

RESOLUTION NO. 2943, AS AMENDED

A RESOLUTION of the Port Commission of the Port of Seattle, King County Washington, adopting an updated Noise Remedy Program for Sea-Tac International Airport as an element to replace the Noise Remedy element of the previously adopted Sea-Tac Communities Plan described in Resolution No. 2626.

WHEREAS, the Port of Seattle along with King County completed the Sea-Tac Communities Plan and the Port adopted it by Resolution No. 2626 on June 8, 1976, as a guide to development and environmental compatibility for the Airport and its vicinity;

WHEREAS, the Sea-Tac Communities Plan contained a major element dealing with noise impact and mitigation;

WHEREAS, that element contained a series of noise remedy proposals dealing with property acquisition and measures to reinforce or stabilize other impacted residential areas;

WHEREAS, the Port of Seattle in accordance with the Sea-Tac Communities Plan has continued a program of land acquisition for noise compatibility purposes;

WHEREAS, such programs are based on extensive technical analysis of noise exposure patterns;

WHEREAS, periodic updating of such noise exposure information is desirable to determine changes in noise patterns and to employ more recent measurement technology;

WHEREAS, the Port Commission authorized an updated Noise Exposure Study which was completed in June 1982;

WHEREAS, a complete update of the Noise Remedy Program portion of the Sea-Tac Communities Plan was authorized by the Commission on October 26, 1982; and

WHEREAS, the previous Environmental Impact Statement has been adopted and an addendum has been prepared in compliance with the State Environment Policy Act;

NOW, THEREFORE, BE IT RESOLVED by the Port Commission of the Port of Seattle as follows:

Section I. The Noise Remedy Program For Sea-Tac International Airport and Environs (attached as Appendix A) is adopted as a guide for carrying out noise remedy actions at Sea-Tac International Airport and in the surrounding communities. The boundaries for carrying out noise remedy actions are set forth in the Exhibit entitled Overall Program Boundaries (in Appendix A).

Section II. Noise Abatement. The identified nine noise abatement remedies shall be implemented by Port staff when appropriate, or encouraged by Port staff when other agencies are responsible for implementation. The Executive Director is authorized to hire or assign staff and/or consultants to carry out the remedies, and provide the office space, support services, equipment and facilities necessary to effectively implement the abatement remedies. The identified abatement remedies shall be undertaken subject to budgetary approvals.

Section III. Acquisition. Properties designated for acquisition in the Noise Remedy Program for Sea-Tac International Airport and Environs (Appendix A) shall be acquired on the basis of qualified appraisals and/or by eminent domain proceedings following amendment of Unit 18 of the Comprehensive Schedule as contemplated to include property identified in this section. Generally, the sequence for acquiring identified properties shall be prepared by staff and based on noise levels as described in the established noise exposure contours by acquiring groups of homes in the higher noise areas first and proceeding to lower noise areas. In selecting particular properties for acquisition within groups of homes being acquired, priority for acquisition shall be given to hardship cases as identified by a hardship committee which shall be appointed by the President of the Port Commission. Otherwise, sequencing of acquisitions shall be determined by the Port's Acquisition Program Manager. The decisions as to which houses shall be acquired first shall be final and shall not be subject to appeal. In implementing the acquisition program, the Executive Director is authorized to hire staff, contract for services, pay for property, provide relocation benefits as required by law, and carry out all acquisition proceedings as are necessary subject to budgetary approval.

Section IV. Demonstration Project and Additional Mitigation Remedies. The Port shall implement a Demonstration Project to test remedies in addition to acquisition. Homes to apply and test the transaction assistance remedy and the noise insulation remedy will be selected by staff from volunteers in the noise

impacted community. To carry out the Demonstration Project, the Executive Director is authorized to hire or assign staff, and take all necessary steps to contract for services, contract for noise insulation improvements, (including, but not limited to, preparing plans and specifications, advertising for bids awarding contracts and accepting contracts upon completion), make remedy payments, and provide office space, support services, equipment and facilities as necessary. Furthermore, the Port shall participate with citizen* committees and agencies as necessary to coordinate the project and inform the public and interested organizations concerning the progress and results of the Demonstration Project.

The Demonstration Project shall be undertaken with a budget not to exceed one million dollars, of which \$650,000 is included in the 1985 Budget. Approximately \$375,000 of the total applies to consulting services for acoustic analysis, real estate analysis and appraisal services and architectural and engineering services. Upon completion of the Demonstration Project, Port staff shall deliver a report that evaluates the tested remedies and recommends changes, refinements, and/or additions to the noise remedies. Furthermore, specific rules, regulations, and procedures to be used in implementing the tested remedies shall be prepared. In general, such program rules, regulations and procedures shall give priority in scope and eligibility on the basis of greatest length of residency, intensity of noise and hardship (utilizing a hardship committee and procedures as outlined in Section III.) When appraisals are required to conduct the Transaction Assistance Program, qualified appraisals shall be obtained using comparable sales data from outside the noise impacted area, as well as nearby, similar to methods presently employed by the Acquisition Program (Section III).

Based on the findings and changes recommended in the Demonstration Project, the Port shall proceed to implement noise remedies in addition to acquisition. The Executive Director is authorized to hire or assign staff to implement the program, and the staff shall be provided with necessary office space, support services, equipment, facilities, and contracting authority subject to budgetary approvals.

Section V. Reporting. Annual reports summarizing the progress, effectiveness, and cost of the Noise Remedy Program shall be prepared in conjunction with budget preparations for use in evaluating the program and

*The word citizen was a final amendment to the resolution, and was made on January 8, 1985 just prior to adoption of the resolution.

impacted community. To carry out the Demonstration Project, the Executive Director is authorized to hire or assign staff, and take all necessary steps to contract for services, contract for noise insulation improvements, (including, but not limited to, preparing plans and specifications, advertising for bids awarding contracts and accepting contracts upon completion), make remedy payments, and provide office space, support services, equipment and facilities as necessary. Furthermore, the Port shall participate with committees and agencies as necessary to coordinate the project and inform the public and interested organizations concerning the progress and results of the Demonstration Project.

The Demonstration Project shall be undertaken with a budget not to exceed one million dollars, of which \$650,000 is included in the 1985 Budget. Approximately \$375,000 of the total applies to consulting services for acoustic analysis, real estate analysis and appraisal services and architectural and engineering services. Upon completion of the Demonstration Project, Port staff shall deliver a report that evaluates the tested remedies and recommends changes, refinements, and/or additions to the noise remedies. Furthermore, specific rules, regulations, and procedures to be used in implementing the tested remedies shall be prepared. In general, such program rules, regulations and procedures shall give priority in scope and eligibility on the basis of greatest length of residency, intensity of noise and hardship (utilizing a hardship committee and procedures as outlined in Section III.) When appraisals are required to conduct the Transaction Assistance Program, qualified appraisals shall be obtained using comparable sales data from outside the noise impacted area, as well as nearby, similar to methods presently employed by the Acquisition Program (Section III).

Based on the findings and changes recommended in the Demonstration Project, the Port shall proceed to implement noise remedies in addition to acquisition. The Executive Director is authorized to hire or assign staff to implement the program, and the staff shall be provided with necessary office space, support services, equipment, facilities, and contracting authority subject to budgetary approvals.

Section V. Reporting. Annual reports summarizing the progress, effectiveness, and cost of the Noise Remedy Program shall be prepared in conjunction with budget preparations for use in evaluating the program and

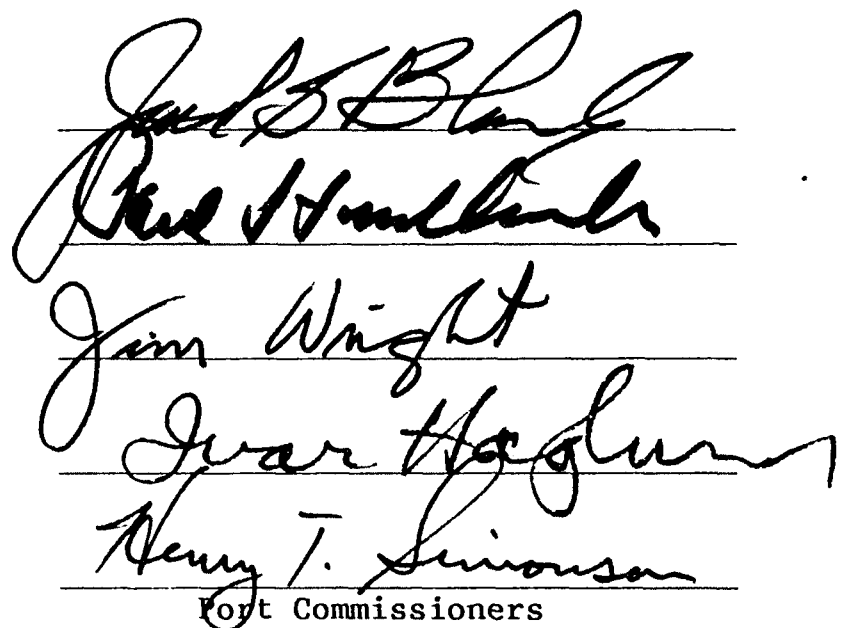
budgeting for its continuation. Particular reporting attention shall be given to the results obtained from the first year's output from the two newly authorized remote noise monitoring stations. Beginning in 1990 and every five years thereafter, a major review and update of the program will be conducted with full public review. The program will be evaluated for its effectiveness in accomplishing the goals and objectives identified in the program.

Section VI. The Director of Aviation shall have the authority to apply for and accept appropriate grants and funds to implement the Noise Remedy Program.

Section VII. The Executive Director's authority as set forth herein shall be undertaken subject to budgetary amounts and shall not be limited by Resolution No. 2887, Paragraphs V, VII, IX or X.

Section VIII. Local jurisdictions shall be encouraged to participate in achieving the goals of this plan, and in carrying out their responsibilities to the communities in the Sea-Tac Airport vicinity.

ADOPTED by the Port Commission of the Port of Seattle at a regular meeting held this 8th day of January, 1985 and duly authenticated in open session by the signatures of the Commissioners voting in favor thereof and the seal of the Commission.



Henry T. Simonson
Port Commissioners

(Appendix A - Noise Remedy Program for Sea-Tac International Airport and Environs.)

