Safe & Sound

in the City of El Segundo, CA

BY BARBARA BILLITZER

Keeping pace with today's aviation growth has been especially challenging for the Los Angeles International Airport (LAX). The Los Angeles World Airports (LAWA), who oversees the LAX and three other airports in Southern California, has worked to ensure capacity requirements are met.

However, in the mid-1990s, other issues surfaced regarding airport safety, airline congestion and noise affecting local homeowners.

In 1993, the city of El Segundo established its Residential Sound Insulation (RSI) Program for residential property owners most impacted by air traffic from LAX improvements to reduce noise within the home. These improvements, such as new windows, exterior doors, and attic insulation, are intended to help prevent exterior noise from interrupting daily activities, such as sleep, conversations, and watching television.

James O'Neill, Program Manager for the Residential Sound Insulation Program, has managed the El Segundo program since 2002. As an acoustical engineer, he has gained extensive experience in sound insulation programs over the years. Beginning in 1997, James served as an acoustical consultant, working on airport sound insulation programs in Chicago, Detroit, Burbank and Inglewood, CA.

In a joint interview, we are joined by Federal Aviation Administration (FAA) Airport Acquisition Specialist, Rick Etter, from the Office of Airport Planning and Programming, Community and Environmental Needs Division, and Ruben Cabalbag, P.E., Program Manager, FAA Western-Pacific Region, Airports Division.

What is the Residential Sound Insulation Program?

James: RSI is a city program that provides home improvements that reduce noise in those residences most affected by LAX noise. The program has been in place since 1993, and until now, has been funded mainly by grants from the FAA.

As part of the city's recent settlement with LAX, El Segundo is eligible to receive approximately $70 million over the next nine years to provide sound insulation in the city. Along with continued FAA grant funding, the combined funding will cover the costs necessary to insulate all eligible dwellings in the city.

Is this a voluntary program?

James: Yes, participation in the Residential Sound Insulation Program is voluntary and offered at no cost to the property owner. Only residential properties located within the 65 decibel (dB-A) Community Noise Equivalent Level (CNEL) contour, shown in the photo below, and built before 1998 are eligible for the program.

Properties are selected for groups based on the date a completed application and copy of the Property Deed and Zone in which the property is located.

What has changed since the settlement with LAX?

James: Before the settlement, the FAA covered 80% of the cost to sound insulate each home. If the homeowner elected to participate in the program, they were required to fund the remaining 20%. Following the settlement, Los Angeles World Airports (LAWA) and FAA will cover 100% of the costs of sound insulating homes. Homeowners will no longer have any out-of-pocket expenses.

What is required to sound insulate the homes?

James: Typical improvements include acoustically-rated replacement windows and exterior doors, additional attic insulation, fireplace glass doors and ventilation systems (which might include a new furnace and/or air conditioning) to provide fresh air during times occupants have windows and doors closed. Since each situation is unique, the city's design team inspects each home before determining which improvements are required.

How is the noise level measured before and after the sound insulation has been completed?

James: The goal of the program is to achieve a 45 dB (decibel) level inside the home, which is quieter than most normal conversation. There are currently five different eligibility areas based on measured noise contours. For example:

Area 1 = 75 decibel Community Noise Equivalent Level (CNEL), which is an average over one year and takes into account how often the noise event occurs, duration of that event and loudness. Formula takes into account whether it's day or night or evening hours when it occurs. If it's in the evening from 7:00-10:00 at night, there's an additional 5 decibel penalty on that event. So if there's a 75 decibel event occurring between 7:00pm-10:00 pm, it's measured as if it were 80 decibels when it's averaged in with the other days/times.

Why is there a penalty associated with evening hours?

James: That's because of the type of events affected - people are watching TV and trying to get to sleep. The noise is more disruptive during those hours than if it occurred during the day. Ambient noise level is also lower in the evening, as traffic decreases and fewer kids are outside playing. From 10:00 pm until 7:00 am, there's actually a 10 decibel penalty.

California is the only state to use the CNEL, which splits 7:00 pm – 7:00 am into two noise levels – each with a different decibel penalty. Airport noise compatibility programs in other states use a day/night level average (DNL) which has a slightly different noise annoyance measure. The DNL measure includes the night time noise penalty for noise occurring between 10:00 pm and 7:00 am.

How do homeowners apply for the program?

James: The process is quite effortless. Homeowners simply complete a one-page application and submit it to the city with the first page of their property deed.

Who is eligible to participate?

James: All residential structures built prior to 1998 and located within one of the five Priority Zones established are eligible. The city estimates roughly 5,400 homes are eligible for the program.

From left, James O'Neill, Program Manager reviews the El Segundo Priority Zones map with Ruben Cabalbag, P.E., Program Manager, FAA Western-Pacific Region, Airports Division and Rick Etter, FAA Airport Acquisition Specialist, Office of Airport Planning and Programming, Community and Environmental Needs Division.

Will these construction enhancements affect property taxes?

