

STAFF REPORT
PROGRAM AREA BOUNDARIES/NOISE REMEDY UPDATE/SEA-TAC AIRPORT
SUMMARY AND STAFF RECOMMENDATIONS

Report Purpose

The purpose of this report is to summarize the steps that have been taken in updating the program area boundaries for the Noise Remedy Program. This report also specifies the staff boundary recommendation which has been developed in light of all advise and information available.

Noise Remedy Update

The Sea-Tac Communities Plan was adopted in 1975/76 by the Port of Seattle and King County. This plan recommended program area boundaries based on the technical noise information available at that time. Since that time new noise impact technology has been developed and the noise environment around Sea-Tac has changed. Due to these changes, the current update of the Noise Remedy Plan entails a review and adjustment of the boundaries for the three program areas:

1. Acquisition
2. Neighborhood reinforcement (purchase assurance)
3. Cost-sharing insulation

The review and adjustment of boundaries has generally taken place in three unscheduled phases. First, the consultant (Peat Marwick & Mitchell/PMM) hired to assist Port staff with the update made an initial boundary recommendation based on noise criteria and a set application of that criteria. Subsequently, a group of citizens (a subcommittee to the Technical Working Committee) reviewed the boundaries suggested by PMM and recommended several changes based on criteria other than strictly noise criteria. The third phase of review is that of the staff working with the consultant and FAA staff. Taking the PMM & subcommittee's advise, the staff in turn prepared a boundary recommendation that is primarily based on noise and takes into consideration several additional factors that will stabilize the noise remedy program as it is implemented in the next fifteen years.

The following subsections of this report summarize each of the "phases" as outlined above and documents the basis for the staff recommendation.

PMM Recommendation

In 1982 the Port completed the Sea-Tac Noise Exposure Update which documented noise impacts (grid cells and contours) based on 1980 aircraft operations data. The noise data was generated using the most up-to-date computerized model available. P.M.M. in turn used the Noise Exposure Update data in preparing suggested program boundaries. In essence the recommendation was to include residential land having an 80 Ldn or higher in 1980 or land having a 75 Ldn or higher in 2000 within the acquisition area boundary. Similarly, the areas between the 75 to 80 Ldn/1980 and 70 to 75 Ldn/2000 were recommended for Purchase Assistance (Neighborhood Reinforcement); and areas between 70 to 75 Ldn/1980 and 65 to 70 Ldn/2000 were recommended for Cost-Sharing Insulation. (The criteria and the method for applying it is attached as Appendix A to this report.)

As a result of this recommendation, several areas in addition to those designated in the 1975/76 plan were recommended for Acquisition, Neighborhood Reinforcement and Cost-Sharing Insulation. In fact, the increase in the number of eligible residences each program area amounted to:

	<u>1975/76 Plan</u>	<u>Update</u>	<u>Approximate Total</u>
a. Acquisition	1008	+445	1,453
b. Neighborhood reinforcement	770	+2130	2,900
c. Cost-sharing insulation	5020	+510	5,530

The additional acquisition areas were: Northeast of the airport immediately north of Highway 518 and east of 24th NE; southeast of the airport between S. 194th and S. 196th, west of 18th Ave. S.; and south of the airport from S. 211th St. to S. 216th St. and between 22nd Avenue S. and about 18th Avenue S. (These areas are shown on the map attached as Appendix B.)

Subcommittee Recommendations

Given the P.M.M. recommendation, a subcommittee to the Technical Working Committee met on several occasions to review the program boundaries and discuss changes. They produced a set of recommendations to include four additional areas for Acquisition and two additional areas for Purchase Assurance (Neighborhood Reinforcement).

The criteria used to include additional areas for acquisition were:

1. Buffer for airport-related development, and
2. Neighborhood continuity.

The criterium cited for two additional areas to the Purchase Assurance (Neighborhood Reinforcement) program area is improvement to neighborhood stability. (The complete text and maps for the Subcommittee's recommendations are attached as Appendix C to this report.)

Staff Recommendations

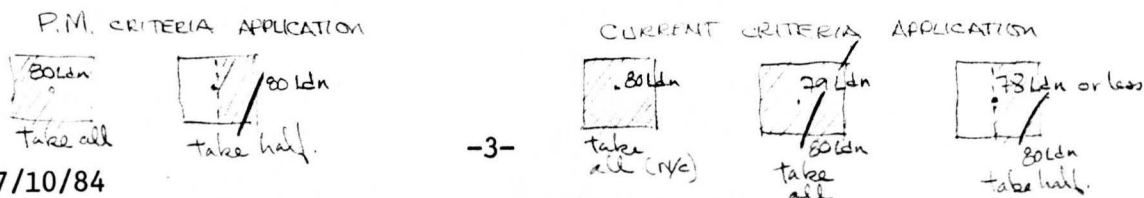
With the criteria and advise from the consultant and subcommittee available, the Port Planning staff prepared recommended boundaries for the program areas. The purpose of the staff recommendation was to include it with the Noise Remedy Update which would be presented to the Port Commissioners for their consideration and approval. The paragraphs below explain: 1) the reasoning and considerations on which the recommendations are based, 2) the recommendations as developed by the staff, 3) major problems which may surface as boundaries are established.