APPENDIX A
RESOLUTION NO. 2943
AS AMENDED

NOISE REMEDY PROGRAM

For

Sea-Tac International Airport and Environs

Port of Seattle

As Amended

January 1985

CONTENTS

<u>Section</u>	<u>Page</u>
1	OVERVIEW OF RECOMMENDED PROGRAM 1
	Background 1
	Overall Program Goals 1
	Two Kinds of Noise Remedies 2
	Program Implementation 2
2	NOISE ABATEMENT REMEDIES 4
	Noise Abatement Goal 4
	Recommended Noise Abatement Measures 4
	A-1. Explore Limited Rescheduling of Nighttime Flights 4
	A-2. Eliminate Training Activity 5
	A-3. Use VOR Radials to Curb Aircraft Drifting from Noise Abatement Track 6
	A-4. Expand Noise Monitoring System 7
	A-5. Establish Noise Abatement Office 9
	A-6. Establish Noise Abatement Committee 10
	A-7. Use Siting of On-Airport Facilities as Noise Buffer 11
	A-8. Restrict Taxiing of Aircraft to/from Maintenance Areas During Nighttime Hours 12
	A-9. Support Compliance With FAR Part 36 13
3	NOISE MITIGATION REMEDIES 15
	Noise Mitigation Goal 15
	Recommended Noise Mitigation Measures 15
	M-1. Outright Acquisition 15
	M-2. Sound Insulation 16
	M-3. Transaction Assistance 16
	M-4. Easement Acquisition 18
	M-5. Property Advisory Services 19
	M-6. Local Government Remedy Support 20
	Off-Airport Program Areas 20
	Acquisition 20
	Neighborhood Reinforcement 23
	Cost-Sharing Insulation 23
	Application of Noise Remedies 24
	Acquisition Area - Measures M-1 and M-5 25
	Neighborhood Reinforcement Area - Measures M-2, M-3, M-4, and M-5 26
	Cost Sharing Insulation Area - Measures M-2, M-4, and M-5 29

CONTENTS (Continued)

<u>Section</u>		<u>Page</u>
4	DEMONSTRATION PROJECT	32
	Need for Such a Project	32
	General Description of the Recommended Project	33
	Sound Insulation Component	33
	Transaction Assistance Component	35
	Property Advisory Service Component	35
	Project Time Schedule	36
	Estimated Costs and Financing of the Project	37
5	PROGRAM SUMMARY	39

PREFACE

The recommended Sea-Tac International Airport Noise Remedy Program presented herein represents the equivalent of Chapter 6 of the complete Noise Remedy Program Update Background Studies. This approach has been taken so that the recommended program can function either as a "stand alone" end product or as one part of the overall report.

Section 1
OVERVIEW OF RECOMMENDED PROGRAM

BACKGROUND

As adopted by the Port of Seattle Commission in 1975,* the nationally recognized Sea-Tac Communities Plan included an extensive program designed to improve aircraft noise exposure conditions for that part of King County, Washington, most affected by the presence and operation of Sea-Tac International Airport. Accomplished with fund assistance from the Federal Aviation Administration (FAA), implementation to date of the Sea-Tac Communities Plan has involved the outright acquisition of some 730 parcels of land at a cost in excess of \$41 million. Approximately 2,500 persons have also been relocated away from high noise exposure areas situated to the north, west, and south of the Airport boundary (as it was in 1975-1976).

This document describes an updated noise remedy program for Sea-Tac International Airport and its environs. Developed on the basis of new noise exposure information produced as part of a special 1982 study** by the Port of Seattle, the updated program does include recommendations for certain revised/added noise abatement procedures, as well as the purchase of some additional single-family homes. However, the program's primary focus is on such noise remedies as sound insulation, real estate sales assistance, encouragement of local government neighborhood reinforcement, and the acquisition of appropriate aviation easements by the Port.

OVERALL PROGRAM GOALS

As first expressed by the 1975 Sea-Tac Communities Plan, the various noise remedy efforts that have been taken to abate or mitigate aircraft noise exposure are based on several important program goals. In particular, these goals are to:

- o Continue the operation of Sea-Tac International Airport in its present location for as long into the future as necessary.
- o Make the Airport and surrounding community better neighbors.
- o Enhance and protect existing areas within the Airport Environs that are planned for continued use as residential neighborhoods.

*The Plan was also formally adopted by the King County Council in 1976.

**"Sea-Tac International Airport Noise Exposure Update," June 1982.

TWO KINDS OF NOISE REMEDIES

The recommended program consists of two different but related kinds of remedies for the noise associated with Sea-Tac International Airport. When referring to Airport and/or air traffic control actions that are designed to lessen noise produced by the source (e.g., the aircraft engine), the term noise abatement is used. When off-Airport measures are discussed that make aircraft noise less intense, less serious, or less severe for receivers of the "unwanted sound" (e.g., occupants of the Airport Environs), the term noise mitigation is used. As detailed in the pages that follow, the updated Sea-Tac remedy program consists of nine noise abatement actions and five noise mitigation measures.

PROGRAM IMPLEMENTATION

The overall Noise Remedy Program is designed to be accomplished over the period from January 1985 through the year 2000. Thereafter, some ongoing noise remedies may remain in effect depending on program status. Most of the nine noise abatement remedies are already in effect or will be by the end of 1985. The most extreme off-Airport noise mitigation remedy, outright acquisition, is to be accomplished by the end of 1990.

In general terms, the mitigation effort would involve: (a) fee simple acquisition of some 524 single-family residential properties; (b) the use of transaction or sales assistance by approximately 1,147 owner-occupants at some point during the 1986-2001 Program implementation period (assuming 40% of eligible households are transacted); (c) sound insulation of nearly 1,434 homes at no cost to their owners (assuming 50% of eligible households are insulated); and (d) sound insulation of another 3,500 single-family dwellings on a cost-sharing basis (assuming 50% of eligible households are insulated). In addition, an indeterminate number of aviation easements would be purchased by the Port of Seattle over the next decade and one-half.

Calculated on the basis of constant 1984 dollars, the updated Noise Remedy Program would require approximately \$138 million in capital funds. This sum represents a gross average of \$9.2 million in capital funds during each of the calendar years from 1986 through 2000.

PROGRAM IMPLEMENTATION (Continued)

To maintain close contact with the communities affected by the Noise Remedy Program, the Port intends to establish appropriate citizen advisory committees for each phase of implementation. These committees will be similar to those established in the past years of the noise remedy effort.

Section 2
NOISE ABATEMENT REMEDIES

NOISE ABATEMENT GOAL

In keeping with the overall Program goals previously described, specific noise abatement remedies are to be employed at Sea-Tac International Airport that are intended to:

- o Reduce present and future noise exposure levels to the maximum possible extent by means of Airport/aircraft operational changes.

The extent to which this noise abatement goal is actually achieved will have a major bearing on how much "residual" noise exposure needs to be mitigated (and paid for) within the Airport Environs.

RECOMMENDED NOISE ABATEMENT MEASURES

Nine noise abatement measures are recommended as part of the updated Sea-Tac remedy program. The following information is provided for each of these measures: brief description; anticipated effect of implementing the measure; implementation steps and schedule; responsible agency (or agencies); estimated costs and sources of funding; and the relationship to other plans, programs, policies, or procedures.

Measure A-1. Explore Limited Rescheduling of Nighttime Flights

Description:

This measure would involve the voluntary rescheduling of the flight times (earlier or later as the case may be) of nighttime short-haul flights by jet aircraft. The measure would primarily address those short-haul flights that currently are scheduled to operate between 10 p.m. and midnight or between 5 a.m. and 7 a.m.

Anticipated effect of implementing measure:

Implementation of this measure would reduce the number of operations by jet aircraft during periods of low ambient noise in the Airport Environs.

Implementation steps and schedule:

All of the short-haul flights during nighttime hours arrive from or depart to Portland, Oregon, and involve nine different airlines. The Port Aviation Department should initiate exploratory discussions with some of these airlines in an attempt to persuade them to reschedule the flights in question. In these discussions safety, cost and efficiency issues will be taken into account. To the extent this proves practical, it is estimated that the measure could be fully (or at least partially) implemented within six months of initiation.

Responsible agency:

Port of Seattle Aviation Department.

Estimated costs and source of funding:

There are no capital costs associated with implementing this measure. Port of Seattle staff time would be necessary to conduct meetings with airline personnel, but this cost is incidental to normal operating procedures.

Relationships to other plans, programs, policies, or procedures:

Any airline schedule changes would have to be incorporated in published documents such as the Official Airline Guide.

Measure A-2. Eliminate Training Activity

Description:

This measure would reduce the use of Sea-Tac International Airport for training activities (primarily practice instrument approaches by military aircraft).

Anticipated effect of implementing measure:

Because the current level of training activity is very low, the discouragement of this activity would not significantly alter aircraft noise exposure as depicted by the noise contours or grids. The real benefit of carrying out the measure would be to reduce the "single event" noise exposure. Aircraft currently using Sea-Tac for training activity would have to use other airports.

Implementation steps and schedule:

As the training activity is primarily by military aircraft, the best approach would be to try and have this activity moved to another facility on a voluntary basis. This entails the Port Aviation Department contacting the appropriate military personnel and soliciting their cooperation. Should such cooperation not be forthcoming, the Port could adopt a policy that training activity not be permitted at Sea-Tac, and this policy could be incorporated in the Airport Operating Rules and Regulations. If such a policy is adopted, then the FAA would be requested to inform pilots requesting permission for touch-and-gos, low approaches, etc., that such activity is not permitted at Sea-Tac. It is estimated that this measure could be implemented within six months of initiation.

Responsible agencies:

The Port of Seattle Aviation Department would have the responsibility for initiating the measure, and the FAA would be requested to assist in implementation.

Estimated costs and source of funding:

There are no capital costs associated with implementing this measure. Port of Seattle staff time would be required to coordinate necessary changes to pertinent documents such as the Airport Operating Rules and Regulations. This cost is incidental to normal operating expenses.

Relationship to other plans, programs, policies, or procedures:

Implementation of the measure may require modifications to the Airport Operating Rules and Regulations.

Measure A-3. Use VOR Radials to Curb Aircraft Drifting from Noise

Abatement Track

Description:

This measure uses very high frequency (VHF) omnidirectional range radials to curb departing aircraft from drifting off the runway heading tracks specified in Tower Order SEA TWR 7110.071C, Noise Abatement Procedures.

Anticipated effect of implementing measure:

As a result of early Study recommendations, the Port requested that the FAA investigate the use of VOR radials as a means of avoiding aircraft drift. Due to this recommendation and subsequent FAA evaluation, the use of VOR radials for turbojet aircraft departures in both a north and south flow of traffic has been implemented.

Implementation steps and schedule:

Measure already in effect.

