/2016 10:22 PM
A321	99.3	PHL	AAL754	11/10/2016 9:07 AM
B738	99.2	ORD	AAL1566	11/9/2016 8:09 AM
B738	99.2	DTW	DAL132	11/10/2016 7:26 AM
B738	99.1	MDW	SWA3275	11/9/2016 6:34 AM
B739	99.1	EWR	UAL1664	11/9/2016 6:57 AM
B738	99.1	BWI	SWA1051	11/9/2016 7:02 AM
B738	99.1	JFK	DAL2404	11/10/2016 7:30 AM
B738	99.0	OGG	ASA829	11/8/2016 7:13 AM
B739	98.8	ORD	UAL307	11/8/2016 8:36 AM
B738	98.7	BWI	SWA6300	11/8/2016 6:55 AM
B739	98.7	ORD	UAL240	11/8/2016 10:36 PM
A321	98.6	CLT	AAL1851	11/8/2016 11:33 AM
B739	98.6	ORD	UAL1900	11/8/2016 1:51 PM
A321	98.6	CLT	AAL1724	11/9/2016 11:00 PM
B738	98.6	KOA	ASA865	11/10/2016 7:58 AM
B739	98.6	ORD	UAL240	11/10/2016 10:40 PM
A321	98.5	DFW	AAL423	11/8/2016 7:16 AM

**Table 6 Continued**

Quarterly Operations Survey - Departures (RMT #7 from November 8-10, 2016)

<b>Aircraft Type</b>	<b>SENEL (dB)</b>	<b>Departing To</b>	<b>Flight Number</b>	<b>Date and Time</b>
B738	98.5	JFK	AAL94	11/9/2016 7:47 AM
B739	98.5	BOS	ASA798	11/10/2016 8:51 AM
A332	98.5	HNL	HAL15	11/10/2016 10:42 AM
B739	98.5	EWR	UAL1150	11/10/2016 12:03 PM
B738	98.5	JFK	DAL2385	11/10/2016 9:59 PM
A321	98.4	PHL	AAL754	11/8/2016 8:50 AM
B753	98.4	ATL	DAL1096	11/8/2016 10:56 PM
B739	98.4	IAH	UAL1436	11/9/2016 7:05 AM
B738	98.3	JFK	DAL2404	11/8/2016 7:18 AM
A321	98.3	DFW	AAL459	11/9/2016 6:48 AM
A321	98.3	DFW	AAL2289	11/9/2016 9:12 AM
B738	98.3	LIH	ASA857	11/10/2016 8:38 AM
B739	98.2	ATL	DAL2220	11/8/2016 2:05 PM
A321	98.2	CLT	AAL1724	11/8/2016 10:45 PM
B738	98.1	MIA	AAL1042	11/10/2016 11:11 PM
B763	98.0	SDF	UPS921	11/8/2016 7:29 PM
B738	98.0	BWI	SWA1051	11/10/2016 7:04 AM
B753	98.0	ATL	DAL1096	11/10/2016 10:59 PM
A321	97.9	DFW	AAL459	11/8/2016 6:52 AM
B763	97.9	MEM	FDX821	11/9/2016 7:09 AM
B739	97.9	ATL	DAL2220	11/10/2016 2:04 PM

**Table 7****Air Carrier Operations Mix by Time of Day and Runway Use**

These numbers are the averages for operations for November 8-10, 2016

Aircraft Type	Runway 27						Runway 09						Total
	Arrivals			Departures			Arrivals			Departures			
	700	1900	2200	700	1900	2200	700	1900	2200	700	1900	2200	
	--	--	--	--	--	--	--	--	--	--	--	--	
	1859	2159	659	1859	2159	659	1859	2159	659	1859	2159	659	
A306	1				1								2
A319	10	2	1	9	1	2							25
A320+	27	7	6	28	4	8							80
A330+			1	1									2
B712			1			1							2
B737+	108	30	22	119	22	18							319
B747+	1				1								2
B757+	3	1	2	4	2	1							13
B767+	4		3	3	2	3							15
B787+	1			1									2
DH8D	3												3
E170/175/190	4	2				1							7
MD90+		1				1							2
RJ+	7		1		1								9
<b>Total</b>	<b>169</b>	<b>43</b>	<b>37</b>	<b>165</b>	<b>34</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>483</b>

Note 1: The use of a "+" sign after an aircraft model designation means "and all succeeding series aircraft." The designation of "Q" signifies a hush kitted aircraft. RJ+ = All forms/types of Regional Jets operated as "commercial service" flights; Includes CRJ2/7/9, E120/35/40/45

## **Aircraft Noise Complaints**

During the 4<sup>th</sup> Quarter of 2016, Airport Noise Mitigation received a total of 2,948 complaints. Where possible, each complaint is correlated with a specific flight and examined for its validity. Those flights that indicate a possible violation of the Airport Use Regulations, Time of Day Restrictions, are investigated and appropriate enforcement action is taken.