In preparing staff boundary recommendations the following reasoning and considerations were carefully taken into account:

1. To successfully establish boundaries, clear and concise criteria must be established and consistent application of the criteria must be achieved. This is necessary to assure that a defensible and credible program is adopted by the Port. It is also necessary to assure eligibility for funding from the Federal Aviation Administration. (The letter from the FAA dated February 23, 1984 expresses a concern for non-noise criteria in justifying some acquisitions. This FAA letter is attached as Appendix D.)
2. The consultant's initial recommendation and the subcommittee's recommendations were very carefully studied and considered. Retention of the areas designated for acquisition in the Sea-Tac Communities Plan was also adhered to with refinements to natural and man-made boundaries.
3. The boundary between acquisition and neighborhood reinforcement is of particular concern because of the significant costs and program contradictions if it were to be moved at a later date. Just beyond acquisition areas, the residential areas are to be targeted for reinforcement. In other words, substantial resources in insulating, transacting sales, and otherwise reinforcing the homes of communities is programmed to take place in the neighborhood reinforcement area. If the reduction of noise forecasted for the year 2000 is not fully achieved, the Port could find itself faced with the situation of expanding the acquisition program to remove the housing in which it had invested heavily to reinforce. To minimize this possibility, it makes sense to provide an additional margin. This boundary issue is not involved between the neighborhood reinforcement area, insulation cost-sharing area, and areas beyond as there are no apparent physical changes associated with these programs. Changes in these other boundary lines would change only funding level commitments on the part of the Port.
4. The concept of neighborhood reinforcement is one that in large part is determined by noise but it also provides a vital function of reinforcing areas directly adjacent to "buy out" or acquisition areas where homes and neighbors are relocated and the land is left for some other use. These homes "just across the street" should be "reinforced" as residential units at the edges of the remaining neighborhoods.
5. All boundaries should be set in response to land uses that are presently (and are expected to remain) noise sensitive (i.e., residential land use) and program boundaries should respond to natural and man-made features.

Based on the preceding considerations and reasoning (and subsequent review with the consultant and FAA staff), the Port Planning staff has prepared the following recommendations:

1. The criteria established by PMM in determining the program area boundaries should remain intact. The criteria is based on noise and the need to use natural and man-made features to locate the boundaries between program areas. However, to provide some room for error or misjudgment in forecasts, the staff recommends a change in the application of criteria as it pertains to the acquisition area. In essence, the change is: include within acquisition entire grid cells, not only if they are 80 Ldn or greater at the centerpoint, but also if the centerpoint is 79 Ldn and the 80 Ldn contour line crosses the grid cell. The change is diagrammed below:



This change in application of the criteria is recommended because it expands the residential acquisition area to include those areas most impacted by noise beyond the boundaries established by P.M.M. The recommendation is solidly based on the Noise Exposure Forecast Study which is the most up-to-date noise data available. The extent of the change is based on the environmental standard used by FAA in their most recent environmental impact order (1050.10, Policies and Procedures for Considering Environmental Impacts, 12/21/83). This document designates a 1.5 Ldn increase in noise levels as triggering further environmental analysis. Since all grid cells of 78.6 Ldn or greater are rounded to 79 Ldn, the recommended inclusion of grid cells with 79 Ldn (which are crossed by the 80 Ldn contour) picks up the areas which would most likely not meet the year 2000 criteria if the forecasts are not accurately predicted. The built-in margin of error corresponds to the Ldn difference that the FAA uses to trigger "further analysis."

The only program boundary for which this criteria application is suggested is acquisition. It is this area where future adjustments are not logical or cost effective. The only additional caution that must be taken is the refinement of the grid cell boundary which must correspond with natural man-made geographical edges.

2. A second staff recommendation is to expand the neighborhood reinforcement boundaries to include a minimal band (to the closest logical boundary) of reinforcement area in two places where airport and acquisition areas are directly adjacent to residential areas.

The boundary changes resulting from the recommendations include about 95 additional acquisitions and 120 additional houses in neighborhood reinforcement. Specifically, the changes include:

- a. The addition of the area between 16th Ave. S. and 18th Ave. S. just north of S. 216th Street to the acquisition program area.
- b. The addition of the area between 22nd Avenue S. and 24th Avenue S. just north of S. 216th Street to the acquisition program area.
- c. The addition of the area on both sides of 26th Ave. S. (and to the west) just north of S. 200th Street to the acquisition program area.
- d. The addition of the block between S. 128th and S. 129th/Des Moines Way S. and 18th Ave. S. to the acquisition program area. (These homes were excluded from the 1975/76 Sea-Tac Communities Plan acquisition boundaries because they were considered to be in transition to commercial use. Eight years have passed and the area remains residential in use and zoning with the exception of one lot. Therefore, staff recommends incorporating the area (to the man-made features, i.e., major arterials) into the acquisition program area to prevent the homes from becoming isolated from the remaining neighborhood as acquisition proceeds in area to the south.)

- e. The addition of the group of homes between 24th Ave. S. and 25th Ave. S./S. 136th and S. 142nd to the neighborhood reinforcement program area.
- f. The addition of the group of homes between S. 168th and S. 176th/the airport and the crest of the hill (about 10th Ave. S.) to the neighborhood reinforcement program area.

In making these recommendations, there are some problems that can be expected. Major problems are identified below:

1. Between any one house and the next, only an incremental difference in aircraft noise will be evident. Yet, program boundary lines must be located to separate acquisition from neighborhood reinforcement, and other program areas. Residents near the boundary lines may argue that the program area in which they are placed is inequitable because "the house across the street" (which has practically the same noise) is in another program. To accept this logic would require the Port to adopt a program that continually purchases residences in an ever expanding area around the airport. The infeasibility and neighborhood disruptions of such a program must be explained as the boundaries are established.
2. The additions to the acquisition and Neighborhood Reinforcement programs would increase program costs. These costs must be reviewed and approved by funding sources before the Port can adopt and implement the recommendations.
3. New areas of acquisition require decisions regarding the eventual use of the properties. These decisions will require more study and planning with King County, the community, etc.
4. There may be residences included within the acquisition areas in which most residents wish not to be acquired. There are processes for such residents to petition for exclusion from acquisition. Criteria used in responding to petitions could take into consideration the percentage of the area signing the petition, the relationship of the petitioning residences with remaining neighborhoods, and the influence that other acquisitions would have on the character of the community signing the petition.
5. This recommendation does not include all program areas changes recommended by the subcommittee. Reasoning for the differences will have to be discussed and explained to assure an understanding of all issues.