Responsible agencies:

Port of Seattle, Aviation Department.

Evaluation and implementation: FAA.

Estimated cost and source of funding:

The cost of implementing this measure was incidental to normal operating expenses as it involved Port of Seattle and FAA staff time only.

Relationship to other plans, programs, policies, or procedures:

Implementation of this measure requires modification to the Standard Instrument Departure (SID) procedures for Sea-Tac as published in Jeppesen & Co. charts.

Measure A-4. Expand Noise Monitoring System

Description:

Measure #A-4 would expand the noise monitoring system at Sea-Tac by installing two additional permanent monitors in locations east and west of the Airport. On the east side, it is proposed that a permanent noise monitor be installed in the Riverton Heights area, where noise levels in excess of 70 Ldn have been projected. To the west, it is proposed that a permanent noise monitor be placed in a location southwest of the Airport; noise levels in this general location have also been projected to be in excess of 70 Ldn.

Anticipated effect of implementing measure:

Implementation of this measure will allow the Port to monitor noise in two locations where previously measurements have not been available and where aircraft noise has been perceived by the respective communities to be a major problem.

Implementation steps and schedule:

The first step toward implementing this measure has already been accomplished; namely, the Port Commission approved the purchase of two additional noise monitors. The next step--procurement of the monitors--is currently being undertaken by the Port Engineering Department. Once the monitors are in hand, they will be installed and connected to the existing noise monitoring system during 1985.

Responsible agency:

The Port of Seattle Engineering Department is responsible for the procurement, installation, and operation of the noise monitors.

Estimated cost and source of funding:

Estimated cost of the two new permanent noise monitors and installation is \$92,000. This amount has been authorized, and work is underway.. Once installed and in operation, the estimated \$600 annual maintenance cost would be covered by the Sea-Tac Airport's maintenance budget.

Relationship to other plans, programs, policies or procedures:

Noise exposure information recorded by the new monitors would have to be incorporated into the existing noise reporting system.

Measure A-5. Establish Noise Abatement Office

Description:

This measure would establish a noise abatement office to initiate, implement, and monitor the various noise abatement actions discussed herein. Because of the demands for staff time to implement other noise remedy measures, it is recommended that the noise abatement office be established at the Airport. It should be staffed as follows: (a) by a noise analyst with knowledge of aviation, acoustics, and the ability to make public presentations; (b) by a noise technician with knowledge of the noise monitoring system, and (c) by an administrative aide to maintain accurate records of the various office activities (including receiving and taking appropriate action on noise complaints).

The noise abatement office should maintain a special information "hotline" that would enable the staff and residents of the Airport community to have two-way communications concerning particular noise events, runway use patterns, aircraft arrival and departure procedures, and similar questions. (At present this function is being carried out by the Aviation Department on a trial basis.) When a call is received, the office staff would provide information, make inquiries with the FAA's Air Traffic Control Tower and elsewhere, and record the source and nature of the call. This phone line would furnish the Port with direct and immediate access to citizens affected by Sea-Tac's operations, and also provide these citizens with similar access to Airport representatives who are able to provide accurate and up-to-date information.

The noise abatement office should be in direct communication with the property advisory services (see latter part of this document) off-Airport office.

Anticipated effect of implementing measure:

Implementation of this measure would provide the Port with the capability, within a single location, to:

- o maintain continuous contact with community leaders and citizens (respond to noise complaints)

- o implement and monitor other noise abatement measures
- o evaluate changes in flight patters or flight operations

Implementation steps and schedule:

Following approval of this measure, the first step toward implementation would be to hire the requisite noise abatement office staff. It is estimated that this measure could be fully implemented within six to twelve months after initiation.

Responsible agency:

The Port of Seattle's Aviation Department should be responsible for the establishment and operation of the recommended noise abatement office.

Estimated costs and source of funding:

It is estimated that the capital cost of establishing the noise abatement office would amount to some \$20,000, assuming suitable Port office space is available at the Airport (this includes an allowance of \$10,000 for computing equipment). Annual operating costs are estimated to be about \$150,000, of which approximately \$100,000 would be for staffing.

Relationship to other plans, programs, policies, or procedures:

Some of the activities that the noise abatement office staff would be responsible for are currently being handled by others in various Port departments. The consolidation of these various activities in the noise abatement office would necessitate a realignment of internal staff responsibilities and assignments.

Measure A-6. Establish Noise Abatement Committee

Description:

The sixth recommended measure would establish a noise abatement committee to monitor applicable noise remedy activities and recommend new procedures. This committee, to function in an advisory capacity to the Port's Director of Aviation, would monitor the effectiveness of the noise abatement program and the incidence of noncompliance with noise abatement procedures, and review records of noise complaints, among other things.

Implementation steps and schedule:

This measure has already been partially implemented. In May 1984, a committee was established, primarily through efforts of the Aviation Department, to examine current airline compliance with noise abatement flight tracks. Membership includes representatives from organized private or semi-public community/interest groups and also from local, regional, state, and federal public agencies.

Responsible agency:

Port of Seattle Aviation Department.

Estimated costs and source of funding:

The only costs involved are for Port of Seattle Aviation Department staff time--such costs are incidental to normal operating expenses.

Relationship to other plans, programs, policies, or procedures:

The activities of this committee should be closely coordinated with the noise abatement office and the property advisory services office (should both of these functions be established).

Measure A-7. Use Siting of On-Airport Facilities as Noise Buffer

Description:

As facilities at Sea-Tac are expanded, new or remodeled buildings should be used as a buffer between taxiing aircraft and adjacent noise-sensitive uses to the extent possible, consistent with the operational function or purpose of the on-Airport activity involved.

Anticipated effect of implementing measure:

Implementation of this measure where, when, and as possible may be expected to provide some reduction in noise exposure for off-Airport development immediately adjacent to the Sea-Tac boundary.

Implementation steps and schedule:

This measure should be reflected by appropriate policy guidelines for the Sea-Tac Master Plan Update Study that is currently under way. Further, the requirement that Port staff review all plans for the construction of on-site buildings at the Airport should be incorporated in the "Regulations for Tenant Construction at Sea-Tac International Airport." This requirement is particularly important for any development that may take place on the west side of the airfield. Implementation of this measure should take place indefinitely (as long as buildings continue to be constructed at Sea-Tac).

Responsible agency:

The Port of Seattle's Aviation Department, together with the Port's Engineering and Planning & Research Departments.

Estimated costs and source of funding:

The initial cost of implementing this measure is represented by Port of Seattle staff time--such costs are incidental to normal operating expenses. Over the long term, it is possible that additional building construction costs may be incurred as a result of the measure, but such costs would have to be evaluated on a case-by-case basis.

Relationship to other plans, programs, policies, or procedures:

Implementation of this measure would require input to the Sea-Tac Master Plan Update Study policy guidelines and incorporation of appropriate text in the "Regulations for Tenant Construction at Sea-Tac International Airport."

Measure A-8. Restrict Taxiing of Aircraft to/from Maintenance Areas during Nighttime Hours

Description:

This particular measure would require airlines that use the Airport to tow aircraft to and from maintenance areas or to reposition aircraft from one gate to another during nighttime hours.

Anticipated effect of implementing measure:

There are currently as few as 4 or 5 movements under power that occur during nighttime hours. However, the benefits to the adjacent communities in terms of alleviating single event annoyance would be substantial if the aircraft were towed during the nighttime hours when the ambient noise level is very low.

Implementation steps and schedule:

It is recommended that the Port Aviation Department contact those airlines that currently move aircraft on the ground under power (rather than by towing) during nighttime hours to see if voluntary compliance with the measure can be accomplished. If voluntary compliance cannot be achieved, the Port should investigate the possibility to incorporate this measure in the Airport Operating Rules and Regulations--thus requiring compliance by all airlines. It is estimated that this measure could be implemented, either on a voluntary or mandatory basis, within three months of approval.

Responsible agency:

Port of Seattle Aviation Department.

Estimated costs and source of funding:

Port Aviation staff time and related costs will be necessary to implement this measure. Such costs are considered incidental to normal operating expenses.

Relationship to other plans, programs, policies, or procedures:

In the event that mandatory compliance is a necessity, the measure would need to be incorporated in the Airport Operating Rules and Regulations.

Measure A-9. Support Compliance with FAR Part 36

Description:

Compliance with FAR Part 36 noise standards is typically required by January 1, 1985, with few exceptions. Some airlines, with the support of certain airport sponsors, are applying to the FAA for exemptions that would result in delays in complying with these noise standards. Under this final recommended measure, the Port would support efforts to ensure compliance with the federal noise standards in accordance with the current schedule.

Anticipated effect of implementing measure:

If compliance with the noise standards is achieved as now scheduled, all of the older, noisier aircraft (now mainly operated by foreign air carriers) would be precluded from operating at U.S. airports. The projected noise contours for Sea-Tac assume that aircraft which do not meet FAR Part 36 would not use the airport after the legislated dates.

Implementation steps and schedule:

The Port has already begun to implement this measure as a result of an early study recommendation. A letter was sent to the FAA Administrator in March 1984 urging support of compliance with the FAR Part 36 noise standards in accordance with the current schedule. As noted, implementation of this measure has already started and should continue until full compliance with FAR Part 36 noise standards has been achieved.

Responsible agency:

Port of Seattle Commission and the Port's Aviation Department. Another agency responsible is the FAA which is involved in implementing the U.S. Department of Transportation's Aviation Noise Abatement Policy dated November 18, 1976.

Estimated costs and source of funding:

Port of Seattle Aviation Department staff time will be necessary to continue implementation of this measure--the cost is considered incidental to normal operating expenses.

Relationship to other plans, programs, policies, or procedures:

Not applicable.

Section 3

NOISE MITIGATION REMEDIES

NOISE MITIGATION GOAL

As with the various noise abatement actions described in Section 2, a general goal has been established relative to the application of noise mitigation measures. That goal is:

- o To provide residential property owners and other occupants of the Sea-Tac International Airport environs with maximum possible relief from adverse present and future noise exposure.

The degree to which this goal is actually accomplished depends largely upon (a) the acceptance and use by affected property owners of the noise mitigation measures hereinafter discussed, and (b) the amount of funds available to the Port of Seattle (from federal as well as local sources) over the 1984-2000 program period. Success of the program is also dependent on a good working relationship with the community. The community's cooperation may include such efforts as accommodating remedy personnel working on residential structures, assisting with noise audits, or cooperating with local government efforts.

