

***LOS ANGELES INTERNATIONAL AIRPORT NOISE POLLUTION: A CASE STUDY OF
THE IMPACT ON THE CITY OF INGLEWOOD***

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EXECUTIVE SUMMARY

- The Los Angeles International Airport (LAX) has been working on mitigating the impact of aircraft noise pollution on the community of Inglewood for over three decades. Statistics suggests an increase of passenger traffic in the last three years. The increase in trend seems to have worsened noise pollution and increased the noise impact area in Inglewood.

- With the City of Inglewood no longer participating in LAX Roundtable meetings, there seems to be increasing disconnects in aircraft reduction decision-making which added value to the Inglewood community.

- Of the approximately 8,700 dwellings eligible for soundproofing in Inglewood, only 4,000 have been serviced to date. Although funding for residential sound insulation program is not an issue, the condition of waiving rights to sue remained a key constraint up until early this year.

Recommendations to remedy for the above opportunities are as follow:

1. The City of Inglewood and its residents should realize that their participation is an invaluable key component in aircraft reduction decision-making. Inglewood representatives should actively participate at LAX Roundtables and frequently report to Inglewood stakeholders. Partnership with a third party entity such as the Collaborative Team that has helped push environmental justice in Southern California should be considered to ensure problem mediation.

2. With the waiver of rights to sue lifted, LAX representatives in collaboration with the City should offer a citywide outreach program through workshops and TV/radio advertisement to increase the benefit awareness of sound insulation program and its recent changes.

3. With this being an on-going issue, the City of Inglewood should engage with religious and community leaders to establish educational activities in the matter of noise pollution and in collaborating with city officials. This will help establish a closed-loop.

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I. INTRODUCTION

When sound interferes with normal activities, it is considered an annoyance. That annoyance can have major repercussions to one's overall health. Studies have shown that there are direct links between noise and health such as stress related illnesses, high blood pressure, speech interference, hearing loss, sleep disruption, and lost productivity (EPA, 2011). Aircraft noise is a serious yet often unappreciated and neglected form of pollution. The City of Inglewood (Inglewood)'s close proximity to Los Angeles International Airport (LAX), the sixth busiest airport in the world and third busiest in the United States, makes it vulnerable to aircraft noise pollution. LAX has more than 565 daily flights to 81 domestic cities. The airport also caters to more than 1,000 weekly nonstop flights to 66 international destinations on more than 75 air carriers (LAWA, 2011a). Although LAX has been mitigating its aircraft noise impact on Inglewood for over 30 years, the noise pollution seems to be getting worse with LAX's increasing air traffic activities. In this research paper, I will provide an overview of the trend in air traffic activities at LAX, discuss LAX's noise mitigation program, and finally discuss the impact of LAX's noise pollution on Inglewood.

II. LAWS & REGULATIONS

The current method of regulating airport noise pollution is a complicated web of federal, state, and local legislative and judicial decisions. Following is an overview of how noise pollution is defined and regulated at the Federal and State (California) levels.

II. A. U.S. Noise Control Act of 1972

In 1972, the Congress declared that it was the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health and welfare (Noise Control Act, 1972). The Office of Noise Abatement and Control (ONAC) was created within the

Environmental Protection Agency (EPA) to oversee the impact of noise on the general public. In 1982 funding to ONAC ceased; and consequently, citizens were deprived of federal protection against noise and its harmful effects. Without funding, ONAC was not able to administer a national noise assessment program to identify trends in noise exposure and response nor was it able to develop and publish information and public education materials on the health effects of noise. As far as aircraft noise pollution, the U.S. Congress authorized the Federal Aviation Administration (FAA) to devise programs to insulate homes near airports. FAA is the agency that is responsible for the safe operation of all aircrafts. Airport proprietors may manage the airports and the terminals, but the FAA governs how and where airplanes move on the ground and in the air. In 1990, the Congress passed the Aircraft Noise & Capacity Act (ANCA) which makes it difficult for any airport to impose a new noise restriction. One of the ANCA provisions prohibits airports from imposing new noise or operational access restrictions on aircraft without FAA's approval. To obtain FAA's approval to implement any new restriction, an airport must conduct a Federal Aviation Regulations Part 161 Study and show that six statutory conditions are met (D. Chan, personal communication, December 7, 2011). Lack of funding prevents EPA from conducting a study of the impact of aircraft noise on major metropolitan areas and recommending new measures the FAA could implement to mitigate these impacts.

II. B. California Noise Control Act of 1973

California Health and Safety Code Sections 46000 – 46080 state:

- Excessive noise is a serious hazard to the public health and welfare.
- Exposure to certain levels of noise can result in physiological, psychological, and economic damage.

- There is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas.
- The State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise.
- All Californians are entitled to a peaceful and quiet environment without the intrusion of noise which may be hazardous to their health or welfare.

II. C. Regulation of Noisy Airports in California

Without intending to prevent an airport proprietor from setting more stringent standards, the State of California's standard for acceptable level of aircraft noise for reasonable persons residing in the vicinity of airports is 65 decibels (dB) Community Noise Equivalent Level (CNEL). "This level has been chosen for reasonable persons residing in urban residential areas where houses are typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction (California Noise Standards, 2011)." Any area that receives noise at or above this level is referred to as noise impact area. Airport proprietors are required to develop and implement a program to reduce the airport's noise impact area "to an acceptable degree in an orderly manner over a reasonable period of time (California Noise Standards, 2011)." Another requirement for airports deemed to have noise problems is to produce quarterly contour maps in order to identify and validate the boundary of the noise impact area and evaluate progress of efforts to mitigate noise in the impact area.