As explained at the outset of this report, the purpose of the report is to summarize the steps that have been taken in recommending program area boundaries and to specify the staff recommendations. This report will be used for Port review and committee review before it is circulated to the general public.

USE OF NOISE LEVELS IN DEFINING NOISE REMEDY BOUNDARIES AIRPORT NOISE REMEDY UPDATE - JACKSON INTERNATIONAL AIRPORT

Noise Criteria for Defining Boundaries

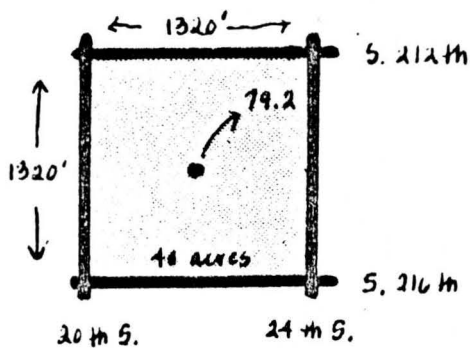
- * Land Acquisition = greater than or equal to 80 Ldn in year 1980 or greater than or equal to 75 Ldn in year 2000.
- * Purchase Assurance = greater than or equal to 75 Ldn in year 1980 or greater than or equal to 70 Ldn in year 2000.
- * Sound Insulation = greater than or equal to 70 Ldn in year 1980 or greater than or equal to 65 Ldn in year 2000.

(Noise levels are expressed in Ldn for both grid cells and contours.)

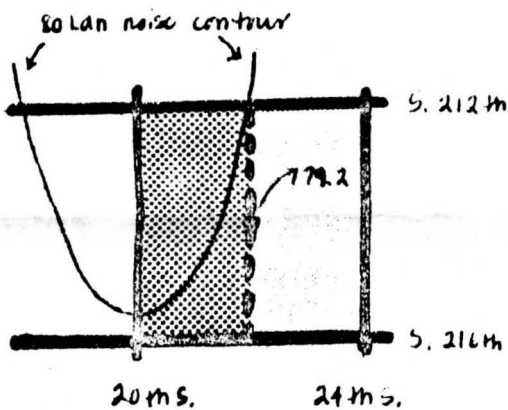
Definitions

- * Grid cells are 40-acre parcels aligned with streets and avenues. Noise levels are determined at the center of each grid cell for the years 1980, 1985, 1990, and 2000.
- * Noise contours are lines of equal noise level. Noise contours are presented in intervals of 5 (e.g., 80 Ldn, 75 Ldn, 70 Ldn, and 65 Ldn).
- * Ldn is a weighted, cumulative noise metric which represents all of the noise energy averaged over a 24-hour period with an additional penalty of 10 decibels for noise between 10:00 p.m. and 7:00 a.m. Noise levels are expressed as A-weighted decibels written dBA.

Example of Criteria Application



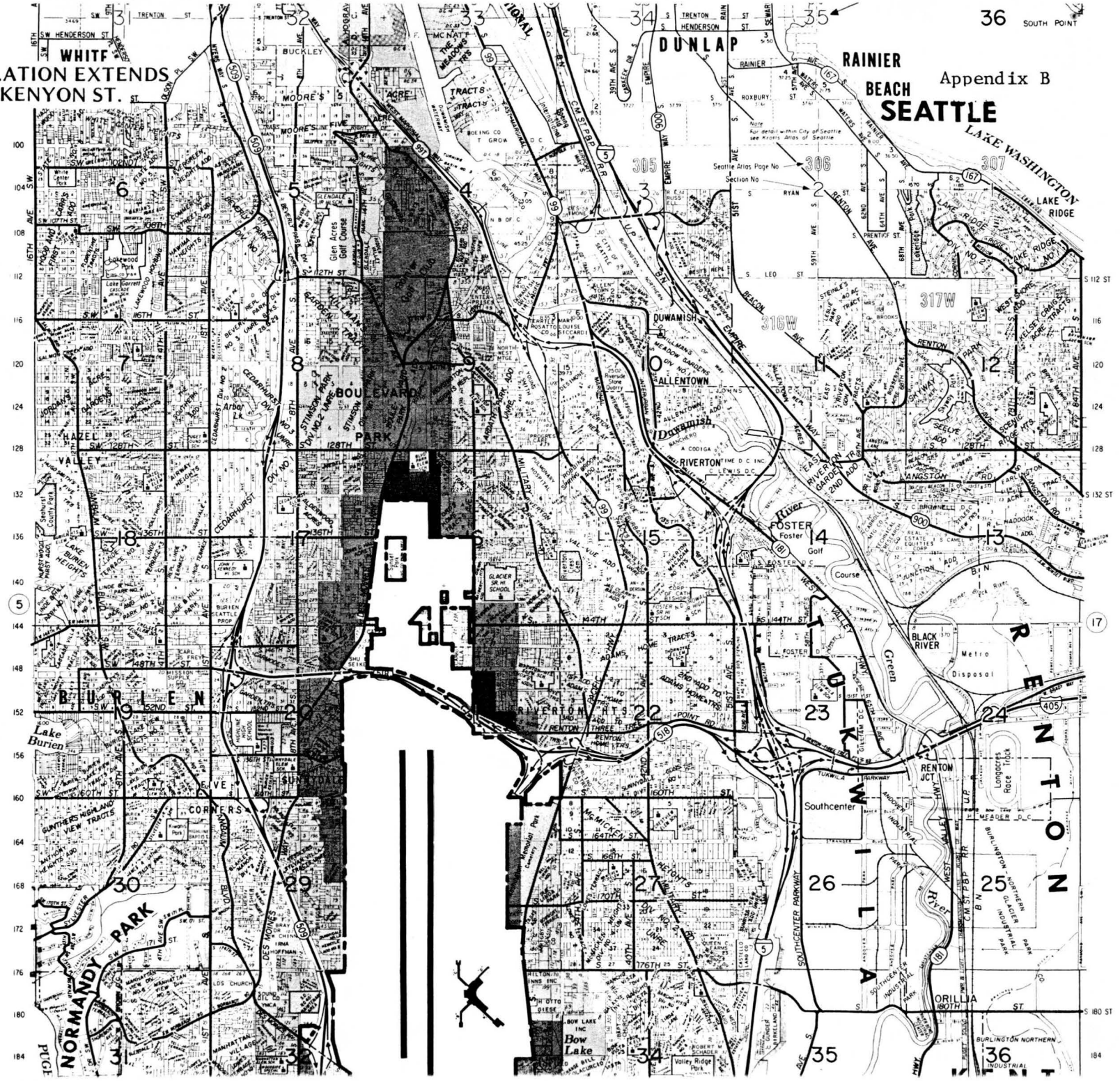
The noise level at the center of this grid cell is 79.2 in 1980 and 73.0 in 2000. These noise levels would qualify the entire 40 acres for purchase assurance.