RECOMMENDED NOISE MITIGATION MEASURES

Six noise mitigation measures are of particular importance to existing Airport Environs residents and property owners. These six measures, as generally described over the next several pages, represent what may be referred to as primary activities of the recommended Noise Remedy Program. Five can be implemented by the Port of Seattle with little or no direct involvement by other local governmental entities, and one measure must be carried out by local government jurisdictions.

Measure M-1. Outright Acquisition

The program initiated in 1972 by the Port of Seattle to acquire noise-sensitive residential properties located within high exposure areas should be continued. Some 524 single-family homes are recommended for outright (fee simple) acquisition. Of these 524 dwellings, 163 remain to be purchased by the Port from the 1,008 units designated for such action by the 1975-1976 Sea-Tac Communities Plan. Therefore, an additional 361 residences have been identified as part of this Noise Remedy Program Update Study. (Including homes acquired since 1975 under the Sea-Tac Communities Plan, a total of 1,369 have been identified for acquisition.)

Following acquisition of a given landholding and satisfactory relocation of the owners (if required), the Port would then have all structures removed and the lot returned to a natural, undeveloped condition. Depending upon location, the Port-owned property would then remain as "open space" or be converted to accommodate an appropriate compatible land use.

Measure M-2. Sound Insulation

About 9,000 to 10,000 existing single-family residences are eligible for special sound insulation. This is far and away the most important noise mitigation measure in terms of potential benefits to future as well as current residents of the Airport Environs.

The ability to achieve a significant level of noise reduction will vary. For example, the amount and type of sound insulation required would depend on: (a) the amount of aircraft noise exposure involved, and (b) the age, type of structure, and present condition of candidate dwellings. In cases, some portions of structures may better lend themselves to attenuation than others. A system of cost-sharing ranging from 100% Port-0% owner, to 50% Port-50% owner, or an alternative to noise insulation, is incorporated in the sound insulation recommendations for existing residential units, depending on the program area in which the home is located and the feasibility of insulating particular structures. Details for this program should become available as a result of the Demonstration Program.

Measure M-3. Transaction Assistance

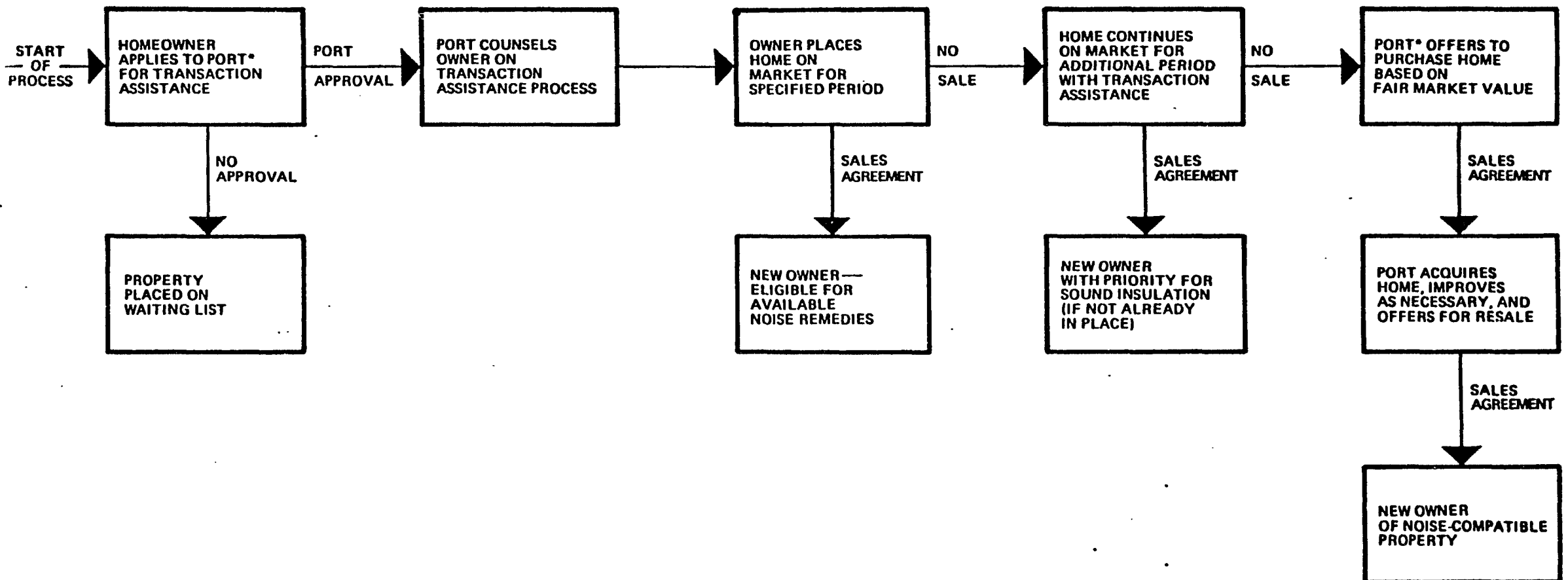
Formerly referred to as "purchase assurance," this measure is now termed transaction assistance in keeping with its primary function. The intent is to provide financial and technical assistance to owner-occupants of single-family residences who desire to sell out and move away from areas of relatively high noise exposure. Generally these areas are adjacent to or near areas proposed for outright acquisition by the Port of Seattle. This transaction (or sales) assistance process is illustrated in the form of a generalized flow diagram on the next page.

Sea-Tac International Airport Noise Remedy Program

GENERALIZED TRANSACTION ASSISTANCE PROCESS

(FOR NEIGHBORHOOD REINFORCEMENT PROGRAM AREA)

September 1984



* Port Action Limited By Local Housing Market Conditions to Assure that Transaction Assistance Program Achieves Goal of Neighborhood Reinforcement/Stabilization.

FLOW DIAGRAM

SOURCES: Port of Seattle
Peat, Marwick, Mitchell & Co.

The process has been designed (and will need to be administered) in such a way as to disrupt the local residential real estate market as little as possible. Properly handled, the transaction assistance noise remedy should aid an eligible homeowner to dispose of his or her hard-to-sell property in an orderly but reasonably sure fashion. If the various forms of assistance to be made available (all or a portion of real estate agent's fee, mortgage subsidy, sound insulation, etc.) do not result in an acceptable sales transaction, then the Port could acquire the house and lot at fair market value--minus the real estate fee--as "buyer of last resort." Following necessary improvements (which could include sound insulation), the Port would then resell the property to a willing buyer with an avigation easement attached to the deed.

In preparing appraisals for the Transaction Assistance Program comparables from noise-impacted areas, as well as other areas, will be used. The appraisal methodology will be similar to that currently practiced in the acquisition program area.

It should be emphasized that the amount and type of assistance to be provided by or through the Port would be governed not only by the availability of funds, but also by what is needed to "normalize" the local housing market; i.e., to obtain the number of sales transactions necessary to achieve a market turnover rate comparable to neighborhoods or areas not impacted by aircraft noise. Also, an excessive amount of real estate involvement by the Port of Seattle could actually "destabilize" the housing market/area and thus be counter to the various program goals that have been cited.

Measure M-4. Easement Acquisition

The Port should obtain avigation easements in return for sound insulation or transaction assistance, as well as for situations of a specialized nature in which the acquisition of such an easement is deemed to be of value. In addition, the possibility of a property owner being able to receive money for an appropriate avigation easement is also recommended as part of the updated Noise Remedy Program. Although noise exposure levels may not be affected by this form of remedy, the compensation derived by an owner from the sale of an avigation easement to the Port does "mitigate" the problem of unwanted sound (e.g., aircraft noise)--at least to some extent. In some residences, the Port could

purchase individual avigation easements from an eligible owner-occupant of a single-family structure who desires to continue living in the same location, even though the house cannot be satisfactorily sound-insulated. Other cases where avigation easements may be appropriate include churches. The easement fee paid by the Port could be used to provide some measure of noise remedy by sound insulating noise sensitive areas of church structures.

Measure M-5. Property Advisory Services

The relocation assistance furnished over the years by the Port's Real Estate Department to individuals and families affected by the outright acquisition of their homes has proven to be of great value. While this type of assistance can and should be continued until the acquisition effort is fully accomplished, certain other property advisory services also need to be offered by the Port. Both the recommended sound insulation and transaction assistance noise remedies are complex enough to cause many questions to be raised by affected property owners and other parties of interest.

Continuance and expansion of a comprehensive advisory service is important to the ultimate success of the recommended Noise Remedy Program. Residents and property owners of the Airport Environs need and should have access to timely, factual information--information that will enable them to (a) know what noise remedies they may be eligible for and how, (b) make good decisions when they have a variety of options to choose from, (c) properly cope with rumors (good or bad) that may crop up relative to the overall Program or any of its parts, and (d) assure their neighbors and friends that the various noise remedies are indeed aimed at improving the living, working, and leisure-time environment.

The two-way nature of this advisory service process should also provide the Port Staff and Commission with current information about the concerns of many who are daily confronted with Airport/aircraft impacts. Moreover, the degree of success or failure of the Program can be monitored to some extent by means of the process. To accomplish these potential results, the recommended advisory service should include the following, in addition to case-specific relocation assistance:

- o Information about noise exposure characteristics associated with individual property locations.

- o Information about the various noise remedies available for the use and benefit of affected property owners.
- o Consultation on housing-related decisions and options that an owner or occupant of residential property might require from time to time.
- o Referrals to other housing services, and guidance as to the locations and types of housing available in the Seattle area.

Measure M-6. Local Government Remedy Support

By insulating homes and assisting in real estate transactions, the Port with its limited authority can participate in making the airport and surrounding residents better neighbors. But, the Port alone cannot accomplish all program goals. Local governments with land use jurisdiction and obligations to provide services must also participate if the goal is to be achieved, especially in the long term. New homes should be built to insulate the interior living spaces from unacceptable noise; changing land uses must in part be determined based on noise levels, and residents should be provided services commensurate with their needs. The sixth noise remedy is therefore dependent on local government action. The Port will encourage the local governments to undertake projects, provide services, and adopt laws that reinforce the neighborhoods and make them compatible with the airport. The Port will also work closely with the affected jurisdictions in coordinating activities and exchanging data.

OFF-AIRPORT PROGRAM AREAS

Reflecting noise exposure conditions varying from highest to lowest, three different areas have been identified and delineated as locations within which one or more of the primary mitigation measures would be applied. These three off-Airport program application areas have been designated as (1) Acquisition, (2) Neighborhood Reinforcement, and (3) Cost-Sharing Insulation. Brief descriptions of the different areas follow, together with a map on the next page that shows their geographic boundaries.