The 2,948 complaints recorded during the 4<sup>th</sup> Quarter of 2016 reflects a decrease of 675 from the 3,623 recorded during the 4<sup>th</sup> Quarter of 2015.

## **Enforcement Actions**

The Airport Use Regulations at San Diego International Airport establish Time of Day Restrictions for all operators. Airport Noise Mitigation monitors operator compliance with these Airport Use Regulations. Any infraction is reported to the Curfew Violation Review Panel (Panel), which is a separate body. The Panel examines data and documentation collected regarding alleged violations of the Time of Day (Noise Curfew) Restrictions, and makes recommendations to the Director, Airport Noise Mitigation, for the disposition of incidents.

During the 4<sup>th</sup> Quarter of 2016, there were a total of 34 curfew violations. The 34 curfew violations recorded during the 4<sup>th</sup> Quarter of 2016 reflects an increase of 15 from the 19 curfew violations recorded during the 4<sup>th</sup> Quarter of 2015.

## **Residential Sound Insulation Program**

Per the requirements of San Diego International Airport's Variance agreement, the following figure is provided to serve as an update on the Residential Sound Insulation Program (RSIP), also known as the Quieter Home Program (QHP), the Airport sponsored sound insulation program. To date, the Quieter Home Program has established eight eligibility boundaries. The eight boundaries are the Pilot/Phase 1A Boundary, the Phase 1B Boundary, the Phase 1C Boundary, the Supplemental Expansion Boundaries 1, 2, & 3, the 2014 NEM 68 dB CNEL boundary, and the 2014 NEM 67 dB CNEL boundary. Within each boundary there have been subsets, called phases and groups.

## **Airport Noise Advisory Committee (ANAC)**

The San Diego County Regional Airport Authority recognizes that neighborhoods surrounding San Diego International Airport are affected by noise from aircraft operations. An Airport Noise Advisory Committee (ANAC) (Committee), consisting of individuals from various organizations, residential areas, and professional associations, was formed in 1981 under the San Diego Unified Port District, previous operator of San Diego International Airport. The Airport Noise Advisory Committee is formally adopted as Airport Authority Policy 9.20.

The information regarding the Airport Noise Advisory Committee (ANAC) can be found on the San Diego County Regional Airport Authority's website: <http://www.SAN.org/Airport-Noise/Initiatives>.

## Appendix A

### Airport Noise Monitoring System

## Appendix A1

### Remote Noise Monitoring Terminal (RMTs) Thresholds

RMT #	SENEL Day Threshold (dB)	Duration (sec)	SENEL Evening Threshold (dB)	Duration (sec)	SENEL Night Threshold (dB)	Duration (sec)
1	73*	9	73	9	72*	10
2	63	10	60	12	58	14
3	74*	9	73	10	72*	10
4	64*	10	63	12	60*	12
6	68*	8	67	9	65*	10
7	65	12	63	12	62	15
9	68*	8	67	9	65*	10
10	65*	8	62	12	60*	13
11	65*	12	63	13	60*	15
12	64*	10	62	12	60*	14
13	65*	8	62	12	60*	13
14	65*	10	62	12	60*	13
16	67*	8	66	9	65*	10
17	64	9	62	12	58	15
18	65	8	65	8	62	12
19	64*	8	64	8	63*	8
20	62	11	62	11	60	13
21	60	10	58	12	55	18
22	65	8	63	10	60	12
23	65*	8	63	10	60*	12
24	65*	8	65	8	63*	10
25	65*	10	62	10	60*	12
26	65*	10	64	12	62*	14

#### KEY:

Day	=	From 7:00 a.m. to 6:59 p.m. (* = change occurs at 0500L)
Evening	=	From 7:00 p.m. to 9:59 p.m.
Night	=	From 10:00 p.m. to 6:59 a.m. (* = change occurs at 0500L)

Note 1: RMTs #1 and #3 high threshold levels are due to high freeway and/or construction noise.

Note 2: Noise monitors comply with all applicable settings as specified in the California Noise Standards (Title 21). Noise events must meet both threshold criteria to be considered for further review.