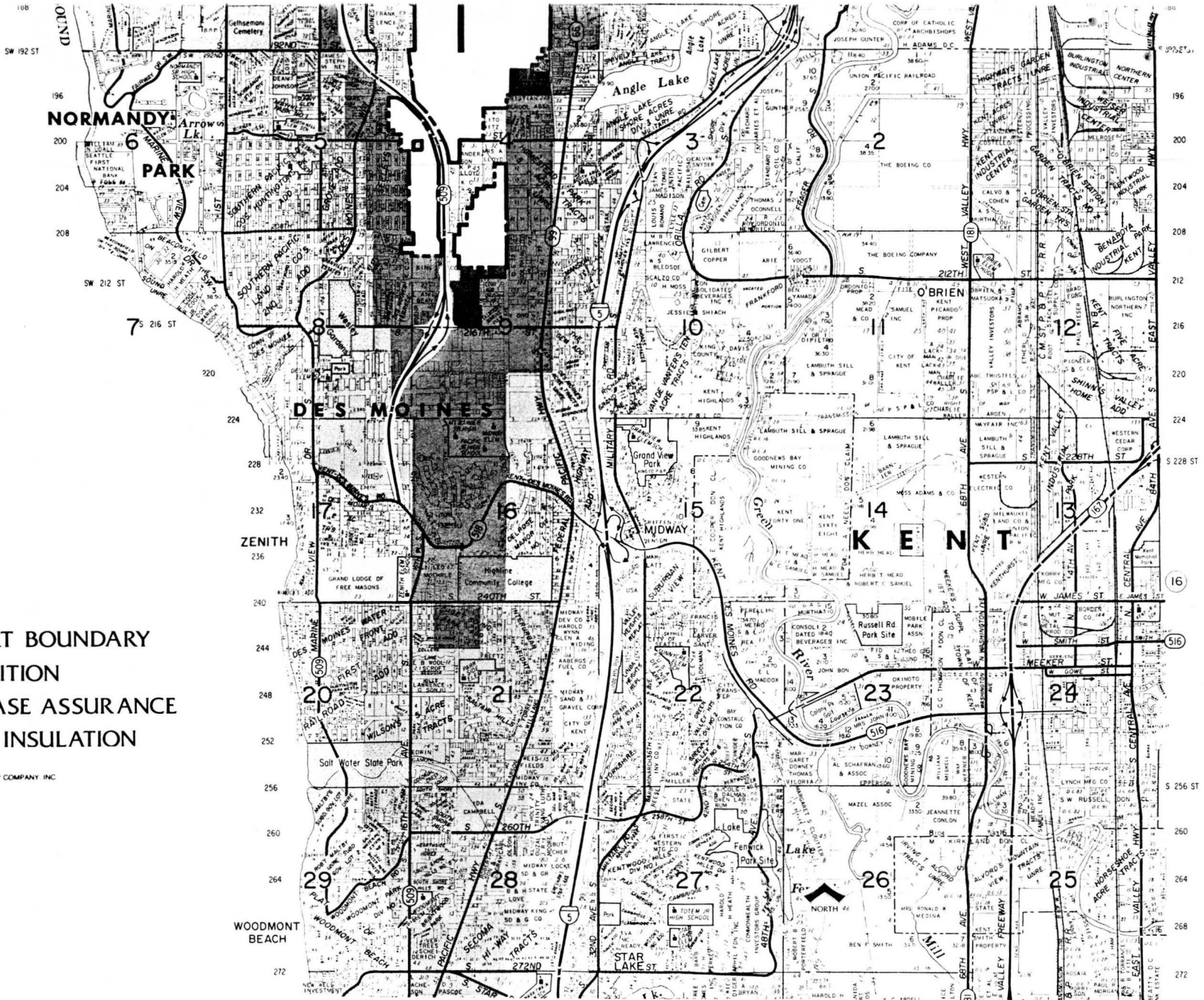






However, the year 1980 80 Ldn noise contour falls within the grid cell. All the area within the contour has a noise level of 80 Ldn or higher and should qualify as land acquisition as per the noise remedy boundary criteria. Therefore, one-half of the grid cell is removed from purchase assurance and identified as land acquisition.

These two steps using grid cells and noise contours were applied to each of the noise remedy programs.