Acquisition

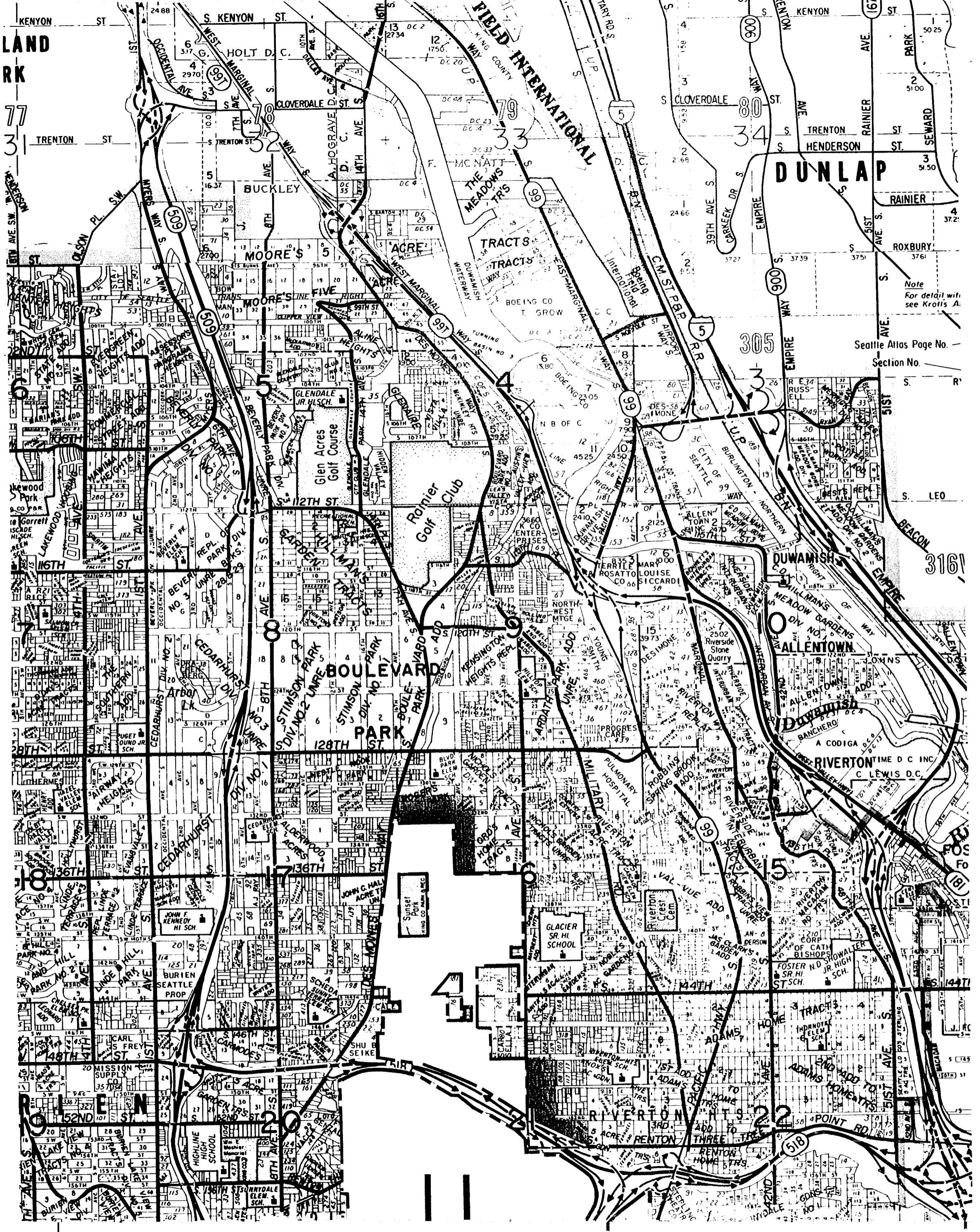
The updated Noise Remedy Program recommends two key criteria for the continued use of outright acquisition as a primary noise remedy. They are:

1. Program focus should be on the acquisition of single-family residences in aircraft noise exposure areas of Ldn 75* and over in the year 2000, or Ldn 80 in the year 1980.
2. Properties identified for acquisition (but not yet obtained) by the 1975-1976 Sea-Tac Communities Plan should continue to be eligible.

*The day-night sound level, or Ldn, is the currently accepted method used to describe aircraft noise exposure. Ldn values are expressed in decibels and represent the level of noise experienced over an average annual 24-hour period.

LAND
RK

77
31



Note
For detail with
see Kroll's A.

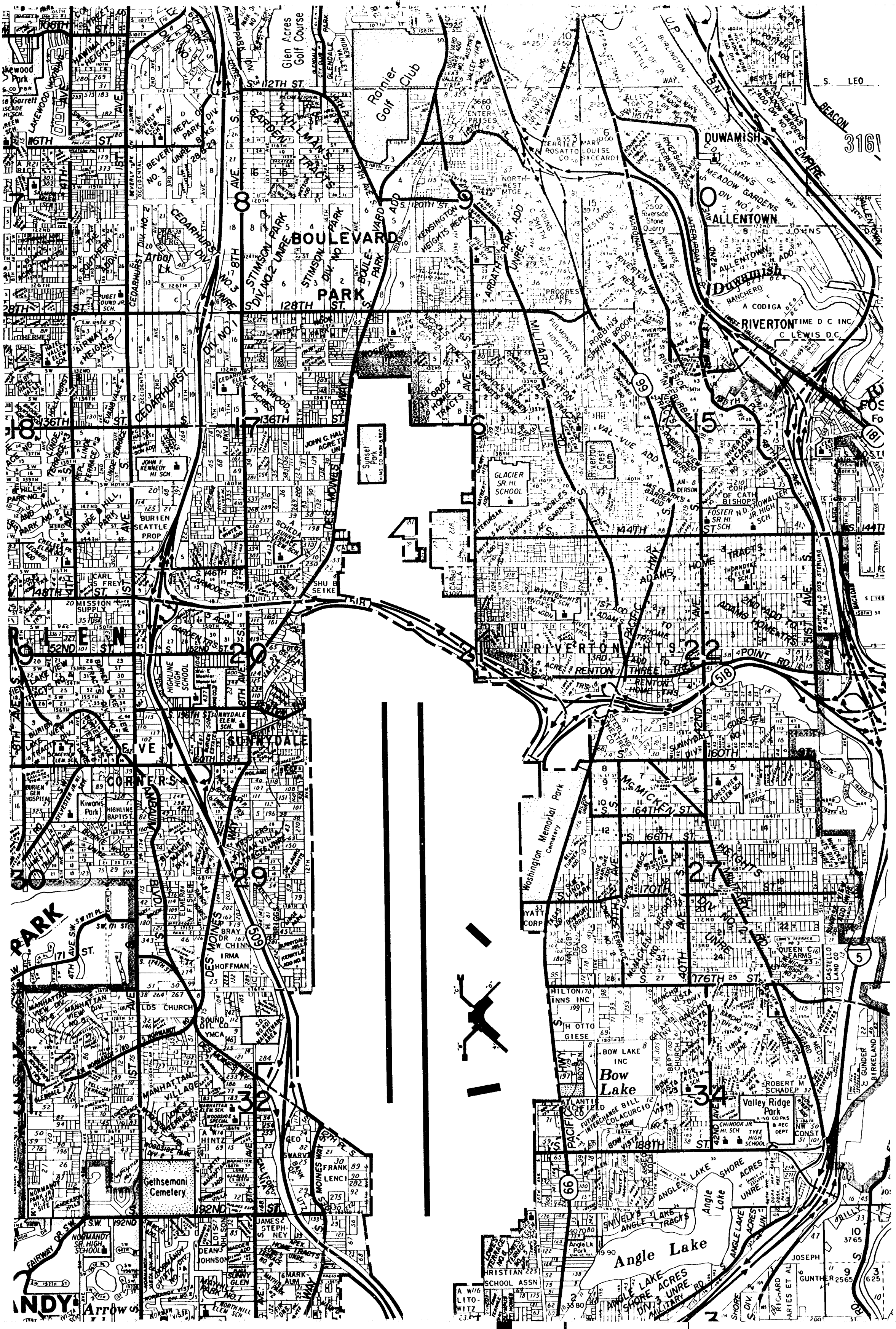
Seattle Atlas Page No. _____
Section No. _____