## Appendix A2

### Daily/Monthly CNEL Levels – October 2016

\* Not in Service

Day	RMT 1	RMT 2	RMT 3	RMT 4	RMT 6	RMT 7	RMT 9	RMT 10	RMT 11	RMT 12	RMT 13
1	68.4	64.2	*	64.7	66.6	74.6	66.6	60.9	71.1	60.7	*
2	69.5	65.8	*	65.3	68.7	75.1	67.3	63.7	71.8	62.0	*
3	69.8	65.5	*	64.8	68.8	75.3	67.4	64.8	71.6	62.9	*
4	70.2	65.8	*	66.0	68.6	74.1	65.7	63.6	70.8	62.2	*
5	70.2	63.0	*	62.2	68.6	74.4	66.9	63.6	71.0	62.1	*
6	70.3	*	*	*	69.0	75.2	66.1	64.9	71.8	62.4	*
7	70.0	68.3	*	*	68.9	74.8	68.2	63.9	71.0	62.5	*
8	67.0	63.8	*	*	66.7	73.2	65.6	62.2	69.4	60.4	*
9	68.5	65.7	*	*	68.1	74.8	66.9	63.8	70.8	60.0	*
10	*	66.8	*	*	68.9	75.4	68.5	65.2	72.0	61.9	*
11	*	66.8	*	68.2	68.4	74.3	67.2	63.6	71.4	62.0	*
12	*	67.1	*	65.6	68.7	74.1	68.4	64.6	70.8	62.2	*
13	*	67.6	*	66.8	69.0	75.5	67.5	65.9	71.8	62.9	*
14	*	66.7	*	65.6	68.5	74.7	66.0	64.3	71.2	62.4	*
15	*	65.7	*	64.3	67.1	74.2	64.0	63.3	70.4	60.5	*
16	*	66.8	*	65.2	69.1	75.4	65.6	65.1	71.8	62.3	*
17	*	67.0	*	65.5	68.3	74.8	67.1	63.4	71.6	61.8	*
18	*	66.8	*	65.4	68.5	74.6	67.1	64.0	71.4	62.2	*
19	*	66.3	*	65.2	69.0	74.8	69.1	64.0	71.4	62.7	*
20	*	65.2	*	64.7	70.2	74.5	67.0	62.2	69.8	60.9	*
21	*	65.1	*	64.5	69.6	74.6	66.8	62.1	70.1	60.9	*
22	*	64.1	*	63.2	68.0	74.7	65.7	61.2	70.5	60.1	*
23	*	66.4	*	65.4	68.7	75.2	67.2	63.0	71.6	61.1	*
24	*	66.8	*	63.3	69.4	75.0	67.9	64.2	71.6	62.4	*
25	*	67.1	*	67.4	69.0	74.7	65.0	64.9	71.3	62.2	*
26	*	66.6	*	65.8	69.2	74.6	68.0	64.9	71.3	61.7	*
27	*	66.4	*	65.4	68.5	75.2	67.4	64.9	71.8	61.9	*
28	*	66.6	*	65.4	68.8	75.4	64.6	64.7	72.2	62.6	*
29	*	64.4	*	63.8	66.6	73.1	65.3	64.3	69.7	59.7	*
30	*	66.6	*	65.3	68.3	74.0	66.7	63.2	71.0	61.8	*
31	*	66.1	*	64.6	68.0	73.7	65.6	63.5	71.2	61.9	*
<b>Month</b>	<b>69.9</b>	<b>66.5</b>	<b>*</b>	<b>65.8</b>	<b>69.1</b>	<b>75.2</b>	<b>67.4</b>	<b>64.4</b>	<b>71.7</b>	<b>62.3</b>	<b>*</b>

## Appendix A2 Continued

### Daily/Monthly CNEL Levels – October 2016

\* Not in Service

Day	RMT 14	RMT 16	RMT 17	RMT 18	RMT 19	RMT 20	RMT 21	RMT 22	RMT 23	RMT 24	RMT 25	RMT 26
1	64.5	62.4	63.3	59.5	60.2	58.9	55.2	63.8	62.1	62.6	61.0	62.5
2	66.0	64.1	64.8	59.7	62.8	61.1	57.7	64.9	63.6	64.4	62.6	63.9
3	66.3	65.1	64.6	56.5	61.4	61.2	58.2	65.2	63.3	64.3	66.7	63.6
4	65.4	64.7	65.5	57.3	62.4	60.3	57.4	64.0	62.5	63.5	62.4	63.7
5	66.2	64.1	64.7	58.4	61.1	60.6	58.2	64.6	62.5	63.6	67.2	63.7
6	66.3	66.0	65.3	58.0	59.9	61.3	58.2	64.9	63.0	64.0	62.8	63.5
7	64.8	64.0	64.7	60.9	61.6	60.5	56.2	63.6	61.4	63.0	61.3	62.7
8	63.5	61.7	62.4	61.0	59.8	58.0	54.3	62.7	59.7	60.5	59.4	60.7
9	64.6	63.2	64.1	60.9	60.2	59.6	56.0	63.5	64.3	62.3	61.0	62.7
10	65.9	64.3	64.9	64.3	63.3	61.2	58.0	65.3	63.3	64.2	62.7	64.1
11	65.4	64.4	65.1	57.6	59.1	60.6	57.3	64.6	62.7	63.8	62.1	64.2
12	66.0	64.8	65.3	59.6	59.7	61.2	57.7	64.5	62.6	63.4	62.6	62.6
13	66.5	65.1	65.8	58.7	57.5	61.6	58.6	65.3	63.8	64.7	63.1	64.7
14	65.7	64.3	65.1	59.4	58.2	60.9	57.0	64.0	62.5	63.4	62.8	63.7
15	64.9	63.1	63.9	59.5	55.1	59.9	56.5	63.4	62.9	62.3	61.6	63.2
16	66.0	64.2	65.2	58.5	57.4	61.7	58.1	65.5	64.5	64.5	62.9	64.4
17	66.3	64.6	65.4	56.8	60.5	61.0	57.8	67.3	63.7	63.9	62.9	64.1
18	66.4	64.7	65.0	63.1	61.9	61.1	58.0	64.8	63.2	64.1	62.9	63.9
19	65.7	64.4	64.8	63.9	63.1	61.2	56.6	64.3	62.8	63.5	61.8	63.3
20	63.9	64.1	63.9	64.0	64.9	59.2	55.0	63.0	61.1	65.9	59.7	59.8
21	63.6	63.8	63.6	63.1	64.8	58.7	54.3	62.4	61.3	62.2	60.0	60.7
22	65.2	62.7	62.6	61.3	62.0	58.8	55.9	63.0	61.7	63.1	60.2	61.2
23	65.3	64.0	64.7	61.3	62.9	60.3	56.2	64.6	63.5	63.9	61.0	58.5
24	66.0	64.5	65.5	62.0	63.7	62.1	58.1	66.3	64.3	65.1	62.7	59.6
25	66.2	64.6	65.5	58.1	54.3	61.3	58.6	65.5	63.3	64.1	63.1	63.6
26	66.1	64.5	65.1	64.3	63.4	61.2	58.0	64.5	62.8	63.8	62.8	64.0
27	66.5	64.0	64.9	62.0	63.3	60.6	58.1	64.4	62.5	63.4	62.9	60.5
28	66.2	64.3	65.2	57.2	55.3	61.5	57.6	65.2	63.8	64.7	62.6	62.6
29	64.7	61.9	62.9	57.4	58.9	59.7	56.2	62.8	60.8	61.5	61.0	61.7
30	65.4	64.1	65.0	58.1	61.4	60.5	56.9	65.1	63.1	64.0	61.7	61.2
31	65.4	63.7	64.5	58.3	60.3	61.3	58.2	66.9	62.7	63.6	62.6	63.4
<b>Month</b>	<b>66.1</b>	<b>64.6</b>	<b>65.2</b>	<b>61.2</b>	<b>61.9</b>	<b>61.2</b>	<b>57.8</b>	<b>65.2</b>	<b>63.4</b>	<b>64.2</b>	<b>63.1</b>	<b>63.4</b>

