

(Taken From Ch. 5, "Final Evaluation of Noise Abatement and Noise Remedy Measures" by Peat Marwick, consultants to the Port.)

5. Acoustical treatment of existing structures. This measure was an integral part of the 1976 Sea-Tac/Communities Plan and should be retained. As mentioned in Chapter 2 of this report (p. 2-16), noise grid cells were primarily used to determine where and to what extent acoustical treatment and other remedy programs might be applied within the Airport Environs. However, noise contours were also used to ensure

that all possible eligible areas are covered by this and other noise remedy programs.

Detailed evaluation of acoustical treatment as a noise remedy measure and its application within the Airport Environs has resulted in development of the following suggested eligibility criteria for sound insulation:

- (a) Existing single-family structures located in areas with a noise exposure of Ldn 70 and above in 1980 (present condition-base year) or Ldn 65 and above in the year 2000.
- (b) Structures/uses identified under the sound insulation noise remedy program included as part of the Sea-Tac/Communities Plan.

[Note: Criteria used in the original Sea-Tac/Communities Plan for acoustical treatment involved the ANE (adjusted noise exposure) noise metric. The day-night level or Ldn metric is being used for this Noise Remedy Update Study, in accordance with national trends. A given ANE value such as ANE 40 can be converted to an equivalent (+) Ldn value by adding 35; thus, Ldn 75 approximates ANE 40.

The Communities Plan delineated two (2) acoustical treatment program areas. For those locations with a "permanent" (e.g., over the entire 20-year planning period) exposure of ANE 35 (Ldn 70) and above, a cost-sharing (75% POS; 25% property owner) insulation program was recommended. The second area also involved a cost-sharing insulation program based on the premise that noise exposure would drop below the ANE 35 (Ldn 70) level in the future. Both the Port and owner would share equally in funding this latter program, according to the adopted Plan.]

(c) To the extent feasible, single-family structures in designated Purchase Assurance areas (see #8 below) should be appropriately sound insulated by the Port at no dollar cost to an eligible property owner who chooses this noise remedy option in exchange for an avigation easement.

(d) Special cases of non-single family use nature.

Exhibit 5-1 provides a preliminary* indication of the locations within the Airport Environs that represent full application of these criteria. Exhibits 5-2 and 5-3 show the same program boundaries at a larger scale. As shown by the Exhibits, Criteria (a), above, would include some 5,529 eligible structures, including mobile homes, in neighborhoods situated to the north, east, south, and west of the Airport. This contrasts to a total of 5,017 units covered by the 1976 Plan in both of the aforementioned acoustical treatment program areas. It also reflects that the overall noise exposure area has changed somewhat from its 1976 counterpart. As noted in the Port's Noise Exposure Update report of June 1982, noise exposure levels have decreased north and south of the Airport (since the 1976 Plan was adopted), and increased to the east and west. Also, substantial infill of vacant lots with new residential units has taken place in recent years.

Application of Criteria (c) involves some 2,897 single-family residences (434 of which are mobile homes). This is an increase over the number of homes covered by the Communities Plan. Some of the reasons for such a dramatic difference include changed aircraft operations (current and forecast) stemming from deregulation of domestic airlines in the U.S.; improved noise exposure computer modeling programs; continued growth in the Highline area of King County; and use of both contour lines and grid cells to delineate impact areas.

*Pending final modification of program boundaries, updating of available maps, and verification of eligible structures.

Since the cost of sound insulation can vary widely from structure to structure--depending upon such factors as age, condition, present provisions, etc.--a demonstration project appears to be in order and is so recommended. The details of such a project for the Sea-Tac area are described in Chapter 6 of this report.

Based on currently available information (area maps and housing census data),* a "ballpark" estimate of what it might cost to acoustically treat 5,529 potentially eligible structures within the Sound Insulation Program areas depicted on Exhibits 5-1, 5-2, and 5-3 can be made, however. A 1981 study by Wyle Research for the Environmental Protection Agency (EPA) provides a basis for making such an estimate. According to this "Study of Soundproofing Requirements For Residences Adjacent to Commercial Airports," the average cost in 1981 dollars to soundproof (e.g., reduce the interior level to Ldn 45 or below) a single-family dwelling in the Sea-Tac Airport area that is exposed to Ldn 65-70 decibels was determined to be \$2,700. Application of the 7.2% overall rate of inflation that has occurred since 1981 would increase this figure to \$2,900 per dwelling, or about \$16 million for all of the structures (identified on a preliminary basis) that might be eligible. Of course, the estimate covers insulation costs only--it does not include expenses that would be incurred by an agency (such as the Port) administering a program of such magnitude and complexity.