James: No. The State Board of Equalization has indicated that the County Assessor's Office should not assess additional value due to sound insulation improvements.

How long will it take to complete the process?

James: The city expects to complete at least 300 homes each year. Ultimately, the timing will depend on the number of homeowners who apply for the program.

Will property owners be required to convey any property rights in exchange for the noise insulation?

James: In most cases, no. In rare exceptions, for owners of homes closest to the airport, selling noise rights (at fair market value) may be a condition of the program. Similarly, owners of homes built in 1989 or later must grant a noise easement if they want to participate in the program. The vast majority of homeowners will not give up any rights.

Most airport noise compatibility programs require homeowners to grant noise easements in exchange for the noise insulation improvements made to the home. FAA strongly encourages easements be secured on the property, although it's not required.

With the new settlement with LAWA, homeowners in the first priority zone, in addition to sound insulation work, will be required to enter negotiations to sell an easement to LAWA on the mitigated property.

How do you explain selling a noise easement to a homeowner?

James: This is actually contained in the Sound Insulation Program Agreement, which the homeowner is required to sign before we start the process.

Section 3B states:

If the Property was constructed before January 1, 1989, and is located with the "First Priority Zone" depicted on the map attached as Exhibit A, which is incorporated by reference. Owner understands and agrees that it may be required to sell a noise easement to Los Angeles World Airports (LAWA) in order for the RSI Program to fully fund the RSI Project (see Section 4, below).

Section 4: Noise Easement

A. Owner agrees that it will sell a noise easement to LAWA for fair market value as determined by an independent appraisal and through good faith negotiations with LAWA (not city).

Why was the 1989 date selected?

James: There is a state statute that requires airports to obtain an easement for property in the highest priority zone or the highest noise level zone in order for that property to be compatible with the airport.

Rick Etter and James O'Neill review how far south the eligibility extends within El Segundo as a result of the LAX airport runway relocation.

What purpose does the noise easement serve?

Rick: It acknowledges that the property has been mitigated. If the property is sold, it is sold as mitigated property, which was deemed compatible with airport noise operations. It ties the mitigation to the property, not the homeowner, and establishes the property as a sound insulated mitigated property. The easement acknowledges that the property is located near the airport and the property has been mitigated under the LAWA noise compatibility program. Since it's attached to the deed of the property, any future owner accepts this acknowledgement with the purchase of the property.

Is this easement required for the noise impact?

Rick: No. There is often a misconception that signing the easement allows planes to fly over their home. This is not the case. LAWA has had a noise compatibility program for all noise-impacted communities since the early 1980s, and the FAA has been funding these programs since then. These programs work with the affected communities to improve the noise environment surrounding the airport.

How has the new settlement agreement with LAWA affected the airport capacity and operations at LAX?

Ruben: As part of the settlement, LAWA agreed to constrain passenger activity to 78 million passengers per year. After the 1984 Olympics, the LAX Airport was designed to accommodate 42 million passengers per year. Over time, the airport was actually handling aircraft operations that exceeded the airport's runway capacity during peak periods. During these tremendous peak periods, the airport itself would back up the entire national airport system, as airplanes couldn't land or take off fast enough from an air traffic point of view. So there were delays in the system.

What impact would these delays have?

Ruben: Delays at LAX compound and affect the entire national airport system. For example, if you are traveling from Chicago O'Hare, but are unable to land at LAX, then you can't take off at O'Hare as scheduled. That delay in turn causes other delays and adjustments for flights and air passengers throughout the national system. We commend LAWA for acknowledging this impact associated with a potential national gridlock. They really stepped up to the plate when they decided it was time to modernize LAX and help FAA alleviate capacity issues.

What the city has recognized is that, when capacity increases, the noise level that residents are exposed to increases as well. So the city has pushed for a more regional approach to increasing capacity. Instead of increasing capacity of LAX, they want the capacity to increase at Van Nuys, Ontario and Burbank, and all these other surrounding areas.

Not only does the city deal with the impact of increased airline traffic – number of planes taking off and landing — but you also have the cars coming to and from LAX. This backs up the roadways around El Segundo because we're located right next to the airport and causes gridlock on a local level. When someone from Burbank needs to travel to China, it's our opinion that they should go to the Burbank airport, so they don't add to the traffic on the 110 or 5 freeway to get to the LAX.

What immediate airport needs at LAX has the settlement facilitated?

Ruben: At LAX, congestion on the runway and in the air has definitely been a challenge. To alleviate a potential safety issue, LAWA proposed a plan to enhance runway efficiency and safety by reconfiguring the southern-most runway. By relocating the runway 55 feet south, they will create space for a new taxiway that will enhance safety on the ground – and in the airspace above – by preventing tie-ups and ensuring minimal delays. Airport taxiways will also be improved.

The reports of incursions (aircraft coming too close together as they make their way to the runway or the terminal) will be virtually eliminated with the planned improvements.

Is the primary purpose of the runway relocation safety related?

