Seattle-Tacoma International Airport

FAR Part 150 Noise Compatibility Program: 1993 Amendments Port of Seattle

As approved by the Federal Aviation Administration on May 18, 1994

Seattle-Tacoma International Airport
FAR Part 150 Noise Compatibility Program: 1993 Amendments

Table of Contents

This study was sponsored by the Port of Seattle with funding assistance from the Federal Aviation Administration.

U.S. Department
of Transportation

**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana
Oregon, Utah, Washington
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055-4056

MAY 25 1994

Mr. R. Burr Stewart
Director, Aviation Planning
Seattle-Tacoma International Airport
Port of Seattle
P.O. Box 68727
Seattle, WA 98727

Dear Mr. Stewart:

We have evaluated the Noise Compatibility Program for Seattle-Tacoma International Airport contained in the Seattle-Tacoma International Airport Noise Compatibility Study submitted to my office under the provisions of Section 104(a) of the Aviation Safety and Noise Abatement Act of 1979.

The recommended Noise Compatibility Program proposed by the Port of Seattle is identified by action element number on pages 7 through 31 of the above program. I am pleased to inform you the Assistant Administrator for Airports has approved all proposed action elements in the Noise Compatibility Program. Our specific action for each noise compatibility program element is set forth in the enclosed Record of Approval. The effective date of this approval is May 18, 1994.

Each airport Noise Compatibility Program developed in accordance with FAR Part 150 is a local program, not a Federal program. We do not substitute our judgment for that of the airport proprietor with respect to which measures should be recommended for action. Our approval or disapproval of FAR Part 150 program recommendations is measured according to the standards expressed in Part 150 and the Aviation Safety and Noise Abatement Act of 1979, and is limited to the following determinations:

a. The Noise Compatibility Program was developed in accordance with the provisions and procedures of FAR Part 150;

b. Program measures are reasonably consistent with achieving the goals of reducing existing noncompatible land uses around the airport and preventing the introduction of additional noncompatible land uses;

c. Program measures would not create an undue burden on interstate or foreign commerce, unjustly discriminate against types or classes of aeronautical uses, violate the terms of airport grant agreements, or intrude into areas preempted by the Federal Government;

d. Program measures relating to the use of flight procedures can be implemented within the period covered by the program without derogating safety, adversely affecting the efficient use and management of the Navigable Airspace and Air Traffic Control Systems, or adversely affecting other powers and responsibilities of the Administrator prescribed by law.

Specific limitations with respect to our approval of an airport Noise Compatibility Program are delineated in FAR Part 150, Section 150.5. Approval is not a determination concerning the acceptability of land uses under Federal, state, or local law. Approval does not by itself constitute an FAA implementing action. A request for Federal action or approval to implement specific noise compatibility measures may be required, and an FAA decision on the request may require an environmental assessment of the proposed action. Approval does not constitute a commitment by the FAA to financially assist in the implementation of the program, nor a determination that all measures covered by the program are eligible for grant-in-aid funding from the FAA. Where Federal funding is sought, requests for project grants must be submitted to the FAA Airports District Office in Seattle, Washington.

Completion and approval of your Noise Compatibility Program is a major accomplishment, one which the Port should be proud of. The program is a blueprint presenting the means for the Port to achieve its goal of reducing or eliminating noncompatible land uses around the airport. As with all plans, we encourage the Port to periodically review and update the program as may be necessary to reflect changes in the airport or its environment.

Again, congratulations on your approved Part 150 Noise Compatibility Program! We look forward to working with you on implementation of the program.

Sincerely,

David A. Field
Acting Manager, Airports Division

Enclosure

RECORD OF APPROVAL

SEATTLE-TACOMA INTERNATIONAL AIRPORT
FAR PART 150 NOISE COMPATIBILITY PROGRAM
SEATTLE, WASHINGTON

INTRODUCTION

The Port of Seattle's original Seattle-Tacoma International (SEATAC) Airport FAR Part 150 Noise Compatibility Program (NCP) which included the Noise Exposure Maps (NEM's) was adopted by the Port of Seattle Commission in 1985 as the Noise Remedy Program. The NCP was approved by the FAA later that year. The maps have since been updated and accepted by the FAA in April 1993. The number of individuals living within the 65 DNL contour will likely shrink by approximately 34.3% and the number of acres by 32.3% by 1996. This decrease in noise impact is related to the Mediation Agreement, specifically the Noise Budget and Nighttime Limitations Program (accelerated phase-out of stage 2 aircraft).

The purpose of this update is to bring SEATAC's 1985 Part 150 up to date and include program amendments developed through the Noise Mediation Project. Some of the mediation revisions were implemented with the understanding that they be included in this Part 150 update. These measures include the change from the Cost Share to the Standard Insulation Program (M-2a) and the addition of the Special Purchase Option (M-3a) as an added feature of Transaction Assistance. With the exception of these proposed amendments, the 1985 NCP program and boundaries remain the same.

The development of these amendments involved the efforts of many individuals and entities. A Technical Review Committee was formed to provide input for the maps and NCP. This included area citizens, community planning representatives, Air Traffic and Airports District Office from the FAA and Port of Seattle staff. Public review included public meetings and individual planning staff meetings. Finally, an Open House and a Public Hearing were held on May 12, 1993. Based on the work of these groups as evidenced by the

record incorporated into the NCP, it is clear that the consultation requirements of 150.21B have been met.

The approval actions listed herein include all those that the airport sponsor recommends to be taken by the FAA. It should be noted that the approvals indicate only that the actions would, if implemented, be consistent with the purposes of FAR Part 150. These approvals do not constitute decisions to implement the actions. Later decisions concerning possible implementation of these actions may be subject to applicable environmental or other procedures or requirements. These approvals do not constitute a commitment to provide Federal financial assistance.

The recommendations below summarize, as closely as possible, the airport operator's recommendation in the NCP and are cross-referenced to the program. The statements contained herein do not represent the opinions or decisions of the FAA. After FAA review, the FAA will at that time, indicate approval, disapproval or other determinations.

PROGRAM ELEMENTS

A. Amendments to the Sound Insulation Program:

1. The Port of Seattle is proposing that all non-sound insulated single family homes within the Noise Remedy Program boundaries are incompatible land uses and eligible for sound insulation with conditions. The conditions include that the homes be insulated with a design goal of at least a 5 dB reduction and an interior noise level of not greater than DNL 45 dB. Also, homes constructed after September 1987 will not be insulated. This is because the City of Des Moines and King County developed sound insulation building codes in response to approval of the 1985 NCP by the FAA.

2. Avigation easements are to be granted to the Port of Seattle when insulation treatment is provided under the NCP program as required by State law.

3. The priority system for the program gives preference to the most noise impacted homes.

4. Purchasing an avigation easement as a mitigation measure will only be used if insulation is not feasible.

Measure M-2a, Standard Insulation: Eliminate the cost share program which offered customized insulation treatment at 50% of the cost. Note: a standardized design approach for sound insulation was devloped based on previous experience and verified by field audits. The amendment proposes that this program be changed to an insulation program which provides that no financial participation is required by the home owner.

FAA Determination: Approved.

Measure M-2b, Public Buildings: The Port of Seattle proposes a pilot project to sound insulate four public use buildings. The project will be based on the Building Committee recommendations and upon approval by the FAA of the eligibility of participating structures and a determination that the plans will achieve the goals outlined in the Part 150 Land Use Compatibility Table (Table 1). The pilot project will determine the feasibility, procedural requirements, and costs for sound insulation of public use structures.

FAA Determination: Approved.

Measure M-2c, Multi-Family Developments: The Port of Seattle will conduct a pilot program at one multi-family development based on the criteria outlined above under M-2. Upon approval by the FAA of the proposed unit, insulation will commence.

FAA Determination: Approved.

Measure M-2d, Mobile Homes: In order to reduce non-compatible mobile homes in the noise impacted areas, the Port of Seattle will assist mobile home park owners in converting their land to compatible land uses by providing

funds to move the mobile homes outside the program boundaries with the following conditions: a) the property is converted to a compatible land use, b) the responsible jurisdiction requires the owner to develop a relocation plan for the residents, c) an avigation easement will be granted to the Port of Seattle, and d) the responsible land use jurisdiction agrees to restrict development to compatible land uses.

FAA Determination: Approved.

B. <u>Amendments to the Transaction Assistance (TA) Program</u>

<u>Measure M-3a, Special Purchase Option</u>:

The Transaction Assistance (TA) program is modified to include a new option called the Special Purchase Option (SPO). Residents who have owned their homes more than 5 years and are adjacent to Port of Seattle property have the option to sell their property to the Port of Seattle based on fair market value. The Port of Seattle will then insulate the residence and offer it for resale. This SPO can only occur once per property.

FAA Determination: Approved.

<u>Measure M-3b, Insulation Requirement</u>: Home owners within the Neighborhood Reinforcement area (highly impacted area) are eligible for Transaction Assistance (TA) (assistance in selling their homes). This measure requires that to be eligible for transaction assistance, a homeowner must first have the house soundproofed. If, after soundproofing, the homeowner still wishes to leave the area, they will be eligible for this TA program.

FAA Determination: Approved. Note: This measure expands an existing program which requires that to be eligible for transaction assistance, a homeowner must first have their house soundproofed. If, after soundproofing, the homeowner still wishes to leave the area, they will be eligible for the TA program.

C. **Amendment to the Noise Monitoring System**

Measure M-4a, Evaluation of Noise Monitoring System: The Port of Seattle will evaluate the 1979 monitoring system and determine if a replacement is needed.

FAA Determination: Approved.