6. Avigation easements. Noise remedy programs that may be designated as "Purchase Assurance" or "Sound Insulation" all involve the granting of an avigation easement by a property owner to an airport sponsor in return for relief from, or mitigation of, excessive noise exposure. The possibility of an owner receiving monetary compensation only for

*A "windshield" survey of this large area will be undertaken following determination of final program boundaries.

an avigation easement must also be considered, even though no actual relief is provided in the form of a reduced noise environment.

Based on the criteria and considerations cited at the beginning of this Chapter, the exchange of an avigation easement for an agreed-upon sum of money should be a permitted option in the Purchase Assurance and Sound Insulation program areas tentatively identified on Exhibits 5-1, 5-2, and 5-3.

7. Purchase assurance. Again, as discussed in Chapter 4, a purchase guarantee (now referred to as purchase assurance) program was included in the Sea-Tac/Communities Plan and should be retained as part of the current Update effort. The following eligibility criteria have been developed for the revised Purchase Assurance Program area depicted by Exhibits 5-1, 5-2, and 5-3.
 - (a) Purchase assurance should be provided by the Port in single-family housing areas only; moreover, King County must be in agreement that such areas can and should remain as residential neighborhoods in the foreseeable future.
 - (b) This type of noise-remedy program should be available in exposure areas of Ldn 75 and over at present (1980) and in areas of Ldn 70 and over in the year 2000.
 - (c) Properties identified for purchase guarantee in the 1976 Sea-Tac/Communities Plan should be eligible. The criteria in use at that time were as follows: "For areas defined by 'sustained' exposure levels of ANE 40 (Ldn 75) or above (but below 'permanent' ANE 40 levels), purchase guarantees should be applied in conjunction with a residential soundproofing program and with permanent or long-term easements." (Refer to Plan Section 6.2.4 on page 4).

[Note: A "sustained" exposure level is one that is expected to fall below ANE 40 (Ldn 75) at some point during the planning period.]

The new criteria cited in (a) provide for a greater emphasis on present noise level conditions than did the 1976 version. Such an approach is now warranted by the changed noise conditions reflected in the grid cell/contour coverage, as well as by the strong citizen preference for this type of mitigation.

Recommended Purchase Assurance Program boundaries are portrayed on Exhibits 5-1, 5-2, and 5-3. As shown on a preliminary* basis, this program could involve 2,463 single-family properties plus 434 mobile homes over time.

The new boundaries represent extensions of the original 1976 Plan recommendations from S. 116th Street to S. 100th Street on the north, and from just north of S. 223rd Street to S. 244th Street on the south. Also, Purchase Assurance Program areas are now shown both to the east and west of the Airport whereas there were none in these locations prior to this study. As discussed under #5 above, the reasons for change involve such things as a different noise exposure pattern (present and future); boundary selection criteria that favor early relief for residents in high impact, non-acquisition areas; and growth in general within the Highline area.

With regard to estimated costs, if all tentatively identified eligible owners were to eventually avail themselves of purchase assurance--an unlikely realization since many of the persons involved will wish to stay in their homes and not relocate due solely to noise--the total price tag might involve over \$46 million (1983 dollars) over the 16-year period from 1984 to 2000. This estimate is based on a net cost to the Port of \$16,000 per transaction (outright acquisition

*Pending final modification of program boundaries, updating of available maps, and verification of eligible structures.

followed by appropriate sound insulation and resale of the improved property with an avigation easement attached to the deed). The \$16,000 net figure represents average program administration costs of \$4,500 together with average sound insulation costs of \$11,500 per structure, as required to reduce interior levels to Ldn 45 and below. It does not encompass any relocation costs (see below).

Due to uncertainties as to (1) the extent and timing of applications for this type of program assistance; (2) the actual cost of appropriate sound insulation; (3) ultimate administrative costs and procedures; and (4) the likely return in dollars to the Port upon resale of the improved properties (see page 3-23 in Chapter 3), it is hereby recommended that a demonstration project be developed and carried out as soon as possible. This project could be dovetailed with the previously recommended sound insulation program outlined earlier in this Chapter.

In support of the foregoing recommendations, it should again be emphasized that the various opinion/attitude surveys conducted by McClure Research in the communities affected by the Airport's presence and location clearly indicate widespread enthusiasm for the concept of purchase assurance. A well-founded demonstration program should therefore be accomplished so as to permit early funding and implementation of this particular noise remedy.

Two other key points should also be noted. Relocation benefits should not be provided to eligible applicants for purchase assurance, and the Port should be the "buyer of last resort" in carrying out the proposed program. Both of these conclusions stem from the overriding need to encourage the improvement and stability of the desired residential environment. While purchase assurance should be available to those who truly are bothered by excessive aircraft noise, the process must be deliberate (rather than hurried), and it should not be overly costly in order to permit maximum, timely application of available funds.