III. SETTING: LOS ANGELES INTERNATIONAL AIRPORT

III. A. Overview

Southern California's climate, scenery, history, wildlife and cultural diversity make it one of the top destinations in the United States. In 2005, the city of Los Angeles had appealed for commercial airport at the former Marine Corps Air Station El Toro (El Toro) after Orange County voters restricted any type of airport to be developed at El Toro in 2002 but the pleas were turned down. Los Angeles officials felt that this decision would be regretted decades later when the region is struggling to accommodate demand for passenger and cargo air services. They had hoped that developing a commercial airport at El Toro would help absorb some traffic from LAX (California Aviation Alliance, 2011). Numerous studies over the past several decades have addressed the inadequacy of John Wayne Airport (JWA) to handle the long term commercial aviation needs of Orange County. JWA is believed to never be developed to a level adequate to serve all of Orange County generated air transportation demand and seemingly no feasible alternative airport site can be identified and successfully implemented to serve Orange County. Hence, LAX remains the gateway to the West Coast and the number one international gateway to Asia/Pacific. LAX is part of a unique system of three airports (Los Angeles International Airport, LA/Ontario International and Van Nuys general aviation) owned and operated by Los Angeles World Airports (LAWA). LAWA is a proprietary department of the City of Los Angeles but receives no funding from the City's general fund (LAWA, 2011a). LAX creates, attracts and supports economic activity throughout Southern California. There are about 59,000 jobs on or near the airport directly attributable to LAX operations and approximately 408,000 jobs throughout the region are also attributable to LAX. One in twenty jobs in Southern California is attributed to LAX operations (LAWA, 2011a).

In 2010, LAX had a 4.5 percent increase in total passenger volume with 59,069,409 passengers compared to 56,520,843 passengers in 2009. There was a 5.5 percent increase in international travel at LAX to 15,935,264 passengers in 2010 from 15,100,930 passengers in 2009 (LAWA, 2011a). The increase in international travel is encouraged for the economy of Southern California. A 2007 study by the Los Angeles Economic Development Corporation stated that “international flights make a substantial contribution to the economy of Southern California, adding \$82.1 billion in total economic output, plus 363,700 direct and indirect jobs with annual wages of \$19.3 billion in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura Counties (LAWA, 2011a).” However, with these economic benefits also come impacts such as aircraft noise on the densely populated areas bordering the airport. As shown on the below noise management timeline, LAX has been undertaking measures to effectively reduce noise impacts since 1959 in order to balance the needs of airport users while maintaining the quality of life of airport neighbors.

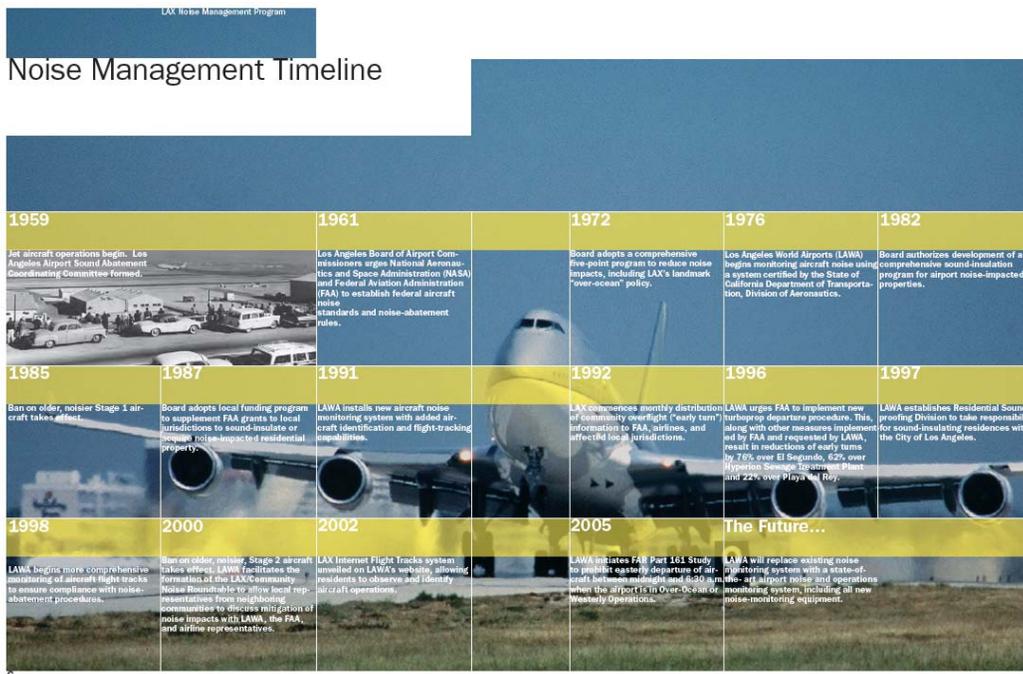


Figure 1 – Noise Management Timeline
Source: D. Chan, personal communication, December 7, 2011

III. B. Air Traffic Statistics

Despite the September 11, 2001 terrorist attacks, the unprecedented fuel prices and the worsening economic recession negatively impacted the US aviation industry by causing a decrease in air traffics, LAX Volume of Air Traffic statistics for the past three years suggest that passenger traffic totals have been increasing. Traffic analysis shows that low cost carriers have been largely responsible for strong passenger growth and increased passenger load at a number of regional airports (Graham and Dennis, 2006). This is true at LAX as generally low fares airlines tickets are offered at LAX combined with a wider range of arrivals and departures times when compared to other local airports in Southern California. Also, the majority of air cargo at LAX arrives and departs in the bellies of passenger aircraft, allowing airlines serving LAX to offer some of the lowest airfares to travelers. But while passenger traffic totals have been increasing, air cargo which had greatly increased from 2009 to 2010 has been decreasing in 2011. The decreased numbers of air cargo in 2011 are however still higher than the numbers in 2009. The decrease occurred in both freight and mail categories for domestic and international air cargo traffic. Figures 2 and 3 below show the volume of air traffic at LAX for the months of September 2009, 2010 and 2011. The increase in passenger traffic totals occurred in all three categories (scheduled carriers, scheduled commuters and charter) for both domestic and international passenger air traffic. According to David Chan, Environmental Specialist II at LAWA, “any increase in passenger traffic does not directly equate to a similar increase in number of aircraft operations as load factors have increased significantly and the aircraft fleet mix has changed as well (D. Chan, personal communication, December 7, 2011).”