Ruben: Yes. There is a certain separation distance between planes required on the runway and in the air. So if there's congestion on the runway, potential safety issues arise, in addition to delays.

The community and aviation system are working together in finding a balanced solution. We accept that the industry is going to grow. The population continues to grow, therefore the capacity of the local airports will need to increase accordingly, but we would like to see the surrounding airports grow to accommodate the increased demand. The perception is that those other airports (Van Nuys, Burbank, Ontario, Orange County) are underutilized at this point.

Another result is the level of customer service provided by the airport. When you consider that LAX was designed to handle 42 million passengers annually and the actual number is now at 60 million, you can imagine how the customer service level decreases proportionately.

Are the surrounding airports increasing their flights and airlines coming through?

Ruben: Not yet. However, it's definitely one of our goals.

Under the new settlement agreement with LAWA, they have agreed to constrain passenger activity at 78 million at LAX. But it's important to take into consideration that the number of planes is what contributes to the noise factor. Larger airplanes will seat more people; 737s vs. 747s, you'll get more people on planes without an increase in the number of planes.

The community is concerned about the Airbus A380 airplane, which is the 600+ passenger plane. Politicians and communities are concerned that we are going to replace 737s, 747s, 767s that accommodate 100 – 150 passengers with this large 600 passenger plane. And now that the plane will accommodate more passengers, you have more people driving to and from LAX, and now you have the local road gridlock issue again.

At a model home owned by the city, Ruben Cabalbag demonstrates how the customized double-paned windows prevent noise while maintaining egress regulations.

What is the biggest challenge you face in executing this program?

James: I would say trying to get homeowners to understand the expectations of the project. The property owner wants to be able to sign up for the program and have the construction team in place as soon as possible. These are people who are having trouble sleeping, watching TV and they want those issues solved. We've tried to make the process as speedy as possible, but there are many phases to the project.

An architect and engineer go out and evaluate the house, draw up a set of plans, explain the options available to the homeowner – do they want vinyl or aluminum windows, what style of door they want, etc. We must establish everything in writing, then get approval of the building department to make sure everything that's planned meets the municipal code regulations.

Once all the plans are finalized, we have to go out to bid. Since it is public funding, (federal money with a local match), we are required to go through the bidding process.

Are you required to bid out each home individually?

James: Each program will do it slightly differently. Our program handles it in groups of homes so that we can speed up the process. So we review all the specifications carefully to ensure they can be easily bid out to contractors. Then we select a contractor, then have the contractor visit each of the homes, verify the measurements, and then order the materials.

Everything ordered is actually custom made for each home. All the materials are then manufactured and shipped to the site so construction can start. So we've been able to reduce the amount of time it takes to complete the process. Originally, it was a two-year process. We've actually streamlined it, and now it's a one-year process.

How many homes can be handled at one time?

James: We have enough funding to treat 300 homes per year. And that's based on the new settlement with LAX. Prior to that, we were treating 100 homes per year, so within the last six months, we've been able to triple the size of our program.

We have 5,700 homes eligible for the program and approximately 2,000 people who have signed up to date . We're required to treat all homes based on their priority zone and the date the application was received.

How will the sound insulation program affect new construction in the city?

James: All new construction within the 65 decibel CNEL contour or higher must be built to the same standards as a house that has already been sound insulated. That includes using approved specified windows, doors, attic insulation, and building the house so that when the property owner is inside the home with windows and doors closed, the interior noise level does not exceed 45 decibels CNEL.

How do you monitor new construction to ensure it meets sound insulation standards?

James: We give the owner two choices. One is that they follow a prescriptive approach and use the specifications provided. They also have the option of hiring an acoustical engineer to try to design on their own; however, that resident would need to perform a noise test and prove to the city that the interior noise level is within the predetermined criteria established for the program.

Is this difficult for the city to monitor?

James: Since building permits are required for all new construction and remodeling, it's subject to the municipal code. The interior noise level is an aspect of the municipal code, similar to the fact that the doorway must be 36" wide or that the egress for the windows is met to get out in case of a fire.

Is the property owner liable if the sound level provided by the program is not maintained?

James: Yes. In the agreement, under Section 18 Maintenance, the owner must agree to assume responsibility. It also states, "The property owner's right to sue the owner of the Los Angeles International Airport for adverse noise impact will be abrogated if the property owner deliberately or willfully acts to reduce or destroy the effectiveness of the noise compatibility measures during the useful life of such measures. This obligation must remain in effect throughout the useful life of the noise compatibility measures, but not to exceed 20 years from the date of the city's acceptance of Federal aid for the project."

The most frequently asked question among property owners is regarding mail slots and pet doors. Many owners want to create mail slots and pet doors once their new sound insulation door has been installed. Unfortunately, both of these negate the effectiveness of the door in maintaining the appropriate interior sound level parameters, so they are not permitted under the program. ■

For additional information about the El Segundo Sound Insulation Program, please visit www.elsegundo.org