## Appendix A3

### Daily/Monthly CNEL Levels - November 2016

\* Not in Service

Day	RMT 1	RMT 2	RMT 3	RMT 4	RMT 6	RMT 7	RMT 9	RMT 10	RMT 11	RMT 12	RMT 13
1	*	67.0	*	65.2	69.1	74.2	65.5	64.2	71.4	62.2	*
2	*	66.5	*	65.4	69.9	74.8	65.2	66.5	71.6	62.8	66.2
3	*	66.1	*	65.4	70.6	74.8	68.8	63.9	71.4	62.5	65.4
4	*	65.1	*	65.2	69.5	75.9	68.6	63.0	73.4	61.7	66.0
5	*	62.3	*	63.7	67.4	75.6	68.1	62.1	72.9	60.7	66.1
6	*	66.1	*	64.8	68.4	74.8	68.3	62.9	72.1	60.9	65.7
7	*	67.0	*	66.0	69.3	75.5	69.5	64.0	72.4	62.3	66.8
8	*	65.1	*	64.2	69.1	74.0	66.9	64.5	70.3	61.6	64.5
9	*	61.9	*	68.1	70.5	75.7	68.7	62.7	73.6	62.4	63.6
10	*	64.0	*	62.3	70.1	75.2	68.2	62.1	72.3	61.6	65.4
11	*	65.8	*	62.9	70.2	74.1	68.9	66.2	70.5	61.8	64.8
12	*	63.6	*	60.0	67.9	72.5	65.1	62.5	69.5	61.5	63.6
13	*	65.2	*	63.1	70.3	75.0	65.7	64.9	71.8	*	64.6
14	*	65.6	*	65.2	68.6	74.7	68.7	63.3	71.8	*	*
15	*	65.7	*	67.3	69.5	75.5	70.1	64.3	72.6	62.6	66.6
16	*	67.1	*	65.8	69.0	74.0	66.9	63.8	71.2	62.6	65.5
17	*	65.7	*	64.8	70.3	74.9	65.2	65.0	71.7	64.1	65.6
18	*	66.0	*	64.7	71.1	75.2	68.0	62.6	71.2	62.4	65.0
19	*	65.2	*	64.6	68.0	73.0	65.3	62.0	69.9	61.1	63.7
20	*	67.2	*	66.2	69.8	74.9	69.0	64.4	71.9	63.0	66.2
21	*	67.0	*	65.5	70.1	74.3	67.8	68.3	71.5	64.3	66.1
22	*	67.5	*	66.2	69.8	75.5	69.8	65.5	72.2	64.0	67.1
23	*	68.0	*	66.5	70.3	76.0	66.4	66.0	72.3	64.1	67.3
24	*	62.3	*	61.5	68.5	72.1	64.6	62.0	68.6	59.3	63.0
25	*	64.3	*	63.5	69.6	73.2	66.6	61.5	69.0	60.9	63.0
26	*	68.4	*	66.5	70.3	74.7	69.3	71.5	72.1	63.7	66.4
27	*	69.0	*	69.1	71.0	75.4	69.4	69.7	72.6	65.0	67.9
28	*	67.9	*	68.0	71.1	76.4	70.6	65.2	73.6	64.2	67.5
29	*	66.6	*	65.8	69.7	74.9	65.6	64.3	72.0	62.2	66.0
30	*	67.0	*	65.1	70.1	74.2	66.5	63.6	71.0	62.9	65.3
<b>Month</b>	*	<b>66.7</b>	*	<b>66.0</b>	<b>70.2</b>	<b>75.3</b>	<b>68.4</b>	<b>65.7</b>	<b>72.3</b>	<b>63.1</b>	<b>66.2</b>