316

100

100

100



3161

181

1441

518

5

5

5

5

5



PARK

INDY Arrows

Glen Acres Golf Course
Rainier Golf Club

DUWAMISH

ALLENTOWN

ALLENTOWN

RIVERTON

RIVERTON

Washington Memorial Park

Bow Lake

Angle Lake

Angle Lake

Angle Lake

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

128TH ST

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

8TH AVE

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

12TH ST

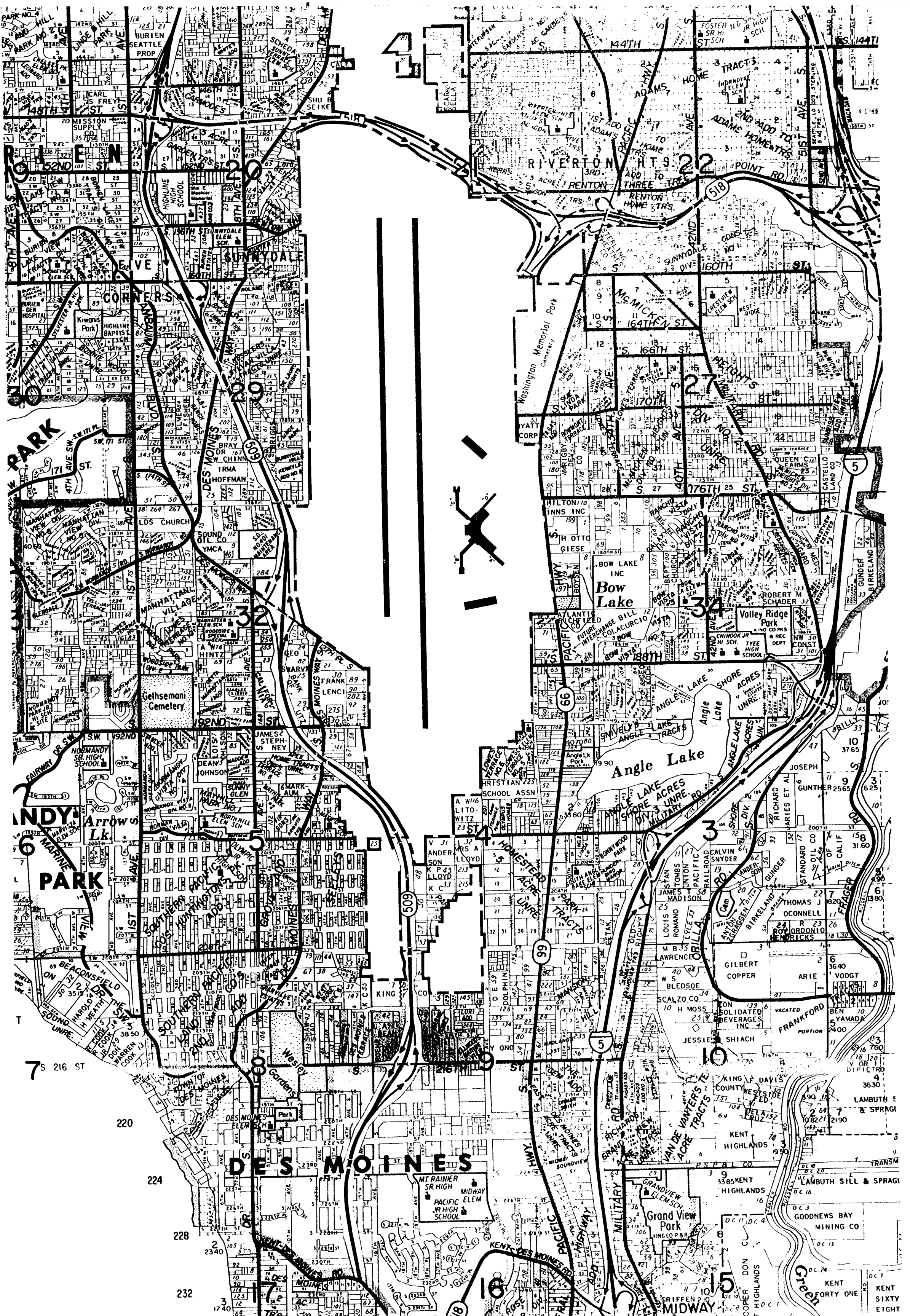
12TH ST

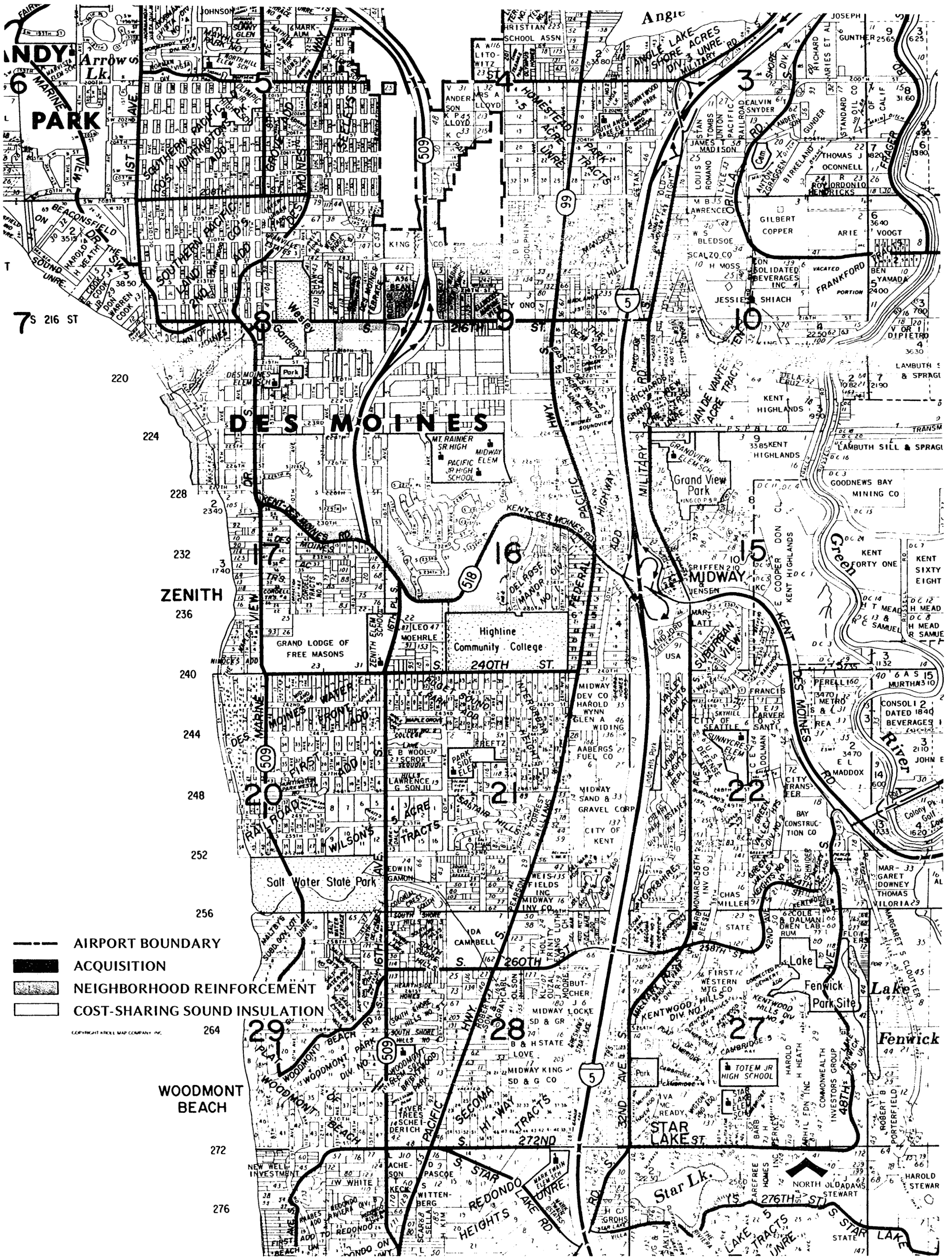
12TH ST




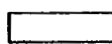
12TH ST

12TH ST

12TH ST





-  AIRPORT BOUNDARY
-  ACQUISITION
-  NEIGHBORHOOD REINFORCEMENT
-  COST-SHARING SOUND INSULATION

COPYRIGHT AECOM MAP COMPANY, INC.

SEA-TAC INTERNATIONAL AIRPORT
NOISE REMEDY UPDATE

PORT OF SEATTLE : SEATTLE, WASHINGTON

OVERALL PROGRAM BOUNDARIES

FEET 0 2 4,000

The single-family detached residences recommended for outright acquisition on the basis of these technical criteria are located on both the north and south sides of Sea-Tac International Airport. The eligible 524 residential properties would be purchased via fee simple acquisition by the Port of Seattle through the use of procedures well established as a result of previous undertakings of a similar nature. It is also anticipated that relocation benefits would be involved since the Port would apply for and receive federal funding assistance to the maximum extent possible.

Neighborhood Reinforcement

Areas designated as neighborhood reinforcement include noise sensitive land uses that are:

1. Exposed to aircraft noise levels of Ldn 75 and over in 1980 and Ldn 70 and over in the year 2000; and
2. Identified for the "purchase guarantee" noise remedy program by the 1975-1976 Sea-Tac Communities Plan.
3. Directly adjacent to designated acquisition areas.

Based on the foregoing technical criteria, as well as a careful determination of what should serve as logical boundary lines,* the neighborhood reinforcement areas depicted on the map include approximately 2,393 single-family residences, plus some 474 mobile homes. As implied by the term "neighborhood reinforcement," a variety of special programs designed to improve and enhance these existing residential areas are to be undertaken and carried out in future years, particularly by the Port of Seattle.

Cost-Sharing Insulation

The very large cost-sharing insulation program area shown on the accompanying map contains an estimated 6,090 single-family residences and about 900 mobile homes. This area was delineated in accordance with the following criteria:

1. Existing single-family structures located in areas with a noise exposure of Ldn 70 and above in 1980 or Ldn 65 and above in the year 2000.

*See Port of Seattle Planning and Research Department report entitled "Program Area Boundaries/Noise Remedy Update/Sea-Tac Airport Summary and Staff Recommendations" (July 1984).

2. Structures/uses identified under the various sound insulation noise remedy programs included as part of the Sea-Tac Communities Plan.

While the primary intent of the updated Program in cost-sharing insulation areas is to offer financial assistance to eligible property owners for purposes of soundproofing their homes, the Port of Seattle should also provide property advisory services in such areas. This is discussed further in the next subsection.

APPLICATION OF NOISE REMEDIES

The next step in the development of the updated Noise Remedy Program assigns appropriate noise mitigation measures to program application areas in accordance with the nature and degree of remedy or "treatment". The resultant combinations are as follows:

- o Acquisition Area
 - Fee Simple Acquisition (Measure M-1)
 - Property Advisory Service (Measure M-5)

- o Neighborhood Reinforcement Area
 - Sound Insulation (Measure M-2)
 - Transaction Assistance (Measure M-3)
 - Easement Acquisition (Measure M-4)
 - Property Advisory Service (Measure M-5)
 - Local Government Remedy Support (Measure M-6)

- o Cost-Sharing Insulation Area
 - Sound Insulation (Measure M-2)
 - Easement Acquisition (Measure M-4)
 - Property Advisory Service (Measure M-5)
 - Local Government Remedy Support (Measure M-6)

The remainder of this subsection contains the following information about each of these area/measure combines: anticipated effect of implementing the assigned measures; implementation steps and schedule; responsible agency (or agencies); estimated costs and source(s) of funding; and relationship to other plans, programs, policies, or procedures. As the Port proceeds with the Demonstration Program, there may be a need to refine or change estimated costs and/or details regarding the implementation steps that follow.

Acquisition Area - Measures M-1 and M-5

Anticipated effect of implementing the assigned measures:

Full implementation of the recommended number of fee simple acquisitions would permit 524 homeowners now exposed to high aircraft noise levels to receive fair market value (FMV) for their properties and to relocate (with assistance, if needed).

Implementation Steps and Schedule:

The latest acquisition program authorized by the Port Commission in early 1983 (150 parcels) is currently under way and is expected to be completed by the Fall of 1985. Thereafter, at an assumed rate of 10 units per month, the remaining 524 properties could be fully acquired and cleared by the end of 1990.

Responsible agencies:

The Port of Seattle through its Real Estate Department would acquire the designated properties and also furnish relocation advice and funding assistance. The FAA would be requested to provide appropriate matching fund grants (80% federal - 20% local) throughout the 1985-1990 acquisition period.