**Los Angeles World Airports (LAWA)
Volume of Air Traffic (VOAT)
Los Angeles International Airport**

	September 2009			Calendar Year to Date September 2009		
	<i>Domestic</i>	<i>International</i>	<i>Total</i>	<i>Domestic</i>	<i>International</i>	<i>Total</i>
Passenger Traffic Totals						
Scheduled Carriers						
Departures	1,502,446	603,927	2,106,373	14,369,355	5,570,033	19,969,388
Arrivals	1,509,838	611,865	2,121,703	14,318,919	5,641,115	19,960,034
Total	3,012,284	1,215,792	4,228,076	28,718,274	11,211,148	39,929,422
Scheduled Commuters						
Departures	132,054	4,316	136,370	1,222,807	41,880	1,264,687
Arrivals	139,512	4,444	143,956	1,250,918	42,400	1,293,318
Total	271,566	8,760	280,326	2,473,725	84,280	2,558,005
Charter						
Departures	942	140	1,082	8,301	5,238	13,539
Arrivals	872	295	1,167	6,515	5,021	11,536
Total	1,814	435	2,249	14,816	10,259	25,075
Grand Total	3,285,664	1,224,987	4,510,651	31,206,815	11,305,687	42,512,502
	September 2010			Calendar Year to Date September 2010		
	<i>Domestic</i>	<i>International</i>	<i>Total</i>	<i>Domestic</i>	<i>International</i>	<i>Total</i>
Passenger Traffic Totals						
Scheduled Carriers						
Departures	1,535,547	620,467	2,156,014	14,643,483	5,959,931	20,603,414
Arrivals	1,546,068	634,493	2,180,561	14,505,452	6,052,262	20,557,734
Total	3,081,615	1,254,960	4,336,575	29,148,935	12,012,213	41,161,148
Scheduled Commuters						
Departures	169,919	3,384	173,303	1,516,145	39,495	1,555,640
Arrivals	179,771	3,450	183,221	1,555,827	39,133	1,594,960
Total	349,690	6,834	356,524	3,071,972	78,628	3,150,600
Charter						
Departures	636	295	931	12,245	4,769	17,014
Arrivals	751	614	1,365	9,409	4,932	14,341
Total	1,387	909	2,296	21,654	9,701	31,355
Grand Total	3,432,692	1,262,703	4,695,395	32,242,561	12,100,542	44,343,103
	September 2011			Calendar YTD January to September 2011		
	<i>Domestic</i>	<i>International</i>	<i>Total</i>	<i>Domestic</i>	<i>International</i>	<i>Total</i>
Passenger Traffic Totals						
Scheduled Carriers						
Departures	1,585,878	683,766	2,269,644	15,075,033	6,299,944	21,374,977
Arrivals	1,576,842	683,758	2,260,600	15,115,220	6,353,055	21,468,275
Total	3,162,720	1,367,524	4,530,244	30,190,253	12,652,999	42,843,252
Scheduled Commuters						
Departures	216,922	3,339	220,261	1,930,319	32,061	1,962,380
Arrivals	225,382	3,588	228,970	1,985,243	32,661	2,017,904
Total	442,304	6,927	449,231	3,915,562	64,722	3,980,284
Charter						
Departures	368	0	368	10,075	2,605	12,680
Arrivals	445	0	445	4,136	3,314	7,450
Total	813	0	813	14,211	5,919	20,130
Grand Total	3,605,837	1,374,451	4,980,288	34,120,026	12,723,640	46,843,666

Figure 2 – Volume of Air Traffic – Passenger Traffic Totals
Sources: <http://www.lawa.org/uploadedfiles/LAX/statistics/voat-0911.pdf>
<http://www.lawa.org/uploadedfiles/LAX/statistics/voat-0910.pdf>
<http://www.lawa.org/uploadedfiles/LAX/statistics/voat-0909.pdf>

**Los Angeles World Airports (LAWA)
Volume of Air Traffic (VOAT)
Los Angeles International Airport**

	September 2009			Calendar Year to Date September 2009		
	<i>Domestic</i>	<i>International</i>	<i>Total</i>	<i>Domestic</i>	<i>International</i>	<i>Total</i>
Air Cargo (Tons) Cargo figures may not add up due to rounding						
Freight						
Departure	30,562	31,821	62,383	266,078	273,667	539,746
Arrival	29,450	49,243	78,692	239,279	358,358	597,637
Total	60,012	81,064	141,076	505,358	632,025	1,137,383
Mail						
Departure	1,814	869	2,684	16,178	9,850	26,028
Arrival	1,242	684	1,927	11,296	6,067	17,363
Total	3,057	1,554	4,610	27,474	15,937	43,411
Grand Total	63,068	82,618	145,686	532,832	647,962	1,180,794
September 2010						
Calendar Year to Date September 2010						
	<i>Domestic</i>	<i>International</i>	<i>Total</i>	<i>Domestic</i>	<i>International</i>	<i>Total</i>
Air Cargo (Tons) Cargo figures may not add up due to rounding						
Freight						
Departure	31,752	37,008	68,760	282,517	321,126	603,643
Arrival	30,399	52,109	82,508	272,090	505,208	777,298
Total	62,151	89,117	151,268	554,606	826,335	1,380,941
Mail						
Departure	2,341	1,891	4,232	21,153	13,618	34,771
Arrival	1,357	590	1,946	11,406	5,734	17,140
Total	3,698	2,481	6,178	32,558	19,353	51,911
Grand Total	65,849	91,597	157,446	587,165	845,687	1,432,852
September 2011						
Calendar YTD January to September 2011						
	<i>Domestic</i>	<i>International</i>	<i>Total</i>	<i>Domestic</i>	<i>International</i>	<i>Total</i>
Air Cargo (Tons) Cargo figures may not add up due to rounding						
Freight						
Departure	30,289	39,941	70,230	272,143	357,748	629,892
Arrival	29,003	44,868	73,871	259,199	426,843	686,042
Total	59,292	84,809	144,101	531,343	784,591	1,315,934
Mail						
Departure	2,165	2,123	4,288	21,023	17,685	38,708
Arrival	1,687	555	2,242	14,160	4,792	18,952
Total	3,852	2,679	6,531	35,183	22,477	57,660
Grand Total	63,144	87,488	150,631	566,526	807,068	1,373,594

Figure 3 – Volume of Air Traffic – Air Cargo (Tons)
Sources: <http://www.lawa.org/uploadedfiles/LAX/statistics/voat-0911.pdf>
<http://www.lawa.org/uploadedfiles/LAX/statistics/voat-0910.pdf>
<http://www.lawa.org/uploadedfiles/LAX/statistics/voat-0909.pdf>

III. C. Noise Impact Area

State of California’s standard for acceptable level of aircraft noise for reasonable persons residing in the vicinity of airports is 65 dB. The tables below extracted from the California State Airport Noise Standards Quarterly Report that LAX submits to the State of California Department of Transportation show the size of areas, number of dwellings as well as number of residents in noise impact area categorized by decibels level (65 dB, 70 dB and 75 dB). Comparing third quarter 2009 to third quarter 2010 (latest available data which was published on

November 28, 2011), there is a slight decrease in the size of noise impact area, number of dwellings and number of residents under 65 dB and 70 dB yet there was an increase under the 75 dB. However, comparing Q3 2009 in figure 4 to Q3 2010 in figure 5 of annual noise impact accumulated for Inglewood, there seems to have been an increase in acreage, number of dwellings and number of residents for multi-family units under CNEL 70dB level.