## Appendix A3 Continued

### Daily/Monthly CNEL Log – November 2016

\* Not in Service

Day	RMT 14	RMT 16	RMT 17	RMT 18	RMT 19	RMT 20	RMT 21	RMT 22	RMT 23	RMT 24	RMT 25	RMT 26
1	65.8	65.0	65.3	55.6	65.8	62.0	59.6	64.8	63.2	63.7	62.5	64.2
2	65.9	65.0	64.9	61.4	61.3	62.1	59.6	64.6	62.2	63.2	62.9	64.4
3	65.3	65.4	64.7	65.5	66.6	61.3	58.5	64.0	62.0	63.1	62.3	63.0
4	66.4	63.3	63.4	62.0	67.9	69.1	58.7	64.3	64.3	63.7	61.4	62.0
5	66.3	60.0	60.6	61.7	65.0	59.7	58.8	63.8	62.6	62.4	59.7	59.9
6	65.4	63.9	64.2	60.4	64.4	61.4	58.6	64.2	62.9	63.4	61.5	63.2
7	65.4	65.5	63.4	59.9	64.8	62.0	59.0	67.8	63.6	64.2	62.4	62.2
8	64.2	63.4	63.6	64.4	63.1	60.1	57.3	63.1	61.9	62.2	60.5	62.1
9	68.1	62.0	61.9	65.1	61.4	58.7	56.4	62.3	63.3	60.7	58.8	58.1
10	65.3	63.7	64.0	63.3	65.7	60.0	58.2	63.9	65.1	63.5	62.1	61.5
11	64.5	64.6	65.1	63.7	65.7	59.9	57.2	63.3	63.3	62.8	62.9	61.9
12	63.8	61.6	62.6	59.9	62.5	59.7	56.7	62.3	62.9	61.6	59.8	60.6
13	65.0	63.3	64.1	60.2	63.5	61.1	58.0	63.9	63.8	62.9	61.7	62.6
14	64.9	63.9	64.9	64.4	64.7	61.4	60.2	65.2	62.8	63.4	61.6	62.8
15	66.2	63.6	64.7	63.4	65.6	62.1	58.8	64.2	62.7	63.7	63.6	63.0
16	64.9	65.0	65.8	60.6	63.7	61.6	58.3	64.2	63.7	63.6	62.1	64.1
17	65.1	64.4	64.5	56.4	65.2	62.2	60.0	64.0	63.2	63.4	61.5	62.4
18	63.4	65.3	64.9	63.1	64.2	60.6	57.7	64.4	62.3	62.8	59.7	64.0
19	63.3	62.7	66.3	61.3	60.8	59.9	55.8	62.2	61.4	62.1	58.9	59.9
20	65.7	64.9	65.9	62.6	65.9	62.1	59.6	64.5	64.2	64.3	62.6	62.2
21	65.5	65.5	65.8	62.5	65.0	62.1	59.4	66.7	64.4	64.5	62.2	62.5
22	65.9	65.8	66.5	60.1	63.7	62.4	59.8	65.6	64.4	65.2	62.8	64.6
23	66.2	66.3	67.1	62.0	58.6	63.0	60.0	66.0	64.0	65.3	63.1	65.1
24	61.8	60.5	61.3	61.6	60.7	58.5	54.6	61.5	60.7	61.3	57.6	59.3
25	61.9	63.7	64.0	64.0	64.3	60.3	55.0	61.0	61.5	61.0	57.5	60.8
26	65.6	66.4	67.3	64.4	66.7	62.7	60.3	64.9	65.3	64.9	62.5	62.7
27	66.1	66.7	67.7	63.2	66.9	64.7	60.8	66.4	66.9	66.7	63.6	64.7
28	66.9	66.1	67.0	60.6	68.5	62.5	61.0	67.9	65.2	65.5	63.4	63.8
29	66.4	65.2	66.1	58.0	63.7	61.8	60.5	64.5	62.9	63.9	62.8	63.0
30	65.1	65.9	66.5	63.4	62.7	61.3	58.6	63.6	62.2	63.5	61.9	64.5
<b>Month</b>	<b>65.9</b>	<b>65.1</b>	<b>65.6</b>	<b>62.9</b>	<b>65.3</b>	<b>62.6</b>	<b>59.3</b>	<b>65.1</b>	<b>64.0</b>	<b>64.1</b>	<b>62.3</b>	<b>63.3</b>