D. **New Measures**

Measure M-7, Funding for Land use /Noise Compatibility planning: The measure encourages public agencies having planning authority within the DNL 65 contour to develop compatible land use and noise compatibility planning beyond the airport boundary but within the 65 DNL noise contour, by providing funds for such planning projects. These planning efforts are to be consistent with the principles and guidelines of FAR Part 150.

FAA Determination: Approved. This approval does not constitute a commitment to provide Federal financial assistance.

Measure M-8 was not considered in the final program.

Measure M-9, Community Planners Forum: The Port will initiate formation of a committee of planners from affected land use jurisdictions, or other invited jurisdictions with interest, to meet on a regular basis to share information pertaining to comprehensive planning, community and airport planning, land use issues and noise mitigation efforts.

FAA Determination: Approved.

Measure M-10, Operations Review and NEM Updates: The Port of Seattle commits to review its operations forecast each year, variances to the Nighttime Limitations Program, and the ANEL (airport noise exposure level as defined in the SEATAC noise budget). The Port will develop revised noise contour maps whenever there is a 15% change in operations or every two years, whichever comes first. The review will help determine if the Noise Exposure Maps need to be updated per FAR Part 150. The Port will produce an annual report containing the results of the annual review.

FAA Determination: Approved.

FEDERAL AVIATION ADMINISTRATION

RECORD OF APPROVAL

FAR PART 150 NOISE COMPATIBILITY

PROGRAM

Seattle-Tacoma International Airport

Seattle, Washington

CONCUR NONCONCUR

Dale E. McDonald
Assistant Administrator for
Policy, Planning, and
International Aviation, API-1

5/10/94
Date

Daphne A. Hills
for Chief Counsel, AGC-1

Date 5/18/94

APPROVED DISAPPROVED

Robert W. Yatzeck
for Assistant Administrator
for Airports, ARP-1

5/18/94
Date

✓

RESOLUTION NO. 3144

A RESOLUTION of the Port Commission of the Port of Seattle amending Seattle-Tacoma International Airport's Federal Aviation Regulation (FAR) Part 150 Noise Remedy Program as adopted by Port Commission Resolution No. 2943, as Amended.

WHEREAS, in January, 1985, the Port of Seattle adopted Sea-Tac's Noise Remedy Program consisting of noise mitigation and abatement measures pursuant to Federal Aviation Regulation (FAR) Part 150: and

WHEREAS, FAA approval is required for the use of federal funds in implementing the Noise Remedy Program, and

WHEREAS, In 1985, the Federal Aviation Administration (FAA) approved Sea-Tac International Airport Part 150: Airport Noise Compatibility Program referred to in Resolution No. 2943, as Amended, as the Noise Remedy Program, and:

WHEREAS, The Port of Seattle has sought and been granted federal funds in the amount of approximately $84 million since the 1985 federal approval of the Noise Remedy Program to fund program measures; and

WHEREAS, The Port intends to continue seeking federal funding for implementation of noise reduction programs, and

WHEREAS, Improvements to Sea-Tac's Noise Remedy Program have been made or recommended since 1985 through various means, including the Noise Mediation Project, staff adjustments to implementation procedures, advice from citizen committees and Port Commission directives to accelerate and expand the Noise Remedy Program; and

WHEREAS, The Port wishes to maintain its federal eligibility for funding Sea-Tac's Noise Remedy Program by amending it to conform to improvements made since the 1985 federal approval; and

WHEREAS, The Port of Seattle has sought to fulfill all federal requirements amending Sea-Tac's Noise Remedy Program; and

WHEREAS, Pursuant to the State Environmental Policy Act, the Port has issued a Determination of Nonsignificance for adoption of the amendments.

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

SECTION 1: 1993 Amendments to Sea-Tac Airport's FAR Part 150 Noise Remedy Program.

(a) The 1993 amendments to Seattle-Tacoma International Airport's FAR Part 150 Noise Remedy Program adopted in 1985 by Port Commission Resolution No. 2943, as Amended, are found in Attachment "A" to this Resolution.

(b) Port Staff is directed to submit the amendments to the FAA for review and approval, to work in cooperation with the FAA to maintain federal funding eligibility for Sea-Tac's Noise Remedy Program and to expeditiously implement measures contained in Attachment "A," subject to all required budgetary approvals.

SECTION 2: Pilot Projects. As outlined in Attachment "A" hereto, the Port will conduct pilot projects for noise insulation of public buildings and a multi-family building or development. Upon completion of the pilot projects, Port staff is directed to report to the Commission and provide a recommendation on the implementation of the pilot projects, including a time line and estimated costs. Port staff is further directed to work with the FAA and appropriate parties to ensure that implementation of an insulation program for these structures can proceed as quickly as possible following completion of the pilot projects and Port Commission authorization.

SECTION 3: Funding Policy. Unless otherwise stated in Attachment "A," the Port of Seattle intends to request federal funding for Sea-Tac's Noise Remedy amendments and use some funds obtained through Passenger Facilities Charges. The Port intends to seek a long term Letter of Intent from the FAA that would establish the FAA's post-1995 funding commitment to these programs. The Port will continue to identify available Port funds necessary to complete the Noise Remedy Program. In the event Federal funds or passenger facility charges are not available, the Port will need to reassess funding sources and timelines necessary to complete all program elements as scheduled.

Section 4: The authority of the Executive Director and Managing Director, Aviation Division shall remain as defined in Resolution No. 2943, as Amended.

Section 5: The Executive Director's authority as set forth herein shall be undertaken subject to budgetary amounts and shall not be limited by Resolution No. 3023, Paragraphs IV, VI, VIII and IX.

Section 6: Implementation. Implementation of amendments adopted by this Resolution is subject to FAA approval.

ADOPTED by the Port Commission of the Port of Seattle this 13th day of July, and duly authenticated in open session by the signatures of the Commissioners voting in favor thereof and the Seal of the Commission duly affixed.

GARY GRANT

PAUL SCHELL

PATRICIA DAVIS

PAIGE MILLER

PORT COMMISSION

Seattle-Tacoma International Airport
FAR Part 150 Noise Compatibility Program: 1993 Amendments

Preface

Introduction

Through Federal Aviation Regulation (FAR) Part 150, the Federal Aviation Administration (FAA) has provided airports throughout the United States with a significant planning tool for addressing aircraft noise impacts. Part 150 establishes a voluntary program which sets minimum planning standards for airport noise compatibility and establishes a general approach to conducting studies and developing noise mitigation programs. With Federal approval of its program, an airport qualifies for federal funds to implement its noise management programs.

The Part 150 process includes two sections. First is the development of noise exposure maps. These maps illustrate the noise contours and related impacts for the existing year and five years into the future. The second part of the program is development of an airport noise compatibility program which seeks to mitigate the noise impacts and reduce the number of people subjected to aircraft noise.

The Port of Seattle's original SEA-TAC FAR Part 150 Noise Compatibility Program (NCP) was adopted by the Port of Seattle Commission in 1985 as the Noise Remedy Program in Resolution No. 2943, as amended. The Federal Aviation Administration approved the program later that year. Since then, the airport's noise mitigation measures have been designed in detail and successfully implemented. Over the past few years, a number of factors have influenced the pace, administration and substance of some of the elements of the program.

Purpose

The purpose of this update is to bring SEA-TAC's 1985 Part 150 NCP up-to-date with changes that have been made to the program, including program amendments developed through the Noise Mediation Project. Some new program elements that resulted from the update's public consultation process are also included. Parties responsible for implementing the measures are identified, along with the actions that the Port will undertake, the time frame for implementation of the measures, and associated preliminary costs of implementation.

SEA-TAC's 1985 NCP identified and established major noise mitigation programs and program boundaries that remain the same today. The Acquisition Program, a significant component of the NCP, is essentially complete, with the acquisition of 1,400 parcels and the relocation of an estimated 2.2 persons per parcel since the mid-1970s. Another major component is the sound insulation program, which is a voluntary, on-going program. The insulation program boundaries include approximately 7,500 remaining eligible single family residences. This number does not include mobile homes.

As mentioned, some modifications to the NCP are a result of the Port of Seattle's Noise Mediation Project (see description in Appendix C) completed in March 1990 and contained in the Seattle-Tacoma International Airport Noise Mediation Agreement. In the Noise Mediation Project, the FAA, Port, airlines, citizens, pilots and airport users formed the Noise Mediation Committee and negotiated a package of noise abatement and mitigation measures for the airport. Among the measures contained in the Noise Mediation package were several modifications to the federally funded noise mitigation program at SEA-TAC. Some of the mediated revisions were implemented following FAA concurrence with the understanding that they would be included in this document for clarification and final FAA endorsement. These measures include the change from Cost Share to Standard Insulation Program (M-2a) and the addition of the Special Purchase Option (M-3a) as an added feature of Transaction Assistance.

On July 13, 1993, the Port of Seattle Commission adopted the set of amendments contained in this document as Attachment A to Resolution No. 3144. Resolution No. 3144 can be found on page i - iii at the front of this amendment package.

Program Funding Policy

This package of amendments and the measures to which they relate represents an estimated cost of $102 million. Unless stated otherwise, the Port of Seattle intends to request federal funding for the Noise Compatibility Program amendments. Where applicable, the Port will seek reimbursement of such funds on a matching grant basis (presently 80% federal funds) for approved measures. In addition, through 1995, the Port is pursuing Passenger Facilities Charges which will be used in part for noise mitigation. The Port intends to seek a long-term Letter of Intent from the FAA that would establish the FAA's post-1995 funding commitment to these programs. After 1995, the Port will continue to identify available Port funds necessary to complete the noise mitigation programs should federal funds not be available.