With regard to the Port functioning as a "buyer of last resort" in connection with an eligible purchase assurance applicant, an administrative process such as has been set up by the St. Louis, Missouri Airport Authority might be employed. The basic steps involved in such a process include:

- (1) An eligible owner would notify the Port of intent to apply for assistance under the purchase assurance program and also engage a licensed, reputable local realtor to handle the sale of his/her property. The realtor would be expected to aid the owner in establishing a reasonable price, to utilize the local multiple-listing service, and to bring all serious offers to the attention of both the owner and a designated representative of the Port of Seattle.
 - (2) If no reasonable offers are received and accepted during a minimum 90-day marketing period, then the owner could request the Port at that time to acquire the property.
 - (3) The Port and owner would next negotiate a sales agreement based on the fair market value of the property. Professional appraisers would be used by both parties, as necessary.
 - (4) Following establishment of a fair price, the owner would then sell his/her fee simple interests to the Port in entirety.
 - (5) After appropriate sound insulation and other necessary improvement activities (if any) have been completed, the Port would place the home back on the market and resell same for a fair price with an avigation easement attached to the deed.
8. Acquisition programs. Between 1972 and the end of 1982, the Port of Seattle acquired nearly 800 residential properties impacted by aircraft operations, at a total cost in excess of \$43,000,000. Authorization was also given by the Port Commission in January 1983 to

purchase another 150 parcels (+) for an estimated cost of \$13.1 million. The need to continue this permanent but expensive form of noise remedy (as necessary) was concluded during the initial evaluation discussed in Chapter 4.

The final evaluation of outright acquisition resulted in the following criteria for use in developing revised program recommendations:

- (a) Program focus would be on the acquisition of single-family residential properties located in high noise exposure areas--areas that are to be completely redeveloped for Airport-compatible uses.
- (b) The program should primarily be carried out in exposure areas of Ldn 80 and over in 1980, and in areas of Ldn 75 and over in the year 2000.
- (c) Properties identified for acquisition by the Sea-Tac/Communities Plan should continue to be eligible.

The criteria used to determine acquisition boundaries in the 1976 Plan were very straightforward: all residential and other noise-sensitive uses located in any area permanently exposed to ANE 40 (Ldn 75) and above levels were earmarked for outright acquisition by the Port. As suggested above, the new criteria take into account the need to provide near-term (e.g., as soon as possible) relief for the owners of property now impacted by very high levels of noise due to changes in aircraft operations (number, type, time of day) that have occurred since 1975-1976. Properties subject to Ldn 80 and above levels in 1980 are covered by the new criteria, as well as locations that still will be in excess of Ldn 75 in the year 2000, according to the most recent forecasts for the Sea-Tac (Jackson) Airport.

- (d) Houses that are not suitable for insulation in Purchase Assurance Program areas would also be acquired by the Port when and as necessary. Following acquisition, the Port would remove the structure and resell the then-vacant lot with an avigation easement.

- (e) Special cases of a non-single family use nature would be incorporated in the program as determined by a detailed review of each noise exposure "cell" produced as part of the aforementioned Noise Exposure Update report.

Inasmuch as federal funds will be utilized to the maximum extent available, relocation benefits will be provided to all property owners who are bought out by the Port. These benefits, as prescribed by the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-64684 Statute 1894), include such activities or costs as (a) assistance in finding suitable housing within the Seattle metropolitan area that is equivalent in type, size, and cost to the dwelling being acquired; (b) the difference in value if the replacement housing is more costly; (c) an interest differential subsidy if the mortgage interest rate on the replacement housing is greater than on the original dwelling; and (4) loading and unloading goods on a moving van for transport up to a 50-mile distance. It should be noted, however, that existing federal law limits the federal share of the housing and interest cost differentials, plus the cost of moving, to no more than \$15,000 above the fair market value of the property in question.

Based upon recent cost estimates developed for the latest acquisition program authorized in January 1983, it is anticipated that the further acquisition of single-family residential properties will average some \$90,000 per parcel.

The equivalent cost for a mobile home and lot ownership package is \$65,000, while a mobile home on a rented lot approximates \$37,500. All of these average dollar figures include property acquisition and clearance, relocation, and administrative costs typically borne by the Port of Seattle.

Based upon the foregoing estimates, some \$40 million (in 1983 dollars) will be required to handle the 445 residential parcels slated for acquisition, as shown on Exhibits 5-1, 5-2, and 5-3.

It is of interest to note that the Sea-Tac/Communities Plan called for the fee simple purchase of 1,008 homes, 784 of which have been, or are being, acquired. The remaining 224 units are included in the 445 total recommended by this study. Thus, some 221 additional single-family properties have been designated for acquisition in accordance with the new criteria.