## Appendix A4

### Daily/Monthly CNEL Levels – December 2016

\* Not in Service

Day	RMT 1	RMT 2	RMT 3	RMT 4	RMT 6	RMT 7	RMT 9	RMT 10	RMT 11	RMT 12	RMT 13
1	*	67.5	*	65.5	69.3	74.5	69.2	64.4	71.9	63.7	66.2
2	*	65.8	*	66.0	68.7	73.8	66.4	63.5	70.8	62.9	64.8
3	*	64.0	*	62.7	67.9	72.3	66.4	62.2	68.9	60.2	62.4
4	*	63.4	*	67.2	69.4	76.0	66.8	62.3	73.3	59.8	64.3
5	*	66.9	*	65.3	69.7	75.9	67.8	64.7	73.0	62.9	67.0
6	*	66.9	*	65.3	69.4	75.1	67.6	63.8	72.0	62.7	66.3
7	*	67.2	*	66.1	69.5	75.1	67.7	52.4	71.9	62.9	66.4
8	*	67.4	*	65.9	72.2	75.0	68.0	*	71.6	63.1	66.5
9	*	67.9	*	66.8	70.0	74.5	67.4	*	71.6	63.6	65.8
10	*	65.1	*	63.5	67.5	75.1	62.6	*	72.2	61.4	65.9
11	*	66.7	*	65.2	68.5	75.0	65.4	*	72.3	62.0	66.3
12	*	66.7	*	65.1	69.0	74.7	67.8	*	72.4	62.6	67.0
13	*	67.3	*	65.9	69.1	74.2	64.0	*	71.7	62.5	66.1
14	*	65.6	*	69.3	70.1	76.4	67.9	65.7	73.4	63.2	66.4
15	*	67.6	*	67.1	70.6	75.9	69.7	64.6	72.8	63.1	66.5
16	*	69.7	*	61.2	72.3	76.6	70.8	66.4	74.4	64.9	66.4
17	*	67.8	*	71.8	70.1	75.2	64.3	64.6	71.4	64.2	67.0
18	*	66.6	*	70.5	70.6	74.8	67.7	63.2	70.9	61.3	65.1
19	*	64.9	*	70.4	70.9	74.7	66.0	63.1	71.1	62.0	64.2
20	*	65.8	*	70.8	70.4	75.5	66.5	64.3	72.6	63.5	65.9
21	*	67.0	*	74.3	69.7	77.8	67.5	64.5	75.6	64.4	67.8
22	*	66.9	*	71.2	73.1	77.5	69.9	62.2	75.3	60.0	63.9
23	*	68.8	*	*	72.5	77.3	71.0	66.8	74.4	65.4	67.8
24	*	68.1	*	*	70.5	72.8	67.7	64.6	70.2	62.6	65.5
25	*	65.9	*	*	69.0	73.6	67.0	*	70.6	62.2	65.4
26	*	67.5	*	*	71.8	75.8	67.4	*	73.0	64.2	67.4
27	*	67.3	*	*	72.6	75.7	69.5	65.3	72.5	64.5	67.1
28	*	67.7	*	66.9	72.1	75.9	69.9	65.1	72.0	63.9	66.7
29	*	66.3	*	71.4	71.0	74.9	67.4	64.1	71.4	63.4	65.3
30	*	66.7	*	66.6	71.8	76.9	69.7	64.1	74.0	63.0	66.3
31	*	67.0	*	55.9	69.4	75.3	66.7	63.8	72.9	64.0	66.7
<b>Month</b>	*	<b>67.5</b>	*	<b>68.0</b>	<b>71.0</b>	<b>76.0</b>	<b>68.4</b>	<b>64.5</b>	<b>73.1</b>	<b>63.6</b>	<b>66.7</b>