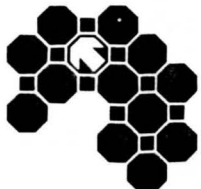
NOTE: SOUND INSULATION EXTENDS NORTH TO S. KENYON ST.





-  AIRPORT BOUNDARY
-  ACQUISITION
-  PURCHASE ASSURANCE
-  SOUND INSULATION

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JACKSON INTERNATIONAL AIRPORT NOISE REMEDY UPDATE

OVER ALL PROGRAM BOUNDARIES

PORT OF SEATTLE : SEATTLE, WASHINGTON

FEET 0 2 4 8,000

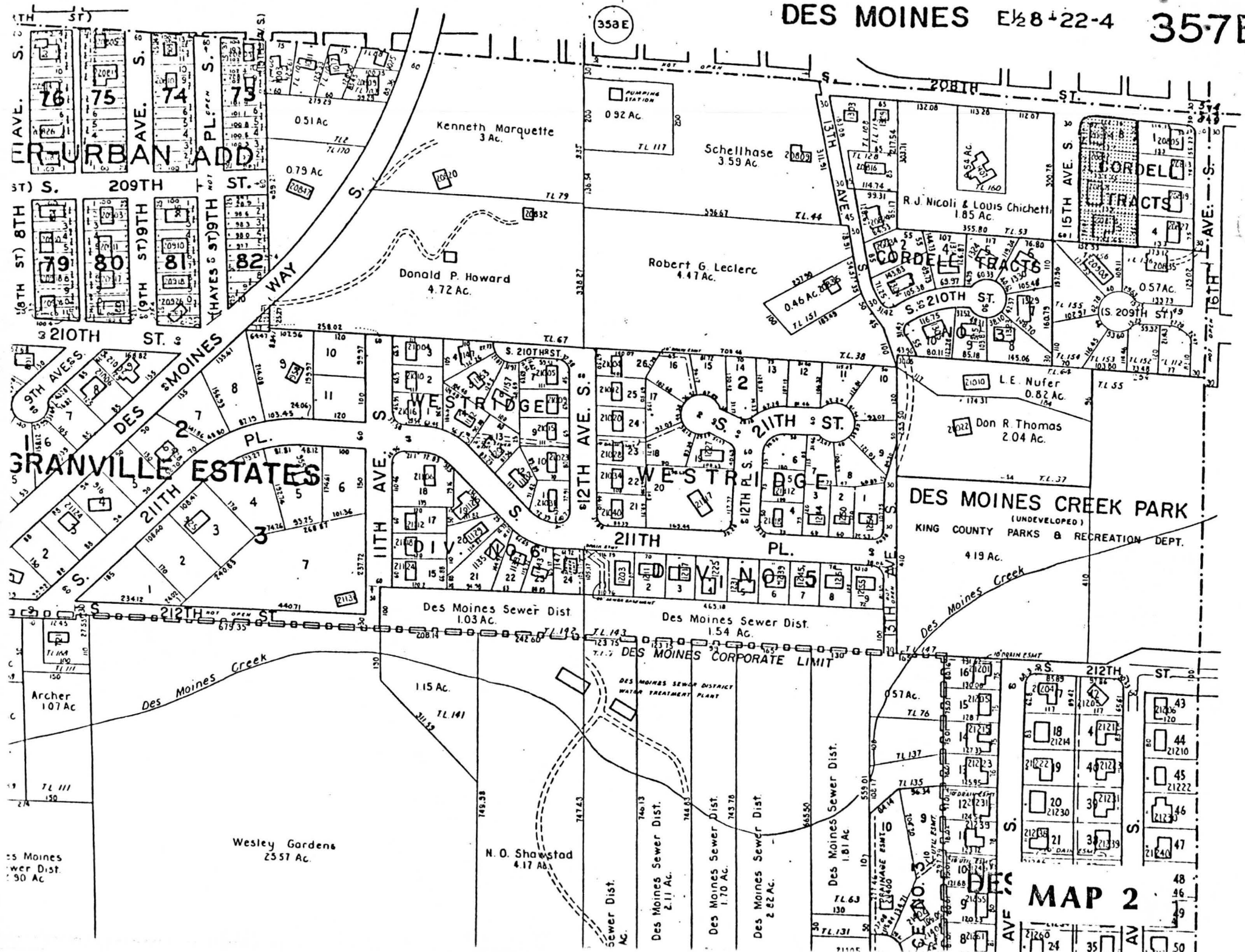
RECOMMENDATIONS FOR PROPOSED NOISE REMEDY PROGRAM CRITERIA AND BOUNDARIES
AIRPORT NOISE REMEDY UPDATE - JACKSON INTERNATIONAL AIRPORT

Criteria for eligibility in a land acquisition program from the working draft of the "Final Evaluation of Noise Abatement and Noise Remedy Measures" and the accompanying revised Exhibits dated 1/16/84 should be expanded to include two additional criterion:

1. Buffer for Airport-Related Development. Land acquisition should be provided in residential areas immediately adjacent to or facing areas designated for potential Airport-related facility development or commercial development on Port-acquired land if adequate buffer is not already provided. A specific area to which this criterion should be applied is a group of properties east of 24th Avenue S., south of S. 142nd, and north of the proposed acquisition at S. 148th. The east boundary should be approximately 200' and no more than a two-house depth east of 24th Avenue S. between S. 142nd and S. 148th (Map 1).
2. Neighborhood Continuity. Land acquisition should be provided where small "islands" of residential properties have been or may become isolated from neighboring residential areas through proposed or past Port acquisition programs. Three specific areas to which this criterion should be applied are (1) the four properties along 15th Avenue S. immediately south of S. 208th (Map 2); (2) the block between S. 128th and S. 129th/Des Moines Way S. and 18th Avenue S. (Map 3); and (3) the two properties along 18th Avenue S. immediately south of S. 212th (Map 4.)