Noise Exposure Maps

The recent update to the noise exposure maps for SEA-TAC Airport was submitted to the FAA for acceptance on June 11, 1992. They were accepted on April 15, 1993. The maps and supporting documentation can be found in the Port of Seattle's Noise Exposure Map submittal to the FAA dated April 1993.

In summary, the study predicts a decline in the total land use figures within the noise contours. The number of individuals living within the 65 DNL contour will likely shrink by approximately 34.3% and the number of acres by 32.3% by 1996. This decrease in noise impact will result primarily from the change in aircraft type that are predicted to use SEA-TAC Airport.

In terms of aircraft type, the forecast shows that jet operations are likely to go from 53.5% Stage 3 in 1990 to 75% Stage 3 in 1996. Noise reduction will be significantly promoted by the programs from Noise Mediation, specifically the Sea-Tac Noise Budget and Nighttime Limitations Program which strongly favor a steady conversion to Stage 3 aircraft. In particular, the Nighttime Limitations Program mandates a phase out of Stage 2 aircraft at night (10 p.m. to 7 a.m.) by October 1995. Because aircraft operating within this time period are assigned a ten decibel penalty in calculating noise levels, the successful implementation of this program is an important factor in decreasing the noise contours.

In the Noise Mediation Project, a comprehensive list of noise reduction alternatives was evaluated, resulting in the current package of measures included in the Noise Mediation Agreement. Based on the positive results of the NEM development for this update, which shows significant reduction in noncompatible uses within the 1996 65 DNL, further consideration of alternatives specific to this effort was not deemed necessary.

Noise Compatibility Program Measures

This document contains amendments to the Noise Compatibility Program for Seattle-Tacoma International Airport. They consist of changes to the existing program as well as the addition of new program elements. For ease of reference, each proposed amendment is presented following the relevant 1985 measure to which it relates. The 1985 measures that are not being amended are not included here but can be found in the original document titled Sea-Tac International Airport Part 150: Airport Noise Compatibility Program. The word "jurisdictions" is used throughout this document and refers to those entities having land use planning and control authority.

Public Consultation

Development of the 1993 amendments to the Seattle-Tacoma International Airport Noise Compatibility Program (NCP) involved the efforts of many individuals and entities. In keeping with the policy of the Port to involve the public and airport users in aircraft noise planning projects, a Technical Review Committee was formed to provide input for the development of both the Noise Exposure Maps and the Noise Compatibility Program amendments. Various individuals and entities involved included: area citizens, community planning representatives, Air Traffic Control Tower representatives, and Port of Seattle staff. The various communities whose jurisdictions are affected by the DNL 65 contour were informed of the project and a number of jurisdictions were actively represented by staff planners. If a community did not wish to participate, the community was kept involved in the process and provided with all meeting summaries, work products and meeting notices. They were also asked to comment on all work products, as were the committee members.

A number of meetings in addition to those of the TRC were held. These included meetings with the planning staff of several surrounding communities. Some citizen members of the committee decided not to remain involved subsequent to the development of the Noise Exposure Maps and the jurisdictions were asked to provide names of interested citizens to serve on the committee. In an effort to bring these new members "up to speed", several additional briefings and presentations were prepared and offered to the new members concerning many of the issues that had been addressed prior to their being on the committee. A list of committee members who were solicited to attend each meeting is in Appendix B. In addition, coordination with the state aeronautics department took place.

There were thirteen committee meetings held during the course of the study, all of which were open to the public. Various materials were given to those in attendance explaining what work had been accomplished and the concept of that particular meeting. Committee comments and input was solicited at each meeting, along with a discussion of materials presented. Individuals in the audience also often commented on various issues.

In addition to the public meetings and individual planning staff meetings, an Open House and a Public Hearing were held on May 12, 1993, concerning the Noise Compatibility Program amendments. The Hearing was advertised in the newspaper and individual notices and draft documents were mailed to committee members (Proof of Publication is in Appendix A). In addition, a notification was placed in April and May in the *Forum Newsletter*, a publication with a circulation of approximately 28,000 households of people who live around the airport or have a special interest in airport noise issues. Approximately fifty people attended the Hearing and sixteen presented verbal comments. A transcript was made by a certified court reporter and is in Appendix D. Public comment on the amendments were accepted from May 3 to May 24, with the comment period extended until June 14. All of these comments were responded to and are in the Appendix D.

The Noise Compatibility Program amendments and the Noise Exposure Maps were presented to the Port of Seattle Commission for first reading of a resolution to adopt the amendments in regular meeting, on June 22, 1993. The second reading to the Commission was on July 13, 1993, in regular meeting. Both of these Commission meetings provided additional opportunities for public comment. The Commission adopted the Noise Compatibility Program amendments and instructed the staff to submit the Noise Compatibility Program to the Federal Aviation Administration for approval. See Resolution No. 3144 on page i - iii at the front of this document.

Amendments to Existing Program

Original Measure M-2.

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.

Program Amendment Information Related to Measure M-2, Sound Insulation Program.

As stated in the 1985 FAR Part 150 Program, the details for the insulation program were developed as a result of a Demonstration Program and successful implementation of the full-fledged Noise Remedy Program. To better serve the affected residents of the SEA-TAC area, a number of modifications to the noise insulation program are presented here. These modifications are subject to certain policies. Significant ones include the following:

1. As a result of community comment, the Port has determined that all non-sound insulated single family homes within the Noise Remedy Program boundaries are incompatible land uses and as such, are eligible for a sound insulation design goal of at least 5 dB reduction and an interior noise level of not greater than 45 DNL.

In 1985, the FAA accepted the Port of Seattle's Noise Exposure Maps and approved its Part 150 Noise Compatibility Program. Following these actions, the Port gave its support and technical assistance to King County and the City of Des Moines to develop building codes with sufficient noise insulation requirements. (At that time, the city and county had responsibility for the vast majority of the area within the Noise Remedy boundaries.) The sound insulation codes went into place in late 1987. The Port of Seattle, therefore, considers homes permitted after September 1987 to be compatible with the airport and does not provide insulation to these structures.

Within the last three years, some areas of unincorporated King County that were in the Noise Remedy boundaries formed new cities or were annexed into existing ones. This has not changed the Noise Remedy insulation guidelines as stated above. The responsibility to require sound insulation in new structures remains with cities now governing neighborhoods that were covered by these important codes before incorporation or annexation.

2. State law requires that an avigation easement be granted to the Port of Seattle when insulation treatment is provided.

3. The priority system developed for the Noise Remedy Program gives preference to the most noise impacted homes.

4. It should be understood that purchasing an avigation easement as a "stand alone" mitigation measure will only be used after determining that insulation of an eligible building is not feasible.

M-2a: STANDARD INSULATION

ISSUE

Increase participation in the Cost-Share Insulation Program and accelerate the rate of insulation. (It was found that participation was low in the insulation program when it required a 50% financial contribution by the homeowner.)

AMENDED ACTION

The former Cost-Share Insulation Program is changed to a Standard Insulation Program and no financial participation by the homeowner is now required.

COMMENTS

The Cost-Share Insulation Program offered homeowners customized insulation treatment at 50% of the cost. Because participation in the program was low, a decision was made to provide insulation treatment at no financial cost, although an avigation easement from the property owner is required. Anticipating a significant increase in homeowner interest, a standardized design approach was developed based on previous experience and verified by field audits. The standardized design approach is meant to accelerate the program and reduce the costs of administrative procedures.

COSTS

The average cost for the standardized design approach is approximately $8,000 per house for construction plus $2,000 per house for administration. This totals $10,000 per house. Insulation costs in both the Neighborhood Reinforcement Area and the Standard Insulation Area total approximately $84 million, eligible for FAA participation at 80%.

RESPONSIBLE PARTIES

The Port is responsible for implementing this program. To take part in this program, homeowners are responsible for submitting applications.

PORT ACTION

The Port will implement the change from the Cost-Share Program to the Standard Insulation Program.

TIME FRAME

The time frame for completing insulation of single family residences within the Standard Insulation Area is the year 2001. There are approximately 5,700 uninsulated homes in the Standard Insulation Program area and another 1,800 in the Neighborhood Reinforcement Area. The Port intends to insulate some percentage of homes from each program area. Because of the voluntary nature of the program, it cannot be determined precisely how many residents will participate. The Port is estimating that 90% of homes are likely to participate.

(Program Amendment Information Related to Measure M-2, Sound Insulation, continued.)

The amendments to Measure M-2 also include the addition of sound insulation of public use facilities and multi-family developments. It is intended that pilot projects be implemented for these types of structures. This would include insulation of two (2) churches, one (1) private school, one (1) multi-family structure of more than four units and one (1) convalescent home. The projects that are being recommended have never been part of the Noise Remedy Program. Experience has shown that the manner in which structures are included in a program and how the program is implemented from a technical and administrative standpoint is information needed prior to a commitment to a full program. If successful, the pilot projects will be expanded.

The Port will identify the structures for the pilot projects using information developed by the Public Buildings Committee and based on the following criteria: eligible for federal funding; located in the Neighborhood Reinforcement Program Area; constructed without sound insulation or permitted or vested before FAA acceptance of the 1985 NEMS or within a reasonable time thereafter; and for multi-family developments, primarily owner occupied. Other criteria will include the willingness of the owner to participate and grant an avigation easement, and a strong indication that the structure will remain as the use currently designated. Of these structures, only eligible rooms will be insulated, based on FAA criteria and guidelines.