LOS ANGELES INTERNATIONAL AIRPORT
 Third Quarter 2009
 Incompatible Land Use
Annual Noise Impact Accumulated by Noise Zone: CNEL 65, 70, and 75+

3Q09	Total Cumulative Noise Impact Areas - All Jurisdictions											
	CNEL 65dB and Above				CNEL 70dB and Above				CNEL 75dB and Above			
	Land Use	Dwelling			Dwelling			Dwelling				
	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population
Single Family	451	3211	3178	10574	109.1	746	732	2872	3	13	13	47
Multi Family	408.9	9216	2113	30219	107.4	2277	511	8537	7.5	224	24	518
Mobile Home	0.4	1	1	3	0	0	0	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0	0	0	0	0
Churches	0	0	0	0	0	0	0	0	0	0	0	0
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0
Total Incompatible	860.2	12428	5292	40796	216.5	3023	1243	11409	10.5	237	37	565

3Q09	Total Cumulative Noise Impact Areas - City of Inglewood											
	CNEL 65dB and Above				CNEL 70dB and Above				CNEL 75dB and Above			
	Land Use	Dwelling			Dwelling			Dwelling				
	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population
Single Family	155.6	1136	1103	3855	18	141	127	604	0	0	0	0
Multi Family	184.4	4011	958	13472	27.5	667	106	2930	0	0	0	0
Mobile Home	0.4	1	1	3	0	0	0	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0	0	0	0	0
Churches	0	0	0	0	0	0	0	0	0	0	0	0
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0
Total Incompatible	340.4	5148	2062	17331	45.6	808	233	3534	0	0	0	0

Figure 4 – Third Quarter 2009: Annual Noise Impact Accumulated by Noise Zone. Published January 28, 2011
 Source: <http://www.lawa.org/uploadedFiles/LAX/pdf/3q09-Quarterly-Report.pdf>

LOS ANGELES INTERNATIONAL AIRPORT
 Third Quarter 2010
 Incompatible Land Use
 Annual Noise Impact Accumulated by Noise Zone: CNEL 65, 70, and 75+

3Q10	Total Cumulative Noise Impact Areas - All Jurisdictions											
	CNEL 65dB and Above				CNEL 70dB and Above				CNEL 75dB and Above			
	Land Use	Dwelling			Land Use	Dwelling			Land Use	Dwelling		
	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population
Single Family	401.1	2867	2837	9745	91.8	638	624	2693	3.6	18	18	81
Multi Family	372.7	8542	1937	28345	105.9	2206	506	8686	8	165	20	513
Mobile Home	0.4	1	1	3	0	0	0	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0	0	0	0	0
Churches	0	0	0	0	0	0	0	0	0	0	0	0
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0
Total Incompatible	774.2	11410	4775	38094	197.7	2844	1130	11379	11.6	183	38	594

3Q10	Total Cumulative Noise Impact Areas - City of Inglewood											
	CNEL 65dB and Above				CNEL 70dB and Above				CNEL 75dB and Above			
	Land Use	Dwelling			Land Use	Dwelling			Land Use	Dwelling		
	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population	Acres	Units	Parcels	Population
Single Family	122.3	899	869	3228	17.1	134	120	602	0	0	0	0
Multi Family	147.8	3266	782	11384	29.1	686	114	3048	0	0	0	0
Mobile Home	0.4	1	1	3	0	0	0	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0	0	0	0	0
Churches	0	0	0	0	0	0	0	0	0	0	0	0
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0
Total Incompatible	270.5	4166	1652	14613	46.3	820	234	3650	0	0	0	0

Figure 5 – Third Quarter 2010: Annual Noise Impact Accumulated by Noise Zone. Published November 28, 2011
 Source: <http://www.lawa.org/uploadedFiles/LAX/pdf/3Q10%20Quarterly%20Report.pdf>

III. D. LAX’s Noise Management Program

As shown in Figure 1- Noise Management Timeline, efforts to reduce noise from LAX go back to 1959. Since then, several initiatives have been put in place to reduce or limit aircraft noise at LAX:

- *No aircraft turns over communities before reaching the shoreline*
- *Limit when aircraft engine maintenance can be performed*
- *Restrict specific aircraft operations at imperial terminal*
- *Monitoring aircraft flight to ensure compliance*
- *Use runways further from Communities for departures – during the daytime and evening hours, the two inner runways are used for takeoffs and the two outer runways (closer to neighboring communities) are used for landings to reduce noise impacts.*

- Keep late night/early morning arrivals and departures over the ocean:

In 2006, Germany's Federal Environmental Agency published a research in Berlin showing that even when you are asleep, your ears, brain and body continue to react to sounds, raising levels of stress hormones. However, if these stress hormones are in constant circulation, they can cause long-term physiological changes that could be life-threatening resulting in anything from heart failure and strokes to high blood pressure and immune problems (The Telegraph, 2007). One of LAX's noise abatement flight procedures is known as Over-Ocean Operations. From midnight to 6:30a.m., all aircrafts arriving at LAX must approach from over the ocean unless FAA Air Traffic Control determines that weather conditions are unsafe for such operations. This procedure provides close-in communities to the east of the airport, including Inglewood, with some noise relief from arriving aircrafts during the noise sensitive hours (D. Chan, personal communication, December 7, 2011).