Criteria for eligibility in a purchase assurance program should be expanded to include one additional criterion:

1. Improvement to Neighborhood Stability. Noise related impacts, on-airport development, commercial development on Port-acquired lands and airport-related development have adversely affected many neighborhoods surrounding the Airport, but particularly those closest to the Airport. Purchase assurance was developed to encourage the improvement and stability of residential environments. Therefore, it is proposed that all residential areas closest to the Airport should be included in purchase assurance. Two specific areas to which this criterion should be applied are (1) the group of properties south of S. 160th and north of S. 176th, east of Des Moines Way S. between S. 160th and the intersection of Des Moines Way S. and SR 509 and east of SR 509 between the aforementioned intersection and S. 176th to the Airport boundary (Map 5) and (2) the group of properties between 24th Avenue S. and 25th Avenue S./S. 136th and S. 142nd (Map 6).



URBAN ADD

GRANVILLE ESTATES

Kenneth Marquette
3 Ac.

Schellhase
3.59 Ac.

Donald P. Howard
4.72 Ac.

Robert G. Leclerc
4.47 Ac.

DES MOINES CREEK PARK
(UNDEVELOPED)
KING COUNTY PARKS & RECREATION DEPT.
4.19 Ac.

Des Moines Sewer Dist
1.03 Ac.

Des Moines Sewer Dist.
1.54 Ac.

Archer
107 Ac.

Wesley Gardens
2357 Ac.

N. O. Shawstad
4.17 Ac.

Des Moines Sewer Dist.
2.11 Ac.

Des Moines Sewer Dist.
1.70 Ac.

Des Moines Sewer Dist.
2.22 Ac.

Des Moines Sewer Dist.
1.81 Ac.