For the insulation of public use facilities and multi-family structures, the Port will establish a Pilot Project Review Committee to help evaluate the effectiveness of the pilot projects. An acoustical consultant will work with the Port, the FAA, the committee and building owner in developing insulation plans and procedures, assessing the success of the pilot project and recommending modifications to the plans, if needed, prior to proceeding with full program implementation. Individual briefings with property owners will be held to discuss concerns and procedures, options available, noise exposure characteristics, etc. In addition, a follow-up opinion survey will be given to solicit views concerning the success of the projects.

After completion and evaluation of the pilot projects, the criteria may be modified based on the project findings. It is the intention of the Port of Seattle to transition from these pilot programs to full insulation programs as quickly as possible.

M-2b: PUBLIC BUILDINGS

ISSUE	Expanding the Sound Insulation Program to include public buildings.
AMENDED ACTION	The Port will conduct a pilot project on four public use buildings. The Port will identify the participating structures using information developed by the Public Buildings Committee and based upon the criteria presented. Upon approval of the structures and plans by the FAA, sound insulation will commence. These pilot projects will determine the feasibility, procedural requirements and costs for sound insulation of public use structures.
COMMENTS	Community discussion during the Noise Mediation Project indicated the need to further address non-compatible public buildings. As directed in Port of Seattle Commission Resolution No. 3125 and Resolution No. 3144, the Port is accelerating the rate of its single family residential insulation program and will be developing a plan for incorporating a number of structures other than residential into its Noise Remedy Program. This amendment is the first step in developing that plan and program.

COST

The initial, estimated general cost to insulate these public buildings is approximately $500,000 each, with the private school being up to $1 million depending upon how many rooms are involved. This is a preliminary cost that is a rough estimate, as the plans and specifications have not been prepared nor have any noise audits been performed. The cost of an acoustical consultant to evaluate and recommend changes to the pilot program is approximately $50,000.

RESPONSIBLE PARTIES

The Port is responsible for implementing this pilot program. The owners of the public structures who voluntarily commit to the program are responsible for working with the Port to achieve the program goals.

PORT ACTION

The Port will identify the pilot projects as soon as possible, as outlined. The Port will initiate the review committee and hire the acoustical consultant.

TIME FRAME

The pilot projects can be initiated soon after approval of the NCP by the FAA. Preliminary discussions with building owners, consultant solicitation and committee determination can be initiated prior to that time. It is anticipated that the pilot projects can be completed by mid-1995. If the project is successful, a regular public buildings insulation program can be initiated.

M-2c: MULTI-FAMILY DEVELOPMENTS

ISSUE

Expanding the Sound Insulation Program to include Multi-family Developments.

AMENDED ACTION

The Port will conduct a pilot project on one multi-family development. The Port will identify this particular structure based upon the criteria presented. Upon approval by the FAA, sound insulation plans will be developed and submitted to the FAA for approval. Upon approval of the plan, sound insulation will commence. This pilot project will determine the feasibility, procedural requirements and costs for sound insulation of other multi-family structures. Such other insulation projects can proceed subsequent to the pilot project.

COMMENTS

Community discussion during the Noise Mediation Project indicated the need to further address the issue of sound insulating multi-family developments. As directed in Port of Seattle Commission Resolution 3125, the Port is increasing the rate of its single family residential insulation program and will be developing a plan for incorporating multi-family developments into its Noise Remedy Program. This amendment is the first step in developing that plan and program. As stated above, the Port intends to initiate a pilot project for a multi-family development with four or more units, primarily owner occupied. The particular

development will be based on the criteria outlined on page A.9 and from a list of such uses. Not every multi-family development on the list will be insulated or can be considered eligible, but the pilot project will be determined from this pool of existing structures.

COST

The initial, estimated cost to insulate multi-family developments is estimated at approximately $5,000 to $8,000 per unit based on a 35-unit building for a total cost of approximately $175,000 to $280,000. This is a preliminary cost and no plans or specifications have been prepared. The cost of an acoustical consultant to evaluate and recommend changes to the pilot program is approximately $30,000. Subsequent to the completion of the pilot project, a refined plan will be implemented to insulate the remaining eligible multi-family developments within the Noise Remedy Program boundaries.

RESPONSIBLE PARTIES

The Port is responsible for implementing this pilot project.

PORT ACTION

The Port will identify the multi-family structure to use as a pilot project as soon as possible. The basis for this selection was outlined previously. The Port will initiate the review committee and hire the acoustical consultant.

TIME FRAME

The new action will be initiated by the Port as soon as the structure and NCP is approved by the FAA. Preliminary discussions with the owners, consultant solicitation and committee determination can be initiated prior to that time. It is anticipated that the pilot project can be completed by mid-1995.

M-2d: MOBILE HOMES

ISSUE

Reduction of Noncompatible Mobile Homes in the Airport Environs by Providing an Incentive to Change Land Use.

AMENDED ACTION

In exchange for conversion to a compatible use and an avigation easement, the Port of Seattle will assist the owner of the park or property in converting the use by providing funds to move the mobile homes outside the Noise Remedy boundaries if the following conditions apply:

a) If the owner of the property on which the mobile home is located seeks to convert the use of the property to a compatible use, and;

b) If the jurisdiction in which the property is located requires the owner of the property to develop a relocation plan for the residents of a park that is closing, and;

c) If the owner of the property as a condition of an avigation easement stipulates that no noncompatible use will be allowed back on the property and that Port funds will be used for the relocation of the mobile homes, and;

d) If the jurisdiction agrees to restrict development on the property to noise compatible uses.

In addition, recognizing the difficulty of moving older mobile homes or finding sites on which to move mobile homes, the Port will provide advisory services to mobile home owners to assist them in locating other mobile home sites outside the Noise Remedy Program area.

COMMENTS

Mobile homes are not compatible with a highly noise impacted area, yet the technology is not available to sound insulate them. In addition, the landlord/tenant relationship precludes options available for single family dwellings. (In using federal funds, the Port must work directly with the property owner.) The program outlined is intended to promote a land use change to a compatible use as defined in FAR Part 150. It will be most effective when restricted to jurisdictions such as the City of SeaTac that require property owners to develop a relocation plan when wishing to close a mobile home park. As with the Port's insulation programs, participation

depends on the voluntary commitment by the property owner. The Port has and will continue to work with other local agencies to develop sources of funds for cost impacts over and above the cost of moving for those mobile home owners who have older mobile homes.

COST

We anticipate that approximately five hundred mobile homes of the 1,500 in the Noise Remedy Program area in the next five years will take advantage of this program. Based on the dollar amounts identified through the State of Washington, the average cost of moving a mobile home is estimated at $6,000 per unit, totaling $3,000,000 over the next five years.

RESPONSIBLE PARTIES

The Port of Seattle is currently responsible for funding this measure and will apply for FAA grants to implement it. This measure, to be most effective, will require that jurisdictions develop policies related to closure of mobile home parks and that they plan and zone such property in a manner compatible with the airport environs.

PORT ACTION

The Port of Seattle, in cooperation with jurisdictions having policies related to closure of mobile home parks and with the FAA, will develop procedures and guidelines for implementing this program. The Port will seek input from residents and owners of mobile home parks. The Port will also work with local communities to develop land use and zoning policies consistent with this measure.

TIME FRAME

The time frame and cost for the mobile home proposal are based on the assumption that the only mobile home owners who will receive moving costs are those who live in a park that the owner is considering closing or that are owners of the property on which the mobile home is situated.

Original 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.

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.

Program Amendment Information Related to Measure M-3, Transaction Assistance.

The Transaction Assistance Program has been modified to include a new option, the Special Purchase Option, negotiated through the Noise Mediation Project. In addition, a change in procedure for regular Transaction Assistance has been in effect since the start of the program and is documented here as an amendment.

M-3a: SPECIAL PURCHASE OPTION

ISSUE	Assistance to residents of specially situated homes.
AMENDED ACTION	Recognizing that noise affected residents next to Port acquisition property are in unique circumstances that may make sale of their homes difficult, a special purchase option to the Transaction Assistance program was developed. If a home is immediately adjacent to Port acquisition property and the homeowner has owned his/her home for more than five years, the homeowner has the option of selling the home to the Port at a purchase price based on fair market value. The Port will then insulate the home, if feasible, and offer it for resale. This transaction could only occur once with each property; the new owner would not qualify for this special purchase option.
COST	This action is anticipated to cost approximately $4 million for the life of the program, with an average cost per structure of $21,000. It is intended to

give assistance to residents of certain specially situated homes.

RESPONSIBLE PARTIES

The homeowners are responsible for applying to the Port to take advantage of this program. The Port is responsible for purchasing the homes at fair market value.

PORT ACTION

The Port will identify the areas eligible for assistance, make information available to the residents of the area concerning the program and submit an application to the FAA for funds.

TIME FRAME

This program has been conditionally initiated based on the Noise Mediation Project, and it is anticipated that the program will end with the completion of the residential insulation program. There are approximately three hundred fifty (350) homes eligible for this program, of which approximately one hundred seventy-five are expected to participate throughout the life of the program.

M-3b: INSULATION REQUIREMENT

ISSUE

To ensure that funding supports the sale of a home that is compatible with noise levels.

AMENDED ACTION

If the home is not adjacent to Port acquisition property but is in the Transaction Assistance eligibility area, the homeowner is eligible to apply for

Transaction Assistance when the home has been insulated through the Port insulation process. Homeowners within the Neighborhood Reinforcement area are eligible for Transaction Assistance (help in selling their homes). A condition to participation in this program was stipulated at the inception of the formal program after the demonstration program.

COMMENTS

This procedure was developed through the original Port insulation demonstration project and has been Port procedure since the regular program was instituted. It is included here as a formal change. This procedure was developed for a variety of reasons including:

1) The Demonstration Program indicated that a homeowner may decide to stay in his/her home after it has been treated with sound insulation;
2) An insulated home was considered more attractive to potential buyers;
3) A home sale that is supported by FAA and Port funding should be an airport noise compatible structure.