- Residential Soundproofing Program:

In accordance with the State of California's requirement that airport proprietors develop and implement a program to reduce the airport's noise impact area to an acceptable degree in an orderly manner over a reasonable period of time, LAX has a Residential Soundproofing Program consisting of soundproofing and property acquisition/land recycling.

*Soundproofing:

- Installation of acoustically rated noise-reducing products in windows and doors.
- Addition of insulations in attics, and installation of baffles at attic vents.
- Installation of Glass Fireplace Doors and Chimney Top Dampers.
- Installation of new HVAC systems or improvement of existing systems.

* Property Acquisition or Land Recycling:

- Acquisition of incompatible residential properties.
- Re-zoning of properties for commercial/industrial or other airport-compatible use.

LAWA manages the LAX Residential Soundproofing Program and eligible properties are treated based on the noise impact level (normally, the higher the noise impact, the higher the priority).

LAWA provides guidelines to the other jurisdictions that have their own soundproofing programs to recommend that the most impacted areas get mitigated first then the less impacted areas at the boundary. So far, the Residential Soundproofing Program is only for people living within LAX's 65dB and above CNEL noise eligibility contour. LAWA is evaluating whether or not to extend eligibility contour down to people living within 60 dB and above CNEL noise contour. In addition to soundproofing and property acquisition, LAWA has also assisted neighboring communities with two sound barriers along portions of LAX. Consequently, areas directly behind the walls clearly have reduced airport noise levels (D. Chan, personal communication, December 7, 2011).



Figure 6 – Landscaped Earthen and Concrete Sound Barrier (above)/ Source: D. Chan, personal communication, December 7, 2011

III.E. LAX’s Noise Mitigation Program Funding and Progress

LAX’s noise mitigation program is funded by FAA Funding (Airport Improvement Program Grants) and LAWA Funding (passenger facility charges and airport revenues). Funding to date for the noise mitigation program is shown in the below table (Figure 7). The total funding is close to 1 billion dollars with LAWA’s funding being almost three times more than that of FAA’s. Despite the amount invested, noise pollution from LAX seems to worsen as the latest noise complaint report shows an increase in residents’ complaints.

Los Angeles International Airport (LAX)				
	Dwellings Mitigated	Dwellings to be Mitigated	LAWA Funding to Date	FAA Funding to Date
City of Los Angeles	SI 6,933	430	\$148,000,000	
	PA 1,824	749	\$380,000,000	
City of Inglewood	SI 4,000	4,700	\$67,611,851	\$100,243,372
	PA 1,600	816	\$32,952,184	\$73,485,084
County of Los Angeles	SI 1,923	4,358	\$38,000,000	\$42,000,000
City of El Segundo	SI 1,030	3,507	\$27,418,333	\$36,899,225
Grand Total			\$693,982,369	\$252,627,681

Figure 7 – LUMP Program Funding and Progress

Source: http://www.lawa.org/uploadedFiles/lax/noise/presentation/noiseRT_110914_LAX%20Land%20Use%20Mitigation%20Programs.pdf

III.F. LAX’s Community Noise Roundtable

Since 2000, LAX has created a Community Noise Roundtable that meets once a month to “identify noise concerns in the surrounding communities and to recommend courses of action to LAWA, the FAA or other responsible entity that could reduce noise over affected communities without shifting noise from one community to another (LAWA, 2011b)”. The Roundtable membership consists of the FAA, the Air Transportation Association, LAWA Management, local elected officials and staff, representatives of congressional offices, and members of recognized

community groups. LAX's Roundtable has been establishing working relationships with other roundtables in order to:

- Stay abreast of how aircraft noise concerns are being addressed elsewhere;
- Avoid reinventing the wheel on issues relevant to the LAX Roundtable;
- Develop best practices approach to LAX Roundtable operation/work program; and
- Present a united front on issues of common concern at a national level (LAWA, 2011c).

The interaction and collaboration among interested parties represented at the Roundtable determine how effective the Roundtable's efforts are. One example of an issue brought up at the Roundtable is the Low Frequency Noise (LFN) from LAX that affects numerous communities, including those miles away from LAX. Because LFN travels far distances and is invisible to structures, it is very difficult to mitigate via sound insulation. And LAWA's current noise monitoring system does not have the ability to monitor LFN. The Roundtable recommended that the FAA conduct further research on the topic (LAWA, 2011d). This recommendation wouldn't have been designed had it not been for the participation of various stakeholders. And so, it is in the best interest of impacted communities to ensure that both local elected officials and members of recognized community groups show active participation in Roundtable meetings.

III. G. LAX's Noise Complaint Report

LAX has a noise complaint line (424-64-NOISE) available 24 hours a day, seven days a week and an online complaint form that allow it to track volume of complaints received. Although there are several options to gather feedbacks, the volume of complaints received may or may not tell the whole story as these options are more reactive and not every complaint is reported by the impacted residents. But so far, the below monthly and yearly comparisons of Aircraft Noise Community Response Report shows a 6% increase in individuals submitting noise complaints in

the month of August 2011 from the month of July 2011. Noise complaints received and noise disturbances reported saw a 21% and 19% increase respectively. The increase is even greater with a year to year comparison (10%, 86% and 87%). This increase in noise complaints seems to align with the increase in volume of air traffic mentioned above.