## Appendix A4 Continued

### Daily/Monthly CNEL Log – December 2016

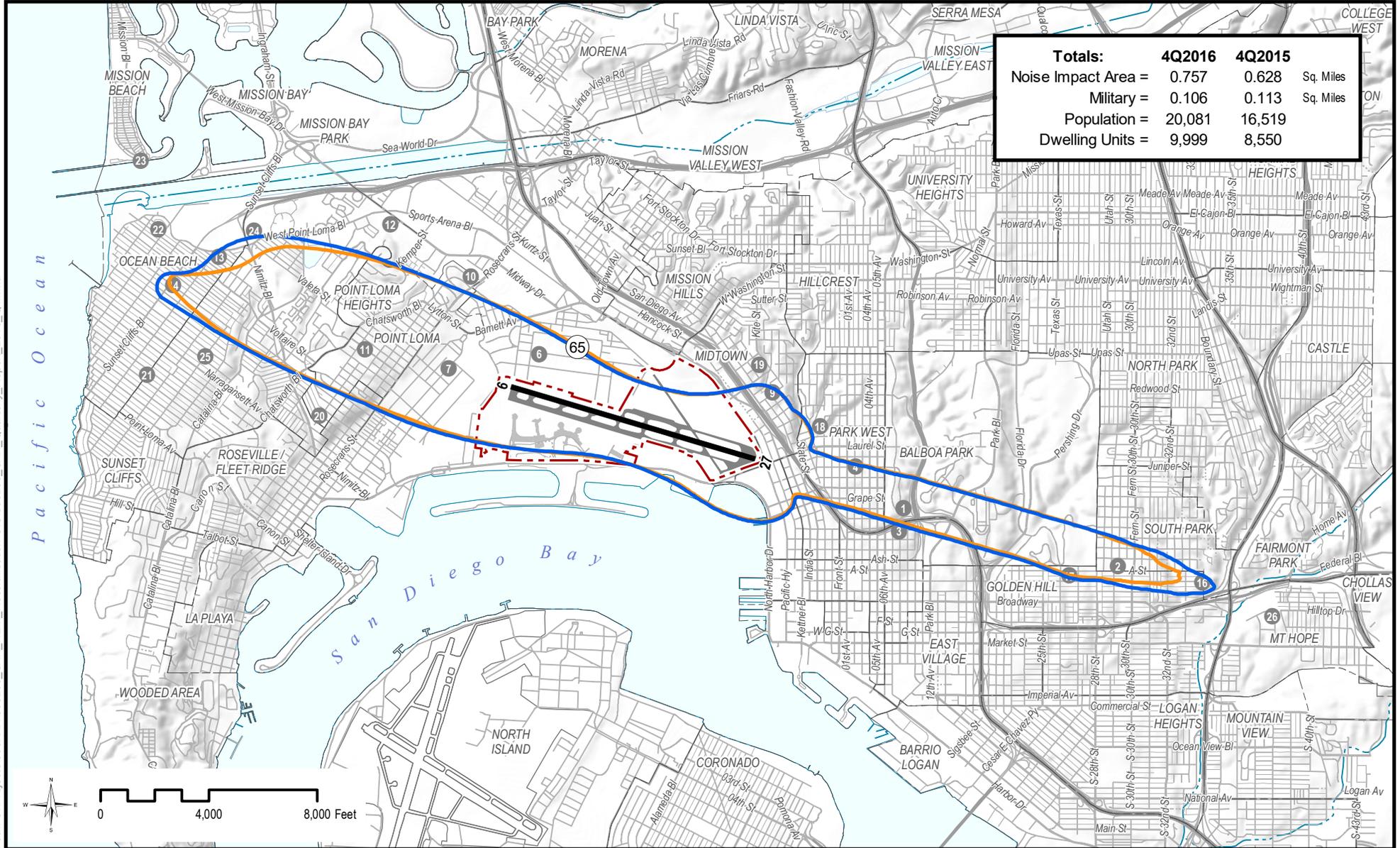
\* Not in Service

Day	RMT 14	RMT 16	RMT 17	RMT 18	RMT 19	RMT 20	RMT 21	RMT 22	RMT 23	RMT 24	RMT 25	RMT 26
1	65.9	65.7	67.4	60.7	66.0	62.3	59.6	64.6	63.2	64.3	62.8	64.2
2	65.2	64.3	67.4	63.5	62.9	61.2	59.5	63.3	61.3	62.8	61.6	61.9
3	63.4	63.2	62.8	63.0	62.3	58.8	56.0	60.9	59.5	60.2	59.6	60.5
4	68.1	61.3	62.3	62.8	63.4	59.8	57.9	62.8	61.9	62.0	60.9	59.8
5	66.6	65.6	66.2	58.1	65.9	62.5	59.6	66.1	64.9	65.2	62.7	63.5
6	66.2	65.2	67.3	58.1	65.0	61.9	61.1	64.9	63.7	64.3	62.9	63.6
7	65.9	65.9	67.2	61.1	*	61.8	60.2	65.0	63.5	64.5	63.2	64.4
8	66.1	65.6	66.6	62.9	*	62.3	60.1	65.2	62.8	64.3	63.1	64.6
9	65.6	65.5	67.4	57.2	*	62.0	58.9	64.1	61.8	63.6	62.4	64.3
10	65.3	62.5	63.8	53.4	*	60.9	57.3	64.3	62.0	63.2	61.2	61.9
11	66.3	64.1	65.6	55.6	*	61.8	59.0	65.1	62.7	63.9	62.4	61.6
12	66.4	64.8	67.0	60.1	*	62.2	59.9	69.4	63.5	64.8	63.5	64.3
13	65.7	64.9	67.1	58.0	*	62.5	59.4	64.6	62.9	63.9	62.7	64.0
14	68.1	63.5	64.7	65.4	*	62.3	59.8	65.1	62.5	64.0	63.7	61.7
15	66.3	65.8	66.9	62.2	*	62.1	58.9	64.7	63.8	65.0	48.3	59.9
16	67.8	67.8	68.2	67.8	*	68.8	61.2	65.5	65.3	65.6	*	57.8
17	65.9	66.6	66.7	58.5	*	62.8	59.4	65.4	63.5	64.6	61.6	64.6
18	64.4	65.3	65.4	61.7	*	60.7	57.5	63.6	61.1	62.8	60.6	63.6
19	63.8	64.2	64.4	61.2	*	59.9	56.3	66.2	60.6	62.7	60.1	62.1
20	65.2	64.5	64.9	58.2	*	61.6	58.5	64.4	63.1	64.7	61.7	63.4
21	69.6	64.6	66.1	64.3	*	62.4	59.8	66.2	63.9	65.4	*	*
22	67.4	66.8	66.9	70.5	*	*	55.6	62.4	60.6	59.9	*	*
23	*	68.1	67.3	64.8	*	*	62.7	66.1	67.4	66.5	*	*
24	64.4	66.0	66.8	64.8	*	*	61.6	64.5	64.6	64.1	62.4	*
25	64.4	64.0	64.6	55.8	*	*	59.3	63.8	63.2	63.5	61.9	*
26	66.3	65.8	66.4	59.2	*	*	59.4	65.7	64.5	65.5	62.4	*
27	65.8	66.0	67.1	66.4	*	63.9	59.8	65.5	64.3	65.6	62.1	*
28	65.5	67.2	67.1	66.7	*	62.8	58.8	64.9	64.3	64.9	62.6	64.8
29	64.4	65.3	65.9	64.7	*	60.8	57.3	63.6	63.9	64.1	60.1	63.2
30	68.7	65.1	66.5	67.0	*	61.6	59.1	64.4	63.7	63.9	62.3	*
31	70.1	64.5	65.3	61.6	*	62.0	59.2	65.2	63.5	64.4	64.2	*
<b>Month</b>	<b>66.8</b>	<b>65.9</b>	<b>66.8</b>	<b>64.0</b>	<b>65.0</b>	<b>63.0</b>	<b>59.9</b>	<b>65.5</b>	<b>63.9</b>	<b>64.7</b>	<b>62.4</b>	<b>62.1</b>