There are approximately 2,000 homes eligible for Transaction Assistance, of which approximately five hundred are expected to participate at an estimated cost of $14,000 per home.

COST

The cost of this program is anticipated to be about $7 million over the life of the program.

RESPONSIBLE PARTIES

To take part in the Transaction Assistance Program, the homeowner must voluntarily participate in the Port insulation program first. The homeowner is then responsible for applying for the program. The Port is responsible for providing the sales assistance if it is necessary.

PORT ACTION

The Port will coordinate the process and procedure for each eligible homeowner.

TIME FRAME

This program is anticipated to end with the completion of the residential insulation program.

Original Measure A-4, Expand Noise Monitoring System.

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 DNL 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 DNL.

Program Amendment related to Measure A-4, Expand Noise Monitoring System.

M-4a: EVALUATION OF NOISE MONITORING SYSTEM

ISSUE	Assessment of new features for the Noise Monitoring System.
AMENDED ACTION	Sea-Tac Airport's Noise Monitoring System installed in 1979 will be evaluated. Based on this study, a determination will be made about replacement of the system, expansion or other modifications.
COMMENTS	Measure A-4, as written, has been implemented. This amendment is intended to aid the Airport in better determining the success of its newer noise abatement programs, and increasing the flexibility and effectiveness of the noise monitoring process.

COST	The cost of the evaluation is anticipated to be approximately $75,000. The cost of improvements will depend on the studies, but could be $600,000 for a new, expanded system.
RESPONSIBLE PARTIES	The Port is responsible for initiating and providing funds for the evaluation, and will apply to the FAA for funding to improve the system, as needed.
PORT ACTION	The Port will initiate the study and is responsible for implementing necessary and feasible recommendations of the study.
TIME FRAME	Initiation of the project will occur in 1994.

Recommended New Measures

The following measures are new and do not amend existing Part 150 measures.

M-7: FUNDING FOR LAND USE/NOISE COMPATIBILITY PLANNING

ISSUE	Compatible Land Use Planning Process.
NEW ACTION	Public agencies (defined as a state, municipality or other political subdivision, or a tax-supported organization, or Indian Tribe) having planning authority within the 65 DNL contour will be able to apply for reimbursable funding of specific off-airport land use/noise compatibility planning efforts which are consistent with the principles and guidelines of FAR Part 150 and the Port of Seattle noise compatibility planning goals.
COMMENTS	This measure is an effort to encourage affected public agencies to participate in compatible land use/noise compatibility planning efforts beyond the airport boundary by providing funds for planning projects.
COST	The cost of such an effort is anticipated to be approximately $100,000 per plan. There are at least ten such agencies having planning authority within the 65 DNL contours, resulting in a cost of $1,000,000.

RESPONSIBLE PARTIES

The Port of Seattle will work with public agencies and the FAA to develop mutually agreed upon procedures and guidelines for application and disbursement of funds. To access funds, the public agencies must incorporate land use/noise compatibility planning standards consistent with the principles and guidelines of FAR Part 150.

PORT ACTION

The Port will meet with the FAA and public agencies to determine guidelines and procedures.

TIME FRAME

The time frame and cost for these land use/noise compatibility planning efforts can vary greatly, but they can be initiated immediately subsequent to the approval of the Noise Compatibility Program amendments.

M-9: COMMUNITY PLANNERS FORUM

ISSUE

Coordination of Community Planning Efforts Through a Planners Forum.

NEW ACTION

A committee called the Planners Forum will be initiated to allow planning representatives from all jurisdictions within the Airport's 65 DNL contour, or other invited jurisdictions with interest, to meet and share information pertaining to comprehensive planning, community/airport planning, land use issues and noise mitigation efforts on a regular basis.

COMMENTS

The Airport is surrounded by many jurisdictions having various types of land use planning and development activities. In an effort to coordinate all of these various activities, as well as airport development plans, it is recommended that a Planners Forum be initiated. It will act as a single point of contact and coordination for all of these agencies in issues related to community/airport planning. The participants are envisioned to be the planners that are responsible for land use development within each jurisdiction within the 1991 NEMS.

COST

The cost for the Forum will be included in normal operating expenses of the Port.

RESPONSIBLE PARTIES

The Port is responsible for initiating and coordinating the Forum and providing space to meet. The various public agencies and jurisdictions are responsible for providing input and participating in the Forum. There may be certain consultants, speakers or new technology developments that may be appropriate for the Forum.

PORT ACTION

The Port has initiated the Forum and meetings will be held at a minimum of once each calendar quarter.

TIME FRAME

The time frame for the meetings will be immediate, with meetings at least quarterly. The Forum will continue indefinitely with evaluations performed every year.

M-10: OPERATIONS REVIEW AND NEM UPDATES

ISSUE	Update and Review of the FAR Part 150 Program and Contour Review.
NEW ACTION	To assist in tracking all relevant information, the Port will review its operations forecast each year, review variances to the Nighttime Limitations Program, and review the ANEL (airport noise exposure level as defined in the Sea-Tac Noise Budget). Contours up to 65 DNL will be developed whenever there is a 15% change in operations or every two years, whichever comes first. The review will assist the Port in determining if the Noise Exposure Maps need to be updated, as per FAR Part 150 guidelines. The Port will produce an annual report containing the foregoing information.
COMMENTS	The FAR Part 150 Program is a five-year program which will be reevaluated at the end of the five-year period. As per the Part 150 regulation, if there is a significant change in either aircraft types, numbers of operations or airport facilities that significantly change the noise levels, then the Study will be reevaluated prior to the end of the five-year timeframe.
COST	The cost of monitoring the information set forth in this section will be borne out of normal Port operating budget. Consultant assistance through 1996 for developing noise contours would be approximately $15,000.

RESPONSIBLE PARTIES

The Port is responsible for monitoring and updating the FAR Part 150 at the five-year increments or when there is a significant change in aircraft types, numbers of operations or facility changes that significantly impact noise levels. The Port will produce the annual report for public dissemination. The Federal Aviation Administration could help fund the update if there are funds available for such planning.

PORT ACTION

Based on the monitoring activities described, the Port will reevaluate the program when there is a significant change or at the end of the five-year timeframe. The Port will publish the results of its evaluation in the Noise Abatement Quarterly Report.

TIME FRAME

The Port will institute monitoring procedures immediately and will plan for a full update of the Program in 1996 or earlier if necessary as per FAR Part 150. The annual review will be initiated in February of each year. The first review will be initiated subsequent to the approval of these amendments to the NCP.

Implementation

Implementation of the amendments is subject to approval by the FAA. The individuals and entities responsible for the implementation of the program include the Port of Seattle, the Federal Aviation Administration, citizens living within the airport environs, airport management and others.

The preceding amendments constitute the package of modifications to the Seattle-Tacoma International Airport FAR Part 150 Noise Compatibility Program submitted to the Federal Aviation Administration for approval.

Appendices List

Appendix A: 1991 and 1996 Noise Exposure Maps
FAA Acceptance Letter
Federal Register Notice
Proof of Publication

Appendix B: Technical Review Committee
Distribution List/Mailing List
April and May Forum Newsletter
Newspaper Ad
Meeting Notices and Summaries

Appendix C: Noise Mediation Agreement
Noise Mediation Fact Sheet
Section 4.0 Noise Control Options, Noise Mediation Project
Port Letter to FAA, October 11, 1991
FAA Letters to Port, March 12, 1991 and December 2, 1991

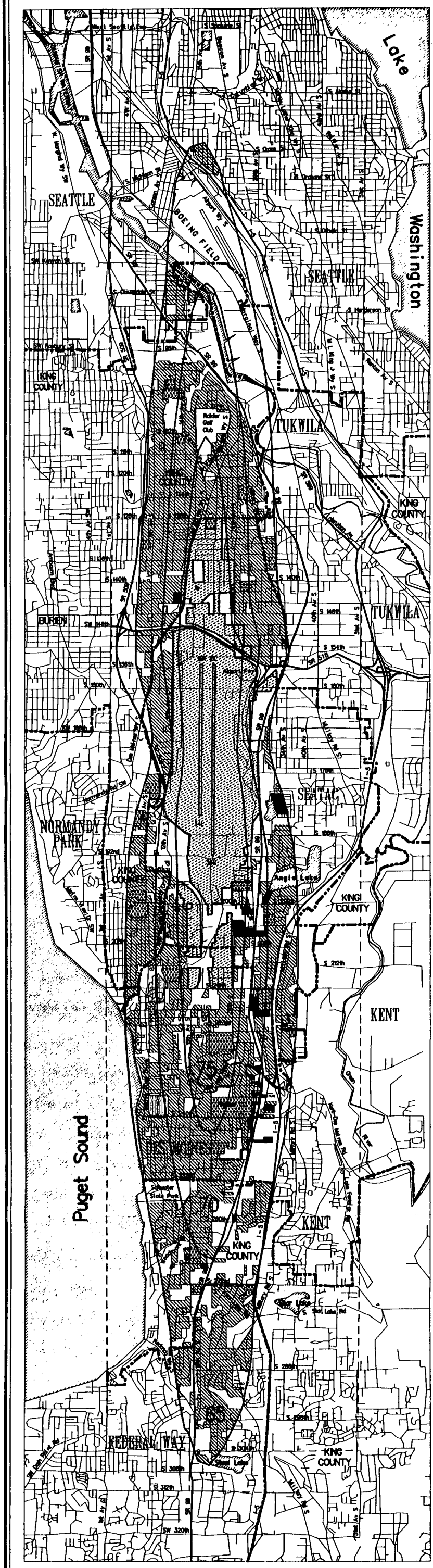
Appendix D: Transcript from Public Hearing
Written Public Comments with Port of Seattle Responses

Copies of Appendix D may be obtained by calling the Noise Information Line at 433-5393

Seattle-Tacoma International Airport
FAR Part 150
Noise Compatibility Program: 1993 Amendments

APPENDIX A

* 1991 and 1996 Noise Exposure Maps
* FAA Acceptance Letter
* Federal Register Notice
* Proof of Publication



Sea-Tac International Airport

Existing Noise Exposure Map 1991

- Residential
- Mobile Home Park
- School
- Hospital; Nursing Home
- Airport
- Historic Site
- Study Area Boundary
- Jurisdictional Boundary
- Ldn Noise Contour

NOTE: Only noncompatible land uses as defined in Table 1, Appendix A, of FAR Part 150 are designated within the noise contours.