MAP 2

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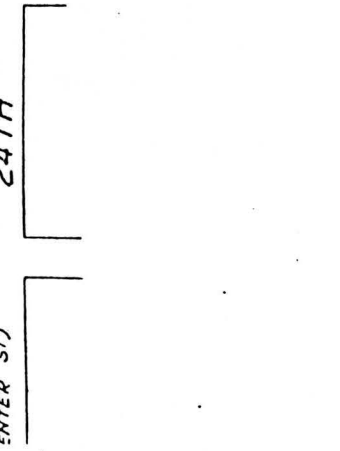
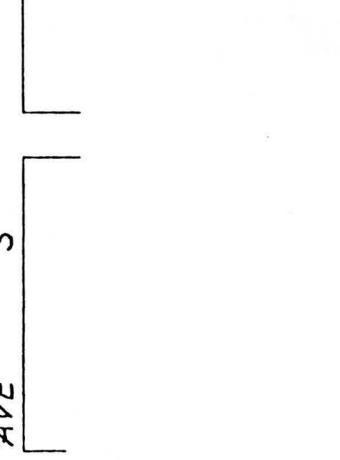
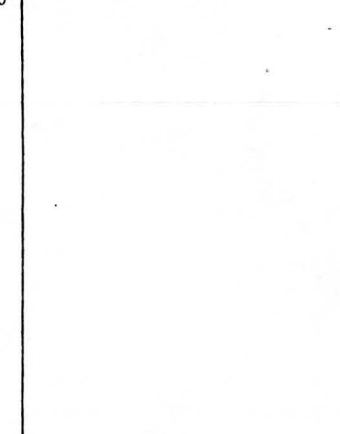
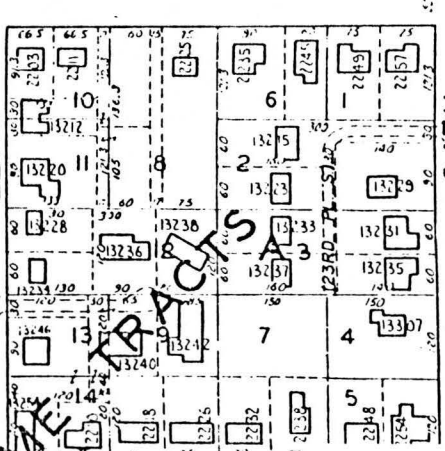
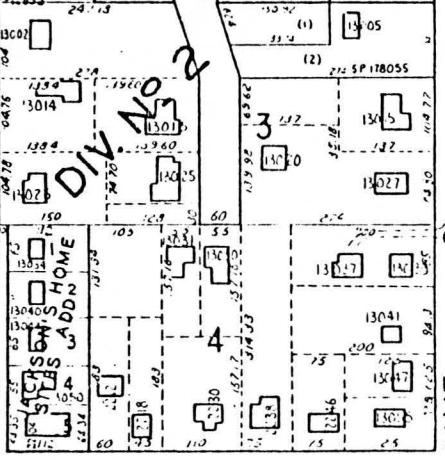
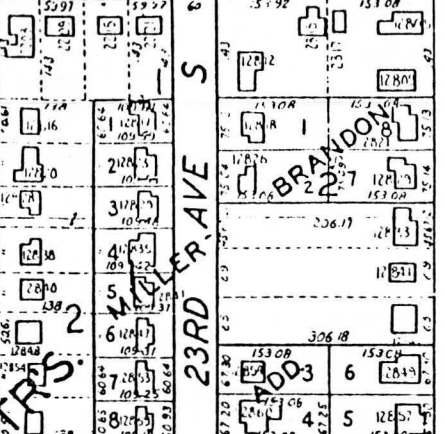
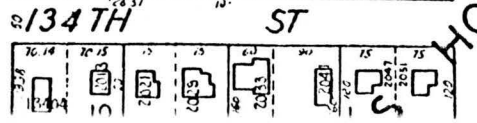
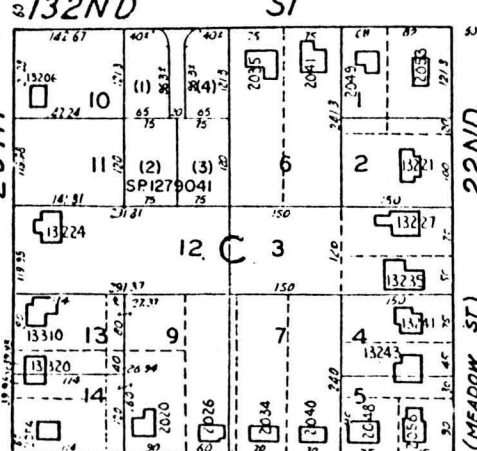
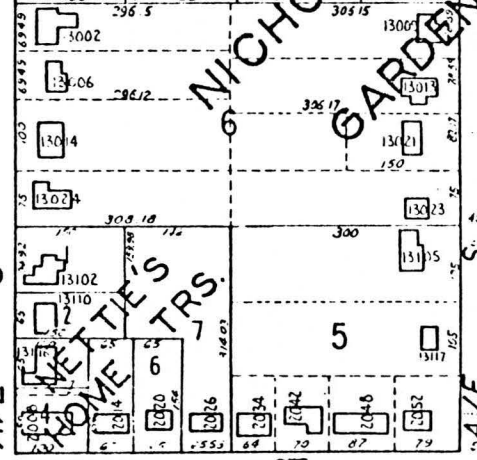
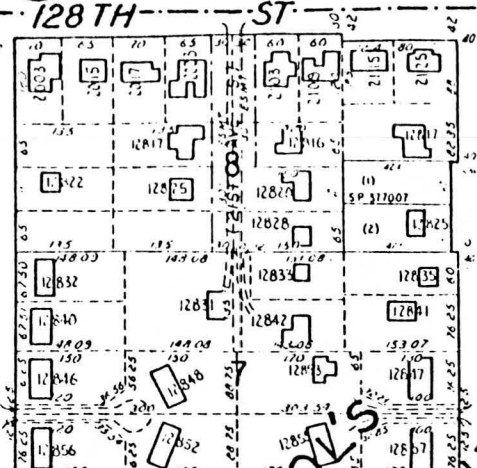
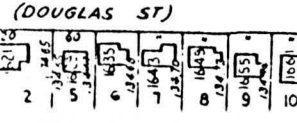
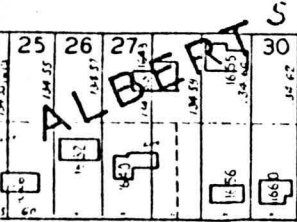
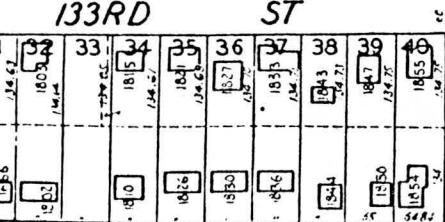
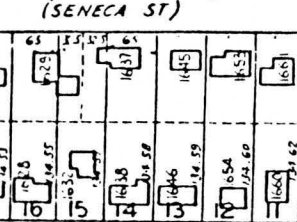
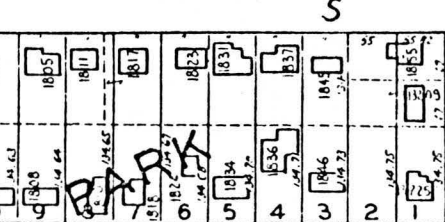
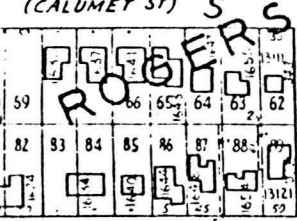
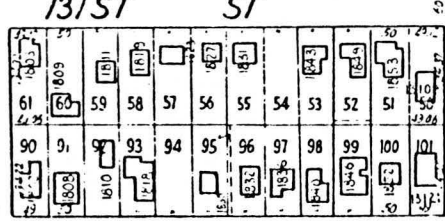
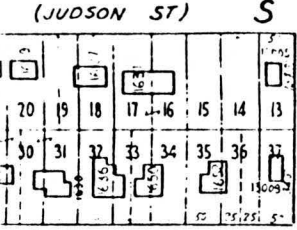
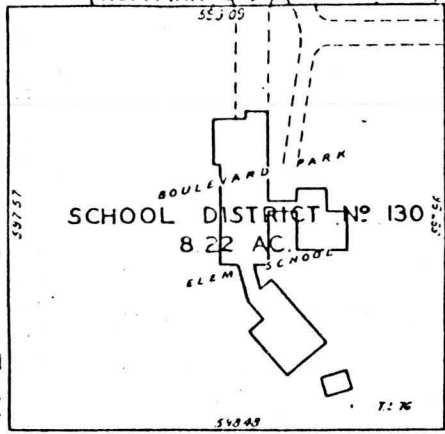
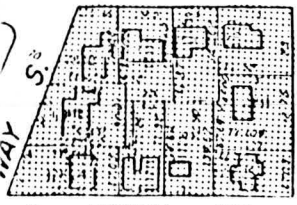
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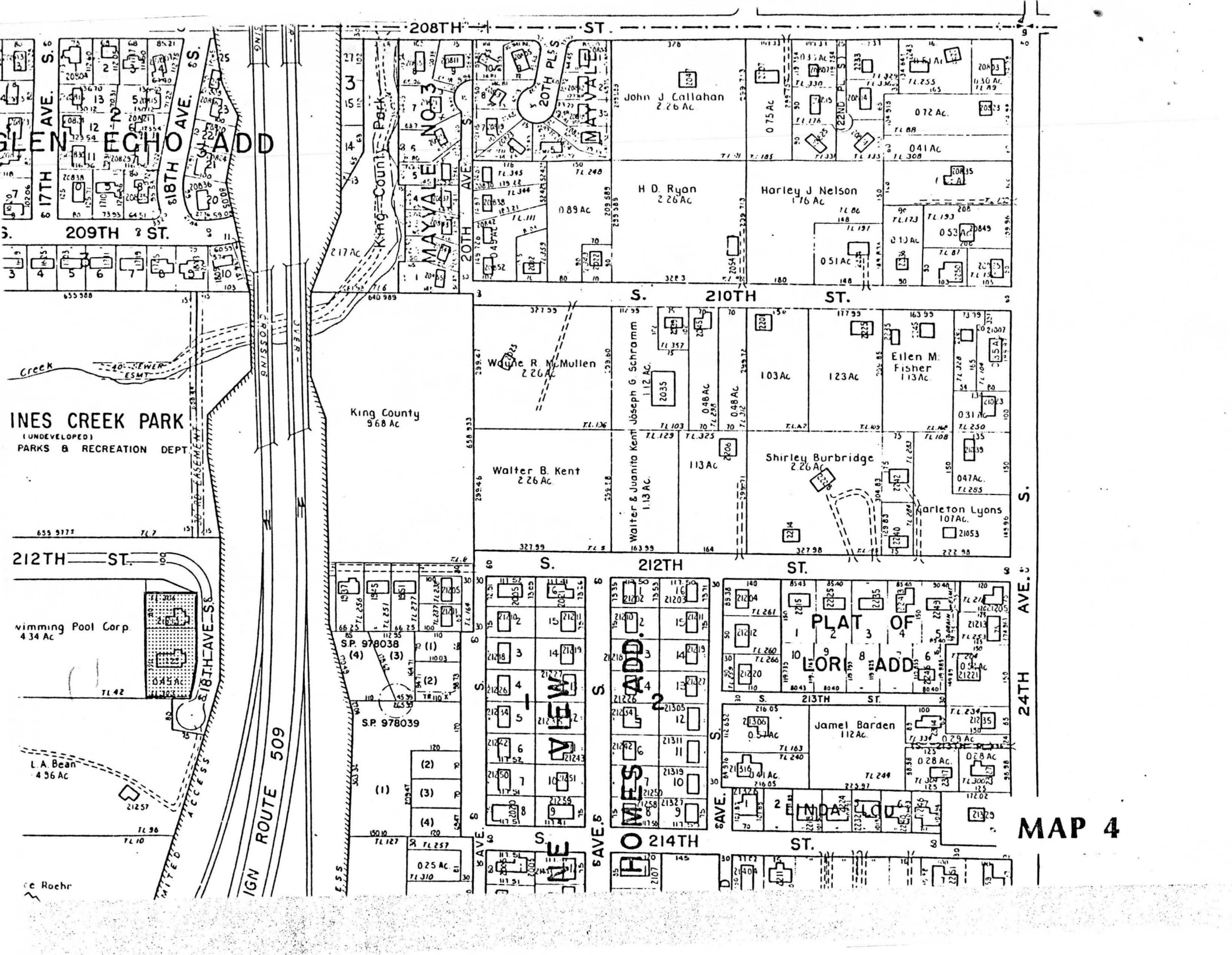
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B14W