Estimated costs and sources of funding:

Based on an average net cost per unit of \$90,000 for each of the 524 single-family residences within the Acquisition Area, close to \$47 million in 1984 dollars would be required to fully accomplish this part of the updated Program.

If the FAA is able to provide 80% of the needed funds (\$37.6 million) at an average rate of about \$7.5 million per year, then the Port would need to furnish approximately \$9.4 million or an average of \$1.9 million per year. The latter amount can be derived from a combination of Airport resources other than revenue bonds, as described in separate Noise Remedy Program financial analysis material prepared by the Update Study Consultant, Peat, Marwick, Mitchell & Co.

Relationship to other plans, programs, policies, or procedures:

The noise mitigation measures to be applied in the Acquisition Area represent continuations of presently in-place noise remedy programs. However, the Port of Seattle's Capital Improvement Program and King County's High-line Communities Plan and Area Zoning documents will need to be modified to reflect the additional acquisitions recommended by this updated Noise Remedy Program.

Neighborhood Reinforcement Area - Measures M-2, M-3, M-4, M-5 and M-6

Anticipated effect of implementing the assigned measures:

As noted previously some 2,867 residential properties would be eligible for Sound Insulation (Measure M-2) and/or Transaction Assistance (Measure M-3) within the delineated Neighborhood Reinforcement Area. The owners of these properties would also have access to Measure M-5, Property Advisory Services, and in certain cases to the acquisition of aviation easements (Measure M-4). Local government assistance (M-6) would also be encouraged by the Port.

For purposes of developing a reasonable plan for implementing the updated Noise Remedy Program in neighborhood reinforcement areas, the following assumptions were made:

- o One-half (50%) of all eligible property owners would select and be satisfied with appropriate sound insulation if fully paid for by the Port of Seattle (with fund assistance from the FAA).
- o One out of every ten (10%) eligible property owners would decide to use none of the mitigation measures offered.
- o The remaining four in ten (40%) eligible owners would decide to apply for transaction assistance at some point between 1986 and the year 2000.

Based on the foregoing assumptions, some 90% of all eligible residential properties in designated neighborhood reinforcement areas would become more compatible with aircraft operations at the Sea-Tac International Airport over the next 15 years or so. This would include 1,434 sound-insulated dwellings and 1,147 sales transactions.

In addition to providing a means for some current residents who desire (or need) to sell their holdings and move away from aircraft noise exposure, the various noise mitigation measures available within neighborhood reinforcement areas should result in a substantial improvement in the interior noise environment for thousands of residents, stabilization of the local real estate market and related property values, and overall evidence of neighborhood improvement throughout the program application area.

Implementation steps and schedule:

Actual implementation of Measures M-2 and M-3 should not be initiated prior to completion and review of the special demonstration project outlined in a later subsection. This project, designed to provide detailed information about the suggested sound insulation, transaction assistance, and property advisory service procedures, is proposed for accomplishment during 1985 and early 1986. Fund allocations for insulation, sales assistance, and advisory service mitigation measures could then be made for 1986 and each succeeding year through 2000, based on results of the demonstration project as well as subsequent experience with such measures.

Responsible agencies:

Overall responsibility for the project, would be assigned to the Real Estate Department.

The Engineering Department would direct technical support in carrying out the noise remedy programs, especially in noise insulation of structures. An acoustical consultant would be hired to provide technical assistance.

Fund assistance (and technical support as needed) would be requested of the FAA by the Port's Aviation Department on an 80-20 match basis for each year that such federal aid is available. Hopefully, the U.S. Congress will see fit to continue the current Airport Improvement Program (AIP) when the present authorization expires in 1987.

As the local general governmental units for the Airport Environs, both King County and affected cities would be requested to aid the Port, the FAA, and affected property owners in carrying out other neighborhood improvement/reinforcement activities, as appropriate.

Estimated costs and sources of funding:

It is estimated that the cost of fully sound insulating a single-family dwelling within the neighborhood reinforcement noise exposure area would entail an average cost per unit of some \$19,000. This figure includes \$850 for a noise audit by an acoustical consultant; \$15,150 for construction and installation by a building contractor; and approximately \$3,000 for Port Engineering Department supervision, inspection, and administration. The comparable figure for a mobile home on an individual lot is \$14,000.

Therefore, if constant 1984 dollars are used, the total costs involved in treating 1,197 single-family units (\$22.743 million) plus 237 mobile homes (\$3,318,000) amounts to \$26,061,000, or essentially \$26 million over the 1986-2000 program period.

Similar estimates for the transaction assistance noise remedy yield a projected need for nearly \$33 million. This latter figure represents a \$30,000 average total assistance outlay per single-family dwelling times 957 units (\$28.71 million) plus \$22,400 per mobile home times 190 units (\$4,256,000) for a total of \$32,966,000, or \$33 million.

In addition, the recommended implementation plan calls for up to \$200,000 per year for the acquisition of aviation easements and another \$100,000 annually for the provision of property advisory services. Both of these mitigation measures would also be programmed to start in 1986 and carry through the year 2000.

As with the outright acquisition area, the FAA would be requested to assist on an 80-20 match basis for the sound insulation and transaction assistance noise mitigation measures.

Relationship to other plans, programs, policies, or procedures:

The four noise mitigation measures recommended for application within the neighborhood reinforcement area represent new activities for the Port of Seattle and for the Northwest Mountain Region of FAA. As such the costs associated with these measures must mesh with the Sea-Tac Airport Improvement Plan and budget as well as the Port's overall Capital Improvement Program.

Successful accomplishment of the proposed sales assistance and sound insulation noise programs may also be expected to favorably affect the local tax base over time. This would bolster, among other things, school and special district (fire, water, etc.) budgets, local land use plans and land use control mechanisms, and the provision of needed public services and facilities.

Cost-Sharing Insulation Area - Measures M-2, M-4, M-5 and M-6

Anticipated effect of implementing the assigned measures:

Approximately 7,000 single-family residential units are encompassed by the Cost-Sharing Insulation area shown on the accompanying map. This includes 910 mobile homes scattered throughout the area.

It is possible, of course, that each and every owner of these 7,000 separate dwellings may decide to install sound insulation prior to the end of 2000 if Measure M-2 (Sound Insulation) is made available by the Port on a shared-cost basis. However, it has been assumed that no more than 50% of all eligible residences (3,500 units) would actually be treated by or before the year 2001 because:

- (a) Numerous owners may well decide that noise exposure relative to their property is not enough of a problem to justify paying for one-half of the insulation considered necessary to reduce interior noise levels.
- (b) Some structures will prove to be incapable of being properly improved due to old age, deterioration, or other defects;
and
- (c) A certain number of homes will already have been satisfactorily soundproofed by the owner or original builder.

For these and other reasons, Measure M-4 (Easement Acquisition) and Measure M-5 (Property Advisory Services) would also be offered to qualified property owners throughout this program application area. Measure M-6, Local Government Remedy Support, will also be encouraged in the Cost-Sharing Insulation Area but with less priority than in the designated Neighborhood Reinforcement area.

Some 3,500 single-family homes would become more livable if the assumed 50% rate of owner participation is achieved with respect to the installation of sound insulation on a shared-cost basis. Also, an indeterminate number of additional property owners could also receive monetary compensation in return for selling avigation easements to the Port. All in all, as many as 4,000 homeowners could be benefited in some way by implementation of the assigned mitigation measures in this part of the Airport Environs.

Implementation steps and schedule:

Implementation of the noise remedies proposed for the Cost-Sharing Insulation area should begin on a modest basis in 1986 and continue throughout all of the suggested 15-year implementation period. Again, as with the Neighborhood Reinforcement area, completion of the recommended demonstration project should be accomplished prior to the initiation of any substantial program activity.

Responsible agencies:

The Port's Real Estate Department would have the prime responsibility for carrying out a cost-sharing insulation program, with the Engineering Department handling contracts and staff responsible for insulation plans and specifications. Appropriate fund assistance from the FAA would again be sought by the Aviation Department.

Estimated costs and sources of funding:

The average cost of constructing and installing sound insulation for a single-family residence exposed to Cost-Sharing Insulation area noise levels is estimated to be \$8,450. This compares to a \$5,700 estimate for a mobile home on a lot that is treated as real property by the King County Tax Assessor.

Total average program costs for the single-family and mobile home dwellings amount to \$12,300 and \$9,550, respectively. Each of these figures includes \$850 for a noise audit and \$3,000 for Port administrative expenses.

Based on these per unit averages, the 3,045 single-family units to be insulated (50% x 6,090) would require some \$37,453,500 over the 1986-2000 period. Nearly \$42 million is involved when 455 mobile homes at \$9,550 apiece (\$4,345,250) are added to this latter figure.

If participating property owners are required to pay 50% of the construction and installation costs only, then these owners would account for \$12,865,125 (3,045 x .5 x \$8,450) plus \$1,296,750 (455 x .5 x \$5,700) or about \$14 million of the \$42 million total. The Port with FAA assistance would thus need to allocate (over time) some \$28 million in 1984 dollars for Measure M-2 on a cost-sharing basis.

Relationship to other plans, programs, policies, or procedures:

The Port's Capital Improvement Program would need to be modified in order to accommodate the noise mitigation measures assigned to the Cost-Sharing Insulation area. Also, current procedures that indicate how best to use Airport Improvement Program (AIP) entitlement and discretionary funds may also require modification if the updated Noise Remedy Program is to be implemented as set forth in this document.

Section 4
DEMONSTRATION PROJECT

As a forerunner to the establishment of expensive sound insulation and transaction assistance noise remedy programs, the Port of Seattle plans to carry out a demonstration project with financial assistance from the Federal Aviation Administration (FAA). The need for such a project, a general description of the proposed effort, a suggested time schedule, and estimated costs as well as financing are discussed in this section.

NEED FOR SUCH A PROJECT

A recent review of experience in other parts of the United States (St. Louis, Reno, Tucson) with the concept of purchase assurance pointed up the fact that no airport sponsor has yet established an ongoing program of this type. Although the Port of Seattle created the idea of purchase assurance (guarantee) in the 1975-1976 Sea-Tac Communities Plan, this form of noise remedy has not yet been implemented by the Port due to the allocation of all available funds since that time for higher-priority outright acquisition programs. The other airport operators mentioned above have also adopted but not yet initiated a purchase assurance program for essentially the same reason.