The Ldn 65 contour contains approximately 14,128 acres and 67,000 people.

The Ldn 70 contour contains approximately 7,108 acres and 28,979 people.

The Ldn 75 contour contains approximately 3,254 acres and 7,357 people.

Note: All contour figures are cumulative; figures for the larger contours include those within all smaller contours.

Flight tracks and noise monitoring sites are depicted on the regional and study area INM flight track exhibits.

The Noise Exposure Map and accompanying documentation for the Noise Exposure Map for Seattle-Tacoma International Airport, submitted in accordance with F.A.R. Part 150 with the best available information, are hereby certified as true and complete to the best of my knowledge and belief. Adequate opportunity has been afforded to the public for review of all relevant information and comments received from interested persons are included in this submission. A copy of this submission, including copies of all written comments have been filed with the Regional Director, Federal Aviation Administration.

Signed R. Burr Stewart Date April 15, 1993

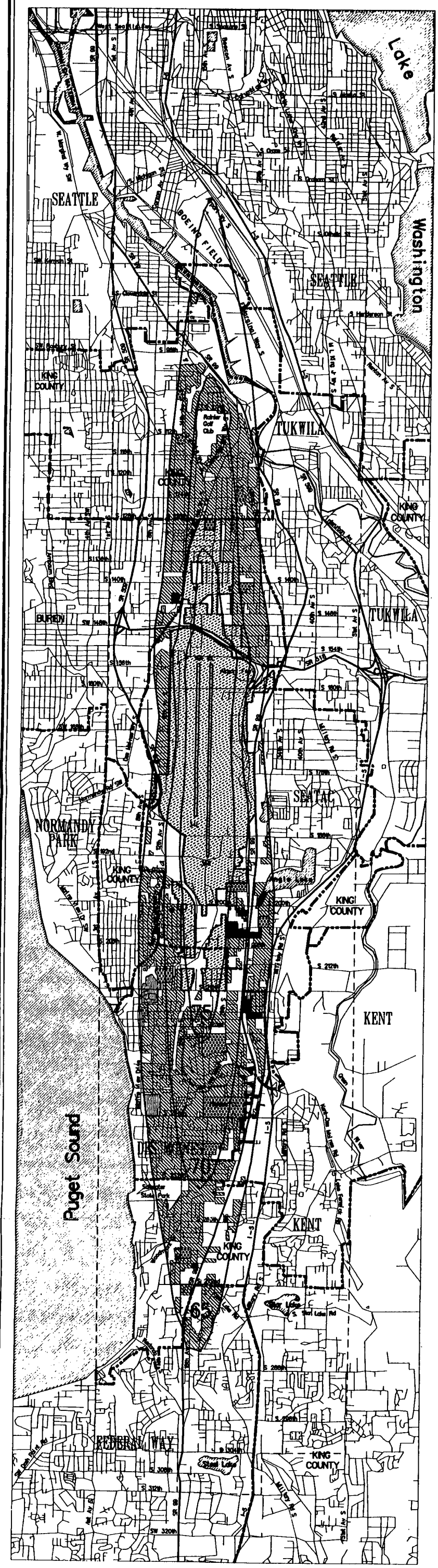
Title

Mr. R. Burr Stewart
Director, Aviation Planning
Seattle-Tacoma International Airport
Port of Seattle

N

Scale 1:36,000

1" = 3,000'



Sea-Tac International Airport

Future Noise Exposure Map 1996

- Residential
- Mobile Home Park
- School
- Hospital; Nursing Home
- Airport
- Historic Site
- Study Area Boundary
- Jurisdictional Boundary
- Ldn Noise Contour

NOTE: Only noncompatible land uses as defined in Table 1, Appendix A, of FAR Part 150 are designated within the noise contours.

The Ldn 65 contour contains approximately 9,552 acres and 44,037 people.

The Ldn 70 contour contains approximately 4,456 acres and 13,985 people.

The Ldn 75 contour contains approximately 1,756 acres and 1,306 people.

Note: All contour figures are cumulative; figures for the larger contours include those within all smaller contours.

Flight tracks and noise monitoring sites are depicted on the regional and study area INM flight track exhibits.

The Noise Exposure Map and accompanying documentation for the Noise Exposure Map for Seattle-Tacoma International Airport, submitted in accordance with F.A.R. Part 150 with the best available information, are hereby certified as true and complete to the best of my knowledge and belief. Adequate opportunity has been afforded to the public for review of all relevant information and comments received from interested persons are included in this submission. A copy of this submission, including copies of all written comments have been filed with the Regional Director, Federal Aviation Administration.

Signed R. Burr Stewart Date April 15, 1993

Title

Mr. R. Burr Stewart
Director, Aviation Planning
Seattle-Tacoma International Airport
Port of Seattle

N

Scale 1:36,000

1" = 3,000'

U.S. Department
of Transportation

**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana
Oregon, Utah, Washington
Wyoming

1601 Lind Avenue, S. W.
Renton, Washington 98055-4056

APR 16 1993

RECEIVED
APR 19 1993
PLANNING
DEPARTMENT

Mr. R. Burr Stewart
Director, Aviation Planning
Seattle-Tacoma International Airport
Port of Seattle
P.O. Box 68727
Seattle, WA 98727

Dear Mr. Stewart:

We have evaluated your Noise Exposure Maps and supporting documentation submitted in accordance with section 103(a)(1) of the Aviation Safety and Noise Abatement Act of 1979 (ASNA), and determined your submission complies with applicable requirements of 14 CFR Part 150. Further, we have determined:

a. The Noise Exposure Maps (Exhibits 4A and 4B of the report) and additional supporting documentation meet the requirements as of the date of submission (i.e., 1991) and are acceptable in accordance with the standards set forth in the Federal Aviation Regulations (FAR). The base map of the airport environs land use was prepared in consultation with public agencies and political jurisdictions within the 65 DNL contour.

b. The Noise Exposure Maps (Exhibits listed in paragraph "a" above) include noise contours for 1996 and are reasonably consistent with the provisions set forth in the FAR.

Our determination is limited to a finding that the maps were developed in accordance with the procedures contained in Appendix A of the FAR Part 150. Such determination does not constitute approval of your data, information, or plans.

Should questions arise concerning the precise relationship of specific properties to noise exposure contours depicted on your Noise Exposure Maps, you should note that we will not be involved in any way in determining the relative locations of specific properties with regard to the depicted noise contours, or in interpreting the maps to resolve questions concerning, for example, which properties should be covered by the provisions of Section 107 of the Act. These functions are inseparable from the ultimate land use control and planning responsibilities of local government. These local responsibilities are not changed in any way under Part 150 or through our determination relative to your Noise Exposure

We will publish notice in the Federal Register announcing our determination of the Noise Exposure Maps for Seattle-Tacoma International Airport.

Your notice of this determination and the availability of the Noise Exposure Maps, when published at least three times in a newspaper of general circulation in the county or counties where affected properties are located, will satisfy the requirements of Section 107 of the ASNA.

Your attention is called to the requirements of Section 150.21(d) of the FAR involving the prompt preparation and submission of revisions to these maps if any actual or proposed change in the operation of Seattle-Tacoma International Airport that might create any substantial, new noncompatible use in any areas depicted on the maps.

Congratulations on your successful completion of the FAR Part 150 Noise Exposure Maps. We look forward to working with you to further reduce noise in the area surrounding the airport.

Sincerely,

Edward G. Tatum
Manager, Airports Division
Northwest Mountain Region

contact either Captain David J. Kantor or Lieutenant Lee Handford, U.S. Coast Guard (G–LMI), 2100 Second Street, SW., Washington, DC 20593, telephone (202) 267–1527, telefax (202) 267–4496. For information regarding the Maritime Liens and Mortgages Convention, contact Lieutenant Commander Mark J. Yost, U.S. Coast Guard (G–LGL), telephone (202) 267–0059, telefax (202) 267–4163.

Dated: April 15, 1993.

Geoffrey Ogden,

Chairman, Shipping Coordinating Committee.

[FR Doc. 93–9702 Filed 4–26–93; 8:45 am]

BILLING CODE 4710–07–M

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE

Modification of Sanctions With Respect to the European Community Pursuant to Title VII of the Omnibus Trade and Competitiveness Act of 1988

AGENCY: Office of the United States Trade Representative.

ACTION: Postponement of implementation of prohibition of awards of contracts by federal agencies for products and services from Member States of the European Community until further notice.

SUMMARY: On April 22, 1993, the United States Trade Representative announced that the effective date of the prohibition on awards of contracts by federal agencies for products and services of some or all member states of the European Community (EC), scheduled to go into effect on that date, was being postponed in light of the agreement reached in principle with the EC on April 21, 1993 that will eliminate EC discrimination in the heavy electrical sector. An announcement of sanctions modified to reflect that agreement will be made shortly.