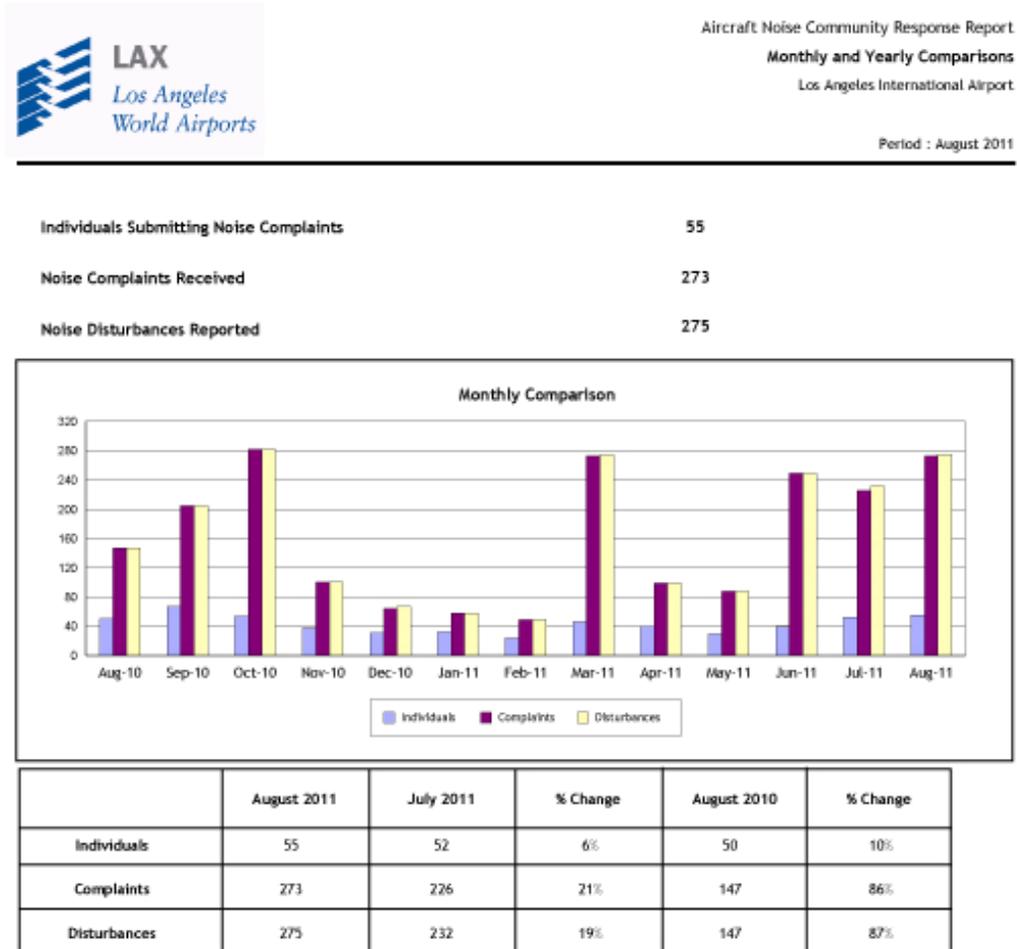


Figure 8 – Aircraft Noise Community Response Report
 Source: http://www.lawa.org/uploadedFiles/lax/pdf/ANCR_Report_201108.pdf

III. H. Benchmarking with San Francisco International Airport

As presented by Houshang Esmaili on San Francisco International Airport (SFO)’s Environmental Sustainability Program, SFO’s Noise Mitigation Program includes:

-Insulation of 15,000 Homes and Businesses within 62 dB Contour Map costing about \$183 Million;

-Implementation of gradual descent approach for incoming aircraft;

-Stakeholder input through a community roundtable; and

-Routing of landing and takeoff paths away from populated areas (Esmaili, 2011).

SFO's noise mitigation program seems similar to LAX's. Both airports have community roundtables as well as systems for routing of landing and takeoff paths away from populated areas. One of the differences between the two airports is that until now, LAX is only mitigating homes within 65dB CNEL as required by law while SFO includes communities within 62dB CNEL noise contour. The other difference is the implementation of gradual descent approach for incoming aircraft which is not mentioned at all in LAX Noise Management Program.

IV. CITY OF INGLEWOOD

IV.A. Overview

According to the United States Census Bureau, Inglewood has a total area of 9.1 square mile, with its downtown located 4.15 miles from LAX. The 2010 United States Census reported Inglewood population to be 109, 673 (U.S. Census Bureau, 2011). For more than five decades, Inglewood residents endured the constant impact of aircraft noise just above their rooftops. There was constant sound pollution just two miles from LAX which made daily living in Inglewood difficult (City of Inglewood, 2011a). Inglewood and neighborhood communities filed a lawsuit against LAWA that resulted in a settlement that now provides sound insulation for area homes with an approximately combined \$240 million to relieve affected communities with home insulation and air conditioning through the Residential Sound Installation Program (City of Inglewood, 2011a). The third quarter 2010 Annual Noise Impact Accumulated Report published

on November 28, 2011 and shown in figure 5 above shows 270.5 acres of Inglewood are in CNEL of 65dB and above which consist of 14,613 residents. An additional 46.3 acres of Inglewood are in CNEL 70dB and above consisting of 3,650 residents. So a total of 18,263 of the 109,673 Inglewood residents or 16.65 % of Inglewood residents have residences in CNEL of 65dB and above. Impacted Inglewood residents are not able to enjoy their homes, gardens and parks without constant interruptions from air traffic noise. People who are frequently outdoors are of greatest concern, including young children, retired people and people in certain outdoors occupations in warm climates like we find in Southern California. Many households no longer sleep with the windows open thanks to late night and early morning flights. Televisions and radios are far more often left on throughout the day, and children spend more time inside than ever before.

IV. B. Residential Sound Insulation Program

Inglewood's residential sound insulation program addresses aircraft noise on dwellings that are under the flight path of LAX. According to the City of Inglewood's website, the sound insulation program is offered at no cost to residents who live in communities with a CNEL of 65 dB and higher but priority is given to the most noise impacted homes (City of Inglewood, 2011b). This way of prioritizing is in alignment with LAWA's recommendation mentioned earlier. Figure 7 (LUMP Funding and Progress) above shows that to date only 4000 dwellings have been mitigated in Inglewood and about 4700 dwellings have yet to be mitigated. Many Inglewood residents were reluctant to have their residences soundproofed because there used to be a requirement to waive legal rights to sue LAX once homes were soundproofed. However, at the beginning of this year, Inglewood and LAX signed an agreement covering soundproofing of homes, a \$10-million upgrading of Century Boulevard and efforts to reduce air pollution (Los

Angeles Times, 2011). As a result of the agreement, LAX will no longer block any lawsuits by soundproofed homes occupants. Critics of LAX’s expansion maintain that LAX agreed to waive the requirement to pave the way to approval of the LAX master plan (Los Angeles Times, 2011).

IV. C. Inglewood Residents Lack of Participation

Residents of Inglewood have been dealing with aircraft noise pollution for over five decades. Some residents were born, some are being raised and others will likely spend their entire life in that degrading environment. These residents seem to have lost faith in the system as far as obtaining any relief; therefore, they have given up trying to make their voices heard. Figures 9, 10 and 11 below show that for the months of June, July and August 2011, only an average of 13% of complaints received came from Inglewood. A low percentage of complaints from Inglewood residents has been consistently reported this year.