As a consequence, the Port of Seattle once again has an opportunity to lead the nation via development of a workable transaction assistance/purchase assurance approach to the problem of airport-oriented noise. Because such an approach is far more complex than outright acquisition, however, a demonstration project is needed to:

- a. Test the validity of recommended program priorities, assumptions, criteria, and procedures; and
- b. Ensure that Port dollars (and federal funds, if used) can be effectively budgeted and spent on behalf of designated neighborhood reinforcement program areas in future years.

In a similar vein, there is considerable interest within Airport Environs communities for solid information about the pros and cons of sound insulation as a method of improving interior noise levels, particularly for single-family residential uses. Inclusion of a sound insulation component in the proposed project should not only result in obtaining the desired information, but also pinpoint what should and should not be done to establish a cost-effective sound insulation program of improvements.

Finally, a demonstration project of the nature contemplated could permit possible property advisory services and techniques to be tested prior to full implementation of this form of noise mitigation. Again, both time and dollars should be saved in the future due to the experience gained from such a project.

GENERAL DESCRIPTION OF THE RECOMMENDED PROJECT

Sound Insulation Component

Not more than sixteen (16) owner-occupied homes should be included in the sound insulation component of the demonstration project. The structures selected for testing should be representative of the different single-family residential construction types (brick veneer, wood-stucco, aluminum siding, etc.) to be found in the Airport locale.

To the extent possible, the homes of four (4) volunteer property owners in each of the four major quadrants of the Sea-Tac Airport Environs (north, east, south, and west) should be chosen for appropriate sound insulation. All of the properties involved should be located in those parts of the Airport Environs designated (in whole or in part) for Neighborhood Reinforcement noise remedies by the Port of Seattle. Highest priority should be given to those eligible, long term volunteer owners who sincerely desire to remain in their present homes and neighborhoods, provided that interior noise levels can be effectively reduced.

This part of the demonstration project should essentially be carried out by a qualified acoustical consultant under contract to the Port of Seattle. Services to be provided by the consultant could include the following, generally in the order listed:

- o Identification through field surveys, as well as interviews with local contractors and building inspectors, of the typical single-family dwelling construction types that prevail within the Airport Environs.
- o Assistance in selection of the 16 homes to be sound insulated during the project by (a) reviewing applications received by the Port from eligible volunteer owner-occupants, and (b) screening out candidate structures that appear from an exterior examination to be incapable of being insulated to achieve desired interior noise exposure levels.
- o Performance of detailed "noise audits" on the agreed-upon test homes. Involving both interior and exterior investigations, these noise audits would provide the information needed to prepare specifications for the improvements recommended in each case. Documentation of interior and exterior noise levels at each demonstration home would be made and available prior to any construction activity.
- o Preparation of plans and specifications, receipt of bids and analysis for construction and installation of recommended improvements.
- o Assistance in selecting and contracting one or more qualified local building firms to perform the specified sound insulation work, with concurrence by the Port of Seattle.
- o Documentation of interior and exterior noise levels at each demonstration home after all improvements have been completed.
- o Preparation of a report that describes the process and results of the demonstration project's sound insulation component.

The Port of Seattle, with FAA assistance if available would pay for all costs associated with the sound insulation component. In return for improvement of their homes, participating owner-occupants would provide the Port with an aviation easement. Each owner might be provided with a voucher with other noise remedies that he or she may wish to use in the future, following establishment of a formal program based on results generated by the demonstration project.

Transaction Assistance Component

A maximum of ten (10) volunteer property owners should be selected to take part in the transaction assistance/purchase assurance component of the project. As with the sound insulation effort, each major quadrant of the Airport Environs should be represented, and all properties should be designated for neighborhood reinforcement by the Port of Seattle, with concurrence by King County.

With regard to participation in the transaction assistance test, highest priority should be given to eligible owners who are (a) truly desirous of moving away from the Airport, and (b) have lived in their present home for at least the past twenty-five (25) years, or (c) have a bona fide situation that could be eased through sale of their property and relocation elsewhere. Such hardship might involve an ill or elderly resident who is particularly bothered by noise, a job change for the owner requiring a move to a location outside of the Seattle Metropolitan Region, or other acceptable reason of an "emergency" nature.

For purposes of this effort, the term "hardship" should not be interpreted to include situations where a given owner has simply been unable to sell his or her home for a price acceptable to that owner, even if the property in question has been on the market for a long period of time.

The transaction assistance/purchase assurance component of the demonstration project should be administered by the Port's Real Estate Department, aided by Planning and Research personnel as well as outside realtors, property appraisers, and others, as appropriate.

Property Advisory Service Component

The provision of special advisory services for the use and benefit of homeowner participants and the general public should also be included as another component of the suggested demonstration project. These services could involve such activities or products as:

- o Neighborhood meeting presentations and/or news media releases that describe the demonstration project, how the sound insulation and transaction assistance processes would work, and the participant selection criteria. Follow-up presentations could also be made to describe the progress and results of the project.
- o Information packets designed to provide project participants with what they may need to know about the sound insulation of residential structures, transaction (sales) assistance, marketing and financial matters, or other aspects of the project.
- o Individual counseling of participants who have questions about procedures, options available to them, real estate market conditions, noise exposure characteristics, or any other subject that is pertinent to their role in the demonstration.
- o Briefing sessions (supplemented by appropriate printed materials) for real estate agents, property appraisers, sound insulation contractors, and other technicians or agency representatives that are taking part in the demonstration project.
- o Follow-up opinion surveys to solicit pro and con views from project participants and others as to (a) the project process and outcomes, and (b) what features should or should not be incorporated in the larger insulation, transaction assistance, and advisory service programs to be established after the demonstration has been completed.

It is anticipated that most of the Port's administrative and operating departments would take some part in the provision of advisory services as outlined. However, the Real Estate, Planning and Research, Aviation, Engineering, and Public Information departments would no doubt be more involved than other units. Some outside specialists may also be needed, such as opinion survey firms.

Project Time Schedule

The sound insulation/transaction assistance/property advisory service demonstration project should be initiated in early 1985 and be accomplished within about a 18-month time period. This would allow for a one-year demonstration followed by a 3-month review, assessment, and documentation of project results.

Due to the national as well as local significance of the proposed demonstration project, the Port of Seattle should seek FAA participation and fund assistance in carrying out all or part of this important undertaking. At a minimum the Port should establish a close working relationship with the FAA regarding eligibility criteria applicable to a permanent program.

Estimated Costs and Financing of the Project

Pending development of and agreement on a detailed work program (or study design), the dollar amount needed to accomplish the recommended demonstration project has been estimated on a preliminary basis. If any one element of this Demonstration Project is delayed, then other elements should proceed if at all possible.

<u>Component of Project</u>	<u>Per Unit Average</u>	<u>Number of Units</u>	<u>Totals</u>
<u>Sound Insulation</u>			
Acoustical Consultant/Contractor	\$10,000	16	\$160,000
Construction/Installation	\$15,150	16	242,000
Port Administration	2,000	16	32,000
Subtotal	\$27,150		\$434,400
<u>Transaction Assistance</u>			
Property Appraisal	\$ 200	10	\$ 2,000
Other Appraisal or Real Estate Analysis			35,000
Noise Audit (Acoustical Consultant)	1,200	10	12,000
Real Estate Fee (one-half)	2,625	10	26,250
Sound Insulation			
Acoustical Consultant	8,800	10	88,000
Construction/Installation	15,150	10	151,500
Mortgage Subsidy	3,325	10	33,250
Port Administration/Processing	3,000	10	30,000
Subtotal	\$34,300		\$378,000
<u>Program Additions</u>			\$55,000
<u>Property Advisory Service</u>			
Consultants			\$ 41,000
Printing, Mailing, Miscellaneous			40,000
Port Personnel/Advisors	2,000	26	52,000
Subtotal			\$133,000
GRAND TOTAL			\$1,000,000

Source: "Special White Paper on the Concept of Purchase Assurance as an Airport Noise Remedy," Peat Marwick, May 1984.

Section 5
PROGRAM SUMMARY

Designed for use as a quick reference, a condensed tabular summary of the recommended Noise Remedy Program that has been detailed and recommended in this document is provided on the next page. The summary focuses on the responsibilities, estimated costs, and implementation schedules that are associated with the nine noise abatement and five noise mitigation measures included in the overall remedy program.

Tabular Summary

SEA-TAC INTERNATIONAL AIRPORT NOISE REMEDY PROGRAM

<u>NOISE REMEDY</u>	<u>RESPONSIBILITY</u>	<u>ESTIMATED COST</u> ^A	<u>YEAR(S) OF IMPLEMENTATION</u>
<u>Noise Abatement Remedies:</u>			
1. Explore limited rescheduling of nighttime flights.	POS Aviation Department	-- ^B	1984-1985
2. Eliminate training activity.	POS Aviation Department/FAA	-- ^B	1984-1985
3. Use VOR radials to curb aircraft drifting from noise abatement track.	POS Aviation Department/FAA	-- ^B	Implementation under way
4. Expand noise monitoring system.	POS Engineering Department	\$92,000 + \$600 annual maintenance cost	Implementation under way
5. Establish noise abatement office.	POS Aviation Department	\$20,000 + \$150,000 annual operating expenses	1984-1985
6. Establish noise abatement committee.	POS Aviation Department	-- ^B	Implementation under way
7. Use siting of on-Airport facilities as noise buffer.	POS Aviation ^C /Planning & Research/Engineering Departments	-- ^B	1984
8. Restrict taxiing of aircraft to/from maintenance areas during nighttime hours.	POS Aviation Department	-- ^B	1984-1985
9. Support compliance with FAR Part 36.	POS Aviation Department	-- ^B	Implementation under way
<u>Noise Mitigation Remedies:</u>			
1. Outright acquisition.	POS Real Estate Department	\$47 million	1986-1991
2. Sound insulation.	POS Real Estate ^C /Engineering/Planning & Research Departments	\$26 million (100% POS/FAA) \$28 million (50% POS/FAA)	1986-2001
3. Transaction assistance.	POS Real Estate ^C /Planning & Research Departments	\$33 million	1986-2001
4. Easement acquisition.	POS Real Estate ^C /Planning & Research Departments	\$3 million	1986-2001
5. Property advisory service.	POS Real Estate ^C /Planning & Research Departments	\$100,000 per year	1986-2001
6. Pilot Demonstration Program	POS Real Estate Department	\$1 million annual operating expenses	1985-1986

^A 1984 dollars (Port of Seattle with FAA assistance, as appropriate)

^B Incidental to normal operating expenses

^C Primary responsibility

Source: Peat Marwick, September 1984

4676p - 01/07/85