FOR FURTHER INFORMATION CONTACT: Mark Linscott, Office of GATT Affairs (202–395–3063), or Laura B. Sherman, Office of the General Counsel (202–395–7203), Office of the United States Trade Representative, 600 Seventeenth Street, NW., Washington, DC 20506.

Frederick L. Montgomery,

Chairman, Trade Policy Staff Counsel.

[FR Doc. 93–9944 Filed 4–26–93; 8:45 am]

BILLING CODE 3190–01–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Noise Exposure Map Notice; Seattle-Tacoma International Airport, Seattle, WA

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice.

SUMMARY: The Federal Aviation Administration (FAA) announces its determination that the noise exposure maps submitted by Seattle-Tacoma International Airport (SEA) under the provisions of Title I of the Aviation Safety and Noise Abatement Act of 1979 (Pub. L. 96–193) and 14 CFR part 150 are in compliance with applicable requirements.

EFFECTIVE DATE: The effective date of the FAA's determination on the Seattle-Tacoma International Airport noise exposure maps is April 15, 1993.

FOR FURTHER INFORMATION CONTACT: Dennis Ossenkop, FAA, Airports Division, ANM–611, 1601 Lind Avenue, SW., Renton, Washington, 98055–4056.

SUPPLEMENTARY INFORMATION: This notice announces that the FAA finds that the noise exposure maps for Seattle-Tacoma International Airport are in compliance with applicable requirements of part 150, effective April 15, 1993. Under section 103 of Title I of the Aviation Safety and Noise Abatement Act of 1979 (herein after referred to as "the Act"), an airport operator may submit to the FAA a noise exposure map which meets applicable regulations and which depicts noncompatible land uses as of the date of submission of such maps, a description of projected aircraft operations, and the ways in which such operations will affect such maps. The Act requires such maps to be developed in consultation with interested and affected parties in the local community, government agencies and persons using the airport.

An airport operator who has submitted a noise exposure map that has been found by FAA to be in compliance with the requirements of Federal Aviation Regulation (FAR) part 150, promulgated pursuant to Title I of the Act, may submit a noise compatibility program for FAA approval which sets forth the measures the operator has taken or proposes for the reduction of existing noncompatible uses and for the prevention of the introduction of additional noncompatible uses.

The FAA has completed its review of the noise exposure maps and related descriptions submitted by SEA. The specific maps under consideration are Exhibit 4A and 4B in the submission. The FAA has determined that these maps for Seattle-Tacoma International Airport are in compliance with applicable requirements. This determination is effective on April 15, 1993. FAA's determination on an airport operator's noise exposure maps is limited to the determination that the maps were developed in accordance with the procedures contained in appendix A of FAR part 150. Such determination does not constitute approval of the applicant's data, information or plans, or a commitment to approve a noise compatibility program or to fund the implementation of that program.

If questions arise concerning the precise relationship of specific properties to noise exposure contours depicted on noise exposure maps submitted under section 103 of the Act, it should be noted that the FAA is not involved in any way in determining the relative locations of specific properties with regard to the depicted noise contours, or in interpreting the noise exposure maps to resolve questions concerning, for example, which properties should be covered by the provisions of Section 107 of the Act. These functions are inseparable from the ultimate land use control and planning responsibilities of local government. These local responsibilities are not changed in any way under part 150 or through FAA's review of noise exposure maps. Therefore, the responsibility for the detailed overlaying of noise exposure contours onto the maps depicting properties on the surface rests exclusively with the airport operator which submitted those maps, or with those public agencies and planning agencies with which consultation is required under Section 103 of the Act. The FAA has relied on the certification by the airport operator, under § 150.21 of the FAR part 150, that the statutorily required consultation has been accomplished.

Copies of the noise exposure maps and of the FAA's evaluation of the maps are available for examination at the following locations:

Federal Aviation Administration, Independence Avenue, SW, room 615, Washington, DC.

Federal Aviation Administration, Airports Division, ANM–600, 1601 Lind Avenue, SW., Renton, Washington, 98055–4056.

Seattle-Tacoma International Airport, Seattle, Washington.

Questions may be directed to the individual named above under the heading, FOR FURTHER INFORMATION CONTACT.

Issued in Renton, Washington, April 15, 1993.

David A. Field,

Acting Manager, Airports Division, ANM-600, Northwest Mountain Region.

[FR Doc. 92-9773 Filed 4-26-93; 8:45 am]

BILLING CODE 4910-13-M

Executive Committee of the Aviation Rulemaking Advisory Committee; Meeting

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of meeting.

SUMMARY: The FAA is issuing this notice to advise the public of a meeting of the Executive Committee of the Federal Aviation Administration Aviation Rulemaking Advisory Committee.

DATES: The meeting will be held on May 12, 1993, at 9 a.m. Arrange for oral presentations by May 5, 1993.

ADDRESSES: The meeting will be held at the Loew's L'Enfant Plaza Hotel, 480 L'Enfant Plaza, SW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: Miss Jean Casciano, 800 Independence Avenue, SW., Washington, DC 20591, telephone (202) 267-9683; fax number (202) 267-5075.

SUPPLEMENTARY INFORMATION: Pursuant to section 10(a)(2) of the Federal Advisory Committee Act (Pub. L. 92-463; 5 U.S.C. app. II), notice is hereby given of a meeting of the Executive Committee to be held on May 12, 1993, at the Loew's L'Enfant Plaza Hotel, 480 L'Enfant Plaza, SW., Washington, DC. The agenda will include:

- A discussion of revisions to the proposed working group procedures.
- A discussion of revisions to the committee operating procedures.
- Status reports on issues.

Attendance is open to the interested public but will be limited to the space available. The public must make arrangements by May 5, 1993, to present oral statements at the meeting. The public may present written statements at the meeting. The public may present written statements to the executive committee at any time by providing 20 copies to the Executive Director, or by bringing the copies to him at the meeting. In addition, sign and oral interpretation can be made available at the meeting, as well as an assistive listening device, if requested 10 calendar days before the meeting. Arrangements may be made by contacting the person listed under the heading FOR FURTHER INFORMATION CONTACT.

Issued in Washington, DC, on April 20, 1993.

Chris A. Christia,

Executive Director, Aviation Rulemaking Advisory Committee.

[FR Doc. 93-9774 Filed 4-26-93; 8:45 am]

BILLING CODE 4910-03-M

Intent To Rule on Application Passenger Facility Charge (PFC); Fort Collins-Loveland Municipal Airport, Loveland, CO

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of intent to rule on application.

SUMMARY: The FAA proposes to rule and invites public comment on the application to impose and use a PFC at Fort Collins-Loveland Municipal Airport under the provisions of the Aviation Safety and Capacity Expansion Act of 1990 (Title IX of the Omnibus Budget Reconciliation Act of 1990) (Pub. L. 101-508) and part 158 of the Federal Aviation Regulations (14 CFR part 158).

DATES: Comments must be received on or before May 27, 1993.

ADDRESSES: Comments on this application may be mailed or delivered in triplicate to the FAA at the following address: Alan Wiechmann, Manager, Denver Airport District Office, DEN-ADO, Federal Aviation Administration, 5440 Roslyn, Suite 300; Denver, CO 80216-6026.

In addition, one copy of any comments submitted to the FAA must be mailed or delivered to the Fort Collins—Loveland Municipal Airport, Loveland, Colorado, at the following address: 4824 Earhart Road, Loveland, Colorado 80538.

Air carriers and foreign air carriers must submit copies of written comments previously provided to the Fort Collins-Loveland Municipal Airport, under § 158.23 of part 158.

FOR FURTHER INFORMATION CONTACT: Mr. Chris Schaffer, (303) 286-5525; Denver Airports District Office, DEN-ADO; Federal Aviation Administration; 5440 Roslyn; suite 300; Denver, Colorado 80216-6026. The application may be reviewed in person at this same location.

SUPPLEMENTARY INFORMATION: The FAA proposes to rule and invites public comment on the application to impose and use a PFC at Fort Collin-Loveland Municipal Airport, under the provisions of the Aviation Safety and Capacity Expansion Act of 1990 (Title IX of the Omnibus Budget Reconciliation Act of 1990) (Pub. L. 101-508) and part 158 of the Federal Aviation Regulations (14 CFR part 158).

On April 19, 1993, the FAA determined that the application to impose and use a PFC submitted by the City of Loveland and the City of Fort Collins was substantially complete within the requirements of § 158.25 of part 159. The FAA will approve or disapprove the application, in whole or in part, no later than July 22, 1993.

The following is a brief overview of the application.

Level of the proposed PFC: $3.00

Proposed charge effective date: October 1, 1993

Proposed charge expiration date: May 31, 1996

Total estimated PFC revenue: $207,857.00

Brief description of proposed project: Expand aircraft parking apron; modify taxiway guidance signs; terminal building expansion; construct ARFF building; groove runway 15/33; update airport master plan; rehabilitate aircraft parking apron.

Class or classes of air carriers which the public agency has requested not be required to collect PFCs: None.

Any person may inspect the application is person at the FAA office listed above under FOR FURTHER INFORMATION CONTACT and at the FAA regional Airports office located at: Federal Aviation Administration, Northwest Mountain Region, Airports Division, ANM-600, 1601 Lind Avenue S.W., Suite 540, Renton, WA 98055-4056.

In addition, any person may, upon request, inspect the application, notice and other documents germane to the application in person at the Fort Collins-Loveland Municipal Airport.

Issued in Renton, Washington, on April 19, 1993.