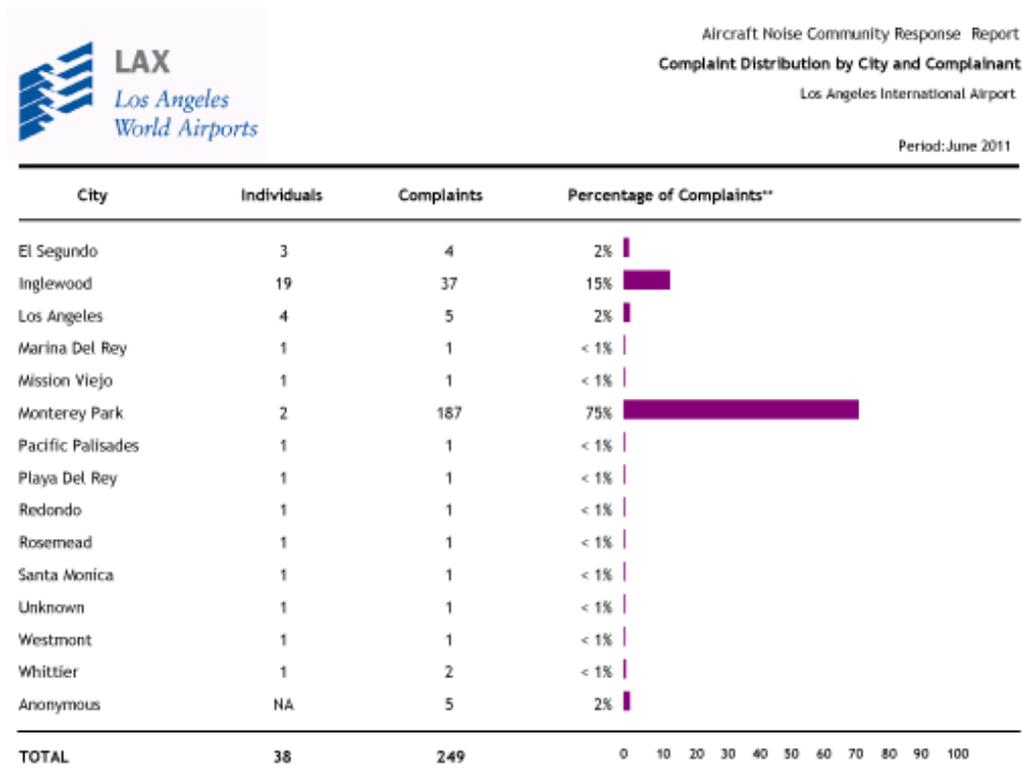


Figure 9 – Aircraft Noise Community Response Report – June 2011
Source: http://www.lawa.org/uploadedFiles/lax/pdf/ANCR_Report_201106.pdf

Period: July 2011

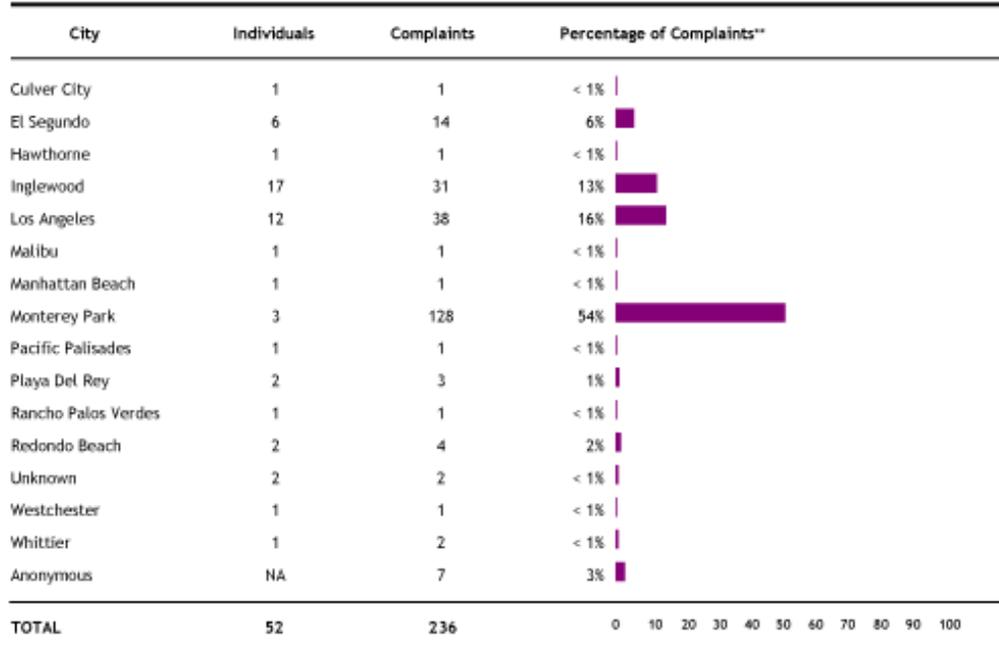


Figure 10 – Aircraft Noise Community Response Report – July 2011
 Source: http://www.lawa.org/uploadedFiles/lax/pdf/ANCR_Report_201107.pdf