## Appendix B

### ANOMS Commercial Flight Operations Mix - 4<sup>th</sup> Quarter 2016

Aircraft Type	Air Canada Rouge	Alaska	Allegiant	American	British Airways	Delta Air Lines	Compass	Frontier	Hawaiian	Japan	JetBlue	SkyWest	Southwest	Spirit	Sun Country	United	Virgin America	WestJet	Atlas	FedEx	UPS	Total Arrivals	Total Operations	
A306																				1		1	2	
A319	74		75	7		92		157						154		242	75						876	1752
A320				81		292		83			422			252		498	437						2065	4130
A321	31			1206		3					10			51									1301	2602
A332									93														93	186
A333						3																	3	6
B712						32																	32	64
B733													1047										1047	2094
B734		61																					61	122
B736																			3				3	6
B737		64											5778	6	50	60	36						5994	11988
B738		735		904		345							1697		56	511	36						4284	8568
B739		750				306										992							2048	4096
B744					77																		77	154
B752			6	4		281										11				83	17		402	804
B753						70										1							71	142
B762																			63				63	126
B763				1		9													1	198	108		317	634
B764						18										3							21	42
B772					2																		2	4
B773					11																		11	22
B788										92													92	184
CRJ2												19											19	38
CRJ7												443											443	886
CRJ9												41											41	82
DC10																				46			46	92
E170							64					6											70	140
E175							94					172											266	532
MD10																				1			1	2
MD11																				6			6	12
MD80+			35			1																	36	72
MD90+						202																	202	404
<b>Total</b>	<b>105</b>	<b>1610</b>	<b>116</b>	<b>2203</b>	<b>90</b>	<b>1654</b>	<b>158</b>	<b>240</b>	<b>93</b>	<b>92</b>	<b>432</b>	<b>681</b>	<b>8522</b>	<b>463</b>	<b>106</b>	<b>2318</b>	<b>512</b>	<b>75</b>	<b>64</b>	<b>335</b>	<b>125</b>	<b>19994</b>	<b>39988</b>	
BE99																			68				68	136
C208																				211			211	422
DH8D		199																					199	398
SW3/4																					64		64	128
<b>Total</b>	<b>105</b>	<b>1809</b>	<b>116</b>	<b>2203</b>	<b>90</b>	<b>1654</b>	<b>158</b>	<b>240</b>	<b>93</b>	<b>92</b>	<b>432</b>	<b>681</b>	<b>8522</b>	<b>463</b>	<b>106</b>	<b>2318</b>	<b>512</b>	<b>75</b>	<b>132</b>	<b>546</b>	<b>189</b>	<b>542</b>	<b>1084</b>	



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- 2016 4th Quarter 65 dB CNEL Contour
- 2015 4th Quarter 65 dB CNEL Contour
- Airport Property
- Runway
- # RMT Site Location
- Roads
- - - River / Stream

**Comparison of the 2015 and 2016 Fourth Quarter 65 dB Community Noise Equivalent Level (CNEL) Contours**