INES CREEK PARK
 (UNDEVELOPED)
 PARKS & RECREATION DEPT

Swimming Pool Corp
 4.34 Ac

L.A. Bean
 4.36 Ac

MAP 4

February 23, 1984

Ms. Jody Yamanaka
Department of Planning and Research
Port of Seattle
P. O. Box 1209
Seattle, Washington 98111

Dear Ms. Yamanaka:

We have reviewed the draft recommendations pertaining to the proposed Noise Remedy Program criteria and boundaries, program implementation, and purchase assurance "work plan" (including maps 1 through 6) which were attached to your memorandum dated February 2, 1984. Our review comments follow.

We note that an additional 44 single family residences are recommended for inclusion in the acquisition program. This is based on new recommended criteria of "buffer for airport-related development" and "neighborhood continuity" rather than on the previously recommended Port's noise criteria for defining noise remedy boundaries. As such, these additional homes are apparently to be considered as "exceptions" to the Port's noise criteria.

Since we were not involved in the detailed discussions involving the community representatives which led up to these recommendations, we do not know all of the reasons why these specific 44 homes were selected for the acquisition program. For example, we do not understand why the additional homes along 24th Avenue South (as shown on map 1) are being recommended for acquisition. They do not appear to meet the criterion of "buffer for airport-related development," which was given as the reason for recommending acquisition in this case, since the land immediately to the west is neither designated for potential airport-related facility development or commercial development on Port-acquired land. This land to the west includes private lands, Port buffer land, and reservoir site land.

Our primary concern is that any criterion employed should be reasonable and fair to all concerned and be related to significant airport noise impacts as determined by a documented assessment. The basis for these criteria as well as their application should be presented in a clear manner.

We also note that an additional 275 single family residences are recommended for inclusion in the purchase assurance program. Our views regarding the purchase assurance program are presented in our February 6, 1984, letter to Mr. Richard Ford. At this time, we do not have any further comments on this subject except to emphasize again that special care must be taken in developing the purchase assurance program because of certain basic questions which still need to be resolved, including those related to policies, procedures, and eligibility criteria under our Airport Improvement Program. Needless to say, we

do not want to see a purchase assurance plan finalized prematurely, especially one that could mislead the involved citizens because certain federal actions are implied on which there are still some basic uncertainties.

Please call if you would like to discuss our review comments in more detail.

Sincerely,

Original signed by
George K. Saito
Senior Airport Planner

cc:
John Coppinger, SEA-TAC TWR