Period: August 2011

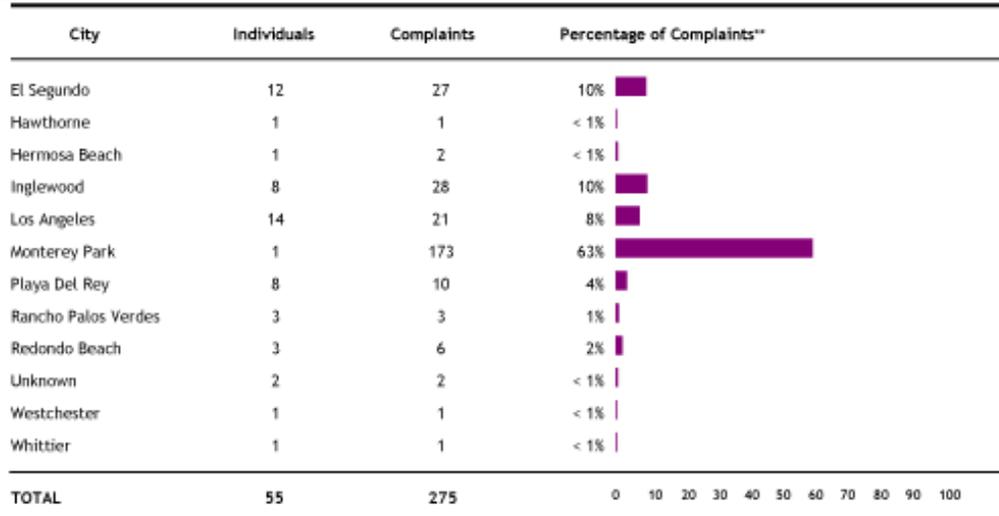


Figure 11 – Aircraft Noise Community Response Report – August 2011
 Source: http://www.lawa.org/uploadedFiles/lax/pdf/ANCR_Report_201108.pdf

IV. D Inglewood Residents at LAX's Community Roundtable

LAX has a Community Noise Roundtable but it seems as though the City of Inglewood had stopped participating in the Roundtable meetings. On March 11, 2009, the chairman of LAX/Community Noise Roundtable sent a correspondence to Inglewood's Mayor stating "...we also believed that we benefited greatly from the past participation by a representative from the City of Inglewood at Roundtable meetings. The members of the Roundtable would like to express appreciation for the past support, and encourage you and your staff to resume active participation in the Roundtable (LAWA, 2011e)". The last reported recap of the regular roundtable meeting on September 14, 2011 still did not list anyone representing the City of Inglewood. However during the same September meeting and as part of comments from the public, two members from the Second Avenue Block Club in the City of Inglewood expressed concern about some of the homes not included within the residential sound insulation program despite their location being in close proximity to homes within the boundary (LAWA, 2011f). It is unclear why the City of Inglewood stopped participating or did not have a representation at the Roundtable in recent years. However, some Inglewood residents have been participating as members of the general public. Reduction of aircraft-related noise from LAX depends on more than just a technological approach. Community involvement is crucial in establishing the dialogue necessary to determine effective noise-related decisions. Residents with first hand exposure to aircraft noise pollution should have a voice in solving the issue even if solutions to reduce noise from aircrafts arriving to LAX are currently limited.

V. CONCLUSION

Air travel is not always for leisure or a luxury. Sometimes, people have no choice but travel by air due to distance, emergency and time constraints in which cases, air travel is a necessity. To accommodate people's needs for air travel, airports must be built somewhere yet nobody wants airports built in their backyards. Moreover, the current method of regulating airport noise pollution is not helping residents welcome airports in their neighborhoods. LAX is doing due diligence in minimizing its aircraft noise pollution impact on surrounding communities. But in spite of the large fund set aside for residential soundproofing, only close to half of the identified impacted residences in Inglewood has been soundproofed to date. The City of Inglewood seems to have stopped attending LAX's Community Roundtable and residents do not seem to use the phone or online form to report noise complaints. The collective efforts by Inglewood residents, by the City of Inglewood and by LAX are crucial in further minimizing the adverse impacts of LAX's aircraft noise pollution and in protecting the quality of life for the current and future generations of Inglewood residents.

VI. RECOMMENDATIONS

Inglewood needs to solidify community organizing that informs, educates and engages residents to address aircraft noise pollution through collective action. Yes the fight has been long but choosing to be encouraged by past victories would help win current and future battle. My recommendations to the City of Inglewood and its residents are as follow:

- Resume Participation at the LAX Community Noise Roundtable:

Inglewood residents, the City of Inglewood and LAX need to work together in finding partnership-based solutions to further mitigate noise pollution as they are all participating in the roundtables as equal stakeholders in aircraft noise reduction decision-making.

Organized Inglewood community groups have to ensure that some members participate in the roundtables as Inglewood's recognized community group members and others as general public. As the City of Inglewood resumes participation in these roundtables, the City should also organize their own meetings, before and after the roundtables, to allow Inglewood general public as well as recognized community group members to gather and discuss insights, best-practices, proposed recommendations, and related activities pertaining to sustainable developments and practices in the city of Inglewood. These meetings should be mandatory for members of recognized community groups and city officials attending LAX roundtables. If held accountable, participating members will take an active role in roundtables.

- Adhesion to Residential Soundproofing Program

Inglewood residents should be notified of the lift in the waiver of the rights to sue so that more residents can participate in the program without feeling the pressure of constraint that came with the adhesion to the program before. LAX representatives and the City of Inglewood should offer citywide outreach program through workshops, television/radio/online advertisement to increase the benefit awareness of sound insulation program.

- Education on Aircraft Noise Issue

Aircraft noise pollution is an on-going issue in Inglewood; therefore, Inglewood residents (including the youth, seniors and those living outside of noise impact area) should stay informed and be well versed on environmental issues resulting from their close proximity to LAX as well as the laws/regulations on aircraft noise pollution. The City of Inglewood should engage with religious and community leaders (given their influences in the community) in order to promote continued education in the matter of noise pollution. The City, religious leaders and community leaders should sponsor regular free workshops where environmental experts and environmental

lawyers educate, inform and update residents on matter surrounding aircraft noise pollution.

Pamphlets reinforcing key points on aircraft noise pollution and written in layman's terms should be readily available to residents in churches, community halls, schools, and parks. Public libraries can also be leveraged as a place to run awareness activities (workshops, book clubs, after-school programs), leveraged to make readily available awareness of escalation/reporting process of noise pollution, and leveraged to establish dedicated areas for self-education and as a means to access LAWA's and the City of Inglewood websites.

- Partnership with third party entity

The City of Inglewood should partner with the Collaborative Team (consisting of Communities for a Better Environment, the Liberty Hill Foundation and a University-based Research Team) that has contributed to turning California into an epicenter of the environmental justice movement over the past several years and has helped add to the momentum for major policy reform in order to oppose expansion of LAX beyond its current physical footprint as well as oppose any detrimental change to air carrier or general aviation noise ordinances. The partnership with the third party entity will help the City of Inglewood receive proper attention on any issue deemed beyond the jurisdiction of LAWA, FAA, or any other influential agency around noise pollution.

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