Matthew J. Cavanaugh,

Assistant Manager, Airports Division, Northwest Mountain Region.

[FR Doc. 93-9772 Filed 4-26-93; 8:45 am]

BILLING CODE 4910-13-M

Federal Railroad Administration

[FRA Docket No. H-92-1]

Addendum to the Petition for Waiver for Test Program, National Railroad Passenger Corporation

In accordance with 49 CFR part 211, notice is hereby given that the National Railroad Passenger Corporation

Affidavit of Publication

STATE OF WASHINGTON,
COUNTY OF KING,

APPLE BOUNYARITH being duly sworn, says that he/she is the Principal Clerk of Seattle Times Company, publisher of THE SEATTLE TIMES and representing the SEATTLE POST-INTELLIGENCER, separate daily newspapers, printed and published in Seattle, King County, State of Washington; that they are newspapers of general circulation in said County and State; that they have been approved as legal newspapers by order of the Superior Court of King County; that the annexed,

being a [x] classified advertisement [ ] display advertisement, was published in:

[x] The Seattle Times [ ] Seattle Post-Intelligencer [ ] _____ and

not in supplement thereof, and is a true copy of the notice as it was printed in the regular and entire issue of said paper or papers on the following day or days JULY 11,18,25, 1993

and that said newspaper or newspapers were regularly distributed to its subscribers during all of said period.

LEGAL NOTICE
The Federal Aviation Administration announced its determination that the Noise Exposure Maps submitted by the Port of Seattle, Seattle-Tacoma International Airport under the provisions of Title I of the Aviation Safety and Noise Abatement Act of 1979 (ASNA (Public Law 96-193)) and 14 CFR Part 150 are in compliance with applicable requirements.

The effective date of the FAA's determination of the Seattle-Tacoma International Airport Noise Exposure Maps is April 15, 1993. The FAA has completed its review of the Noise Exposure Maps and related descriptions submitted by the Port of Seattle. The specific maps are Exhibits 4A and 4B submitted to the FAA. The maps and documents are available for public review at the office of the Director of Aviation Planning, Seattle-Tacoma International Airport, Seattle, Washington 98168. Specific inquiries can be made to Sea-Tac Noise Abatement Office at 248-7452 or 248-6863.

This notice is being published three times to give constructive knowledge to all interested parties, and is intended to fulfill the requirements of Section 107 of the ASNA Act and Section 150.21 (F) (2) of the Regulation.

Apple Bounyarith

Subscribed and sworn to before me this TWENTY-SEVEN day of JULY, 1993

Maureen E Duggan

Notary Public in and for the State of Washington residing at SEATTLE

Seattle-Tacoma International Airport
FAR Part 150
Noise Compatibility Program: 1993 Amendments

APPENDIX B

* Technical Review Committee
* Distribution/Mailing List
* April and May Forum Newsletter
* Newspaper Ad
* Meeting Notices and Summaries

TECHNICAL REVIEW COMMITTEE
for
1993 Noise Compatibility Program Amendments
Seattle-Tacoma International Airport

Neil Bennett Director, Western Region Air Transport Association	Carolyn Read Federal Aviation Administration Airport District Office
Mike Oswald Air Line Pilots Association	Tom Davidson Federal Aviation Administration Air Traffic Control Facility
Mr. Michael Knapp City of SeaTac	Mr. Dale Gredler Planner, City of Normandy Park
Mr. Greg Fewins Senior Planner City of Federal Way Dept of Community Development	King County Planning and Community Development Division Community Planning Section
Hans Aschenbach Planner, City of Des Moines	Minnie Braser City of Burien
Dick Erickson Citizen	Len Oebser Citizen
Marian MacKenzie Citizen	Bonnie Browning Citizen
Henry Counter Citizen	Arden Forrey Citizen
Denise Floyd Citizen	Rick Gardner Citizen

Technical Review Committee Distribution List
for
Materials Relating to the
Noise Compatibility Program Udpate

Tom Davidson Sea-Tac Int'l Airport Federal Aviation Administration Seattle Tower/TRACON	Mike Oswald Air Line Pilots Association
Carolyn Read Federal Aviation Administration Airport District Office	Mr. Michael Knapp Planner, City of SeaTac
Hans Aschenbach Planner, City of Des Moines	Marian MacKenzie Citizen
Dick Erickson Citizen	Denise Floyd Citizen
Ryk A. Dunkelberg Barnard Dunkelberg & Co	Mr. Arden Forrey Citizen
Mr. Greg Fewins, Sr Planner City of Federal Way Dept. of Community Development\	Mr. Rick Gardner Citizen
Mr. Dale Gredler Planner, City of Normandy Park	Ms. Minnie Brasher City of Burien
Ms. Bonnie Browning Citizen	Mr. Henry Counter Citizen
Mr. William Hamilton Asst Sec of Aeronautics WSDOT/Aeronautics Division	Mr. Roman Justiss Citizen

Curt Horner Seattle/King County Environmental Health Department	Mr. Neil Bennett Assist Director/ATA
Ms. Moira Bradshaw, Assoc Planner City of Tukwila	Mr. James Harris Planning Director City of Kent
Mr. Henry Sharpe Office for Long-Range Planning City of Seattle	Mr. Steven Boyce King County Plan & Comm. Dev Div. Community Planning Section
Ms. Sue Evans Highline Times	Ms. Kathy Parker Citizen
Mr. Robert Angle Citzen	Mr. James D. Chalupnik Citizen
Mrs. Joe Pompeo Citizen	Mr. Kevin Alexander Citizen
Ms. Margaret Gerdes Citizen	Henry and Sofie Frause Citizens
Ms. Loyce Saar Citizen	Mr. Wes Lacy Citizen
Mr. Steve Nordeen Citizen	Ms. Sally A. Nelson Citizen

c:\word\noise\trc\fulldist.doc\tt

Produced by the Port of Seattle for the neighbors of Seattle-Tacoma International Airport

FORUM

April 1993

Accelerated program will insulate 5,000 homes in four years

The Port of Seattle is moving ahead on plans to insulate 5,000 eligible residences within noise-impacted areas around Sea-Tac Airport.

The Port Commissioners called for the accelerated insulation program when they voted in November to begin detailed environmental studies of the proposed third runway construction, as part of a regional effort to meet the air traffic capacity needs of the Puget Sound area.

To help guide planning for the accelerated program, the Port recently surveyed residents who had received Port insulation, residents who are on the insulation waiting list and those who have not applied for insulation.

A total of 450 interviews were conducted, all by telephone. Respondents were asked about such things as insulation program awareness, effectiveness and satisfaction with results. Eighty-five percent surveyed were satisfied with the results, and 74 percent noticed increased heating and cooling efficiency as a side benefit.

The survey also sought feedback on how the Port can improve communication with residents and how to improve the program's application procedure. Results of the survey and a separate study of program methods and timing are being used to develop the accelerated program.

The study indicated that administration of the program can be streamlined by more standardization of treatments, combining tasks, hiring five more staff members and giving homeowners greater responsibility for requesting meetings and followup regarding insulation of their homes.

Plans so far call for the speeded-up program to start by September. The rate of insulation will increase from 30 to 100 or more per month over a four-year period, in order to reach the goal of 5,000. Plans also call for the insulation to be complete before construction of the third runway.

To request an application form, call the Port's Noise Remedy Office at 431-5913. For details on the program call Earl Munday, Noise Remedy manager, at 431-5915.

Sea-Tac's fleet now 71 percent Stage 3

The Port of Seattle's noise reduction programs have accelerated the conversion of Sea-Tac's fleet to Stage 3 (the quietest) aircraft. The most recent report by airlines shows that 71 percent of the fleet are Stage 3, up about 50 percent since 1990 when Sea-Tac's Noise Mediation Agreement took affect. The national average at other airports is 52 percent.

The conversion was called for in the Sea-Tac Noise Mediation Agreement, which reached its three-year milestone in March. It is a package of short- and long-term measures to reduce aircraft noise at least 50 percent by the year 2001. Among the noise reduction goals is to make Sea-Tac's fleet 100 percent Stage 3 by 2001.

Community center off to a great start

It was a full-house at the grand opening celebration of the new North SeaTac Park Community Center last month. Festivities included children's activities, sports demonstrations, blood pressure checks, and dedication ceremonies in the performance hall (left). Located at 13735 24th Ave. S., the center is a joint venture of the Port, the City of SeaTac and King County. The Port donated $3 million for the center and $3 million for development of the rest of the park. (Photo, Don Wilson)

PSRC resolution calls for new regional airport plus third runway at Sea-Tac

The Puget Sound Regional Council (PSRC), the agency responsible for transportation planning for the region, recently approved a resolution that calls for a major supplemental airport somewhere in the four-county (King, Pierce, Snohomish and Kitsap) area, and a third runway at Sea-Tac Airport, unless environmental studies show a supplemental airport is feasible and would eliminate the need for a third runway at Sea-Tac.

The resolution was passed by the Transportation Policy Board of the PSRC. Together the PSRC and the Port of Seattle sponsored the initial study of the air capacity issue completed in 1992 by the Puget Sound Air Transporation Committee. Results of that study also called for a multiple-airport system including a third runway at Sea-Tac.

The new resolution will be considered by the PSRC Executive Board at meetings April 1 and 8 . The full membership of the PSRC will meet April 29 (see **Calendar** for meeting details) to vote on the final recommendations. If the resolution is approved, the next steps will be to look for a site for the supplemental airport and complete environmental studies of it and the proposed third runway at Sea-Tac.

For details on the PSRC process, call 464-7090.

Amendments to Part 150 proposed

The Port of Seattle will hold an informational open house and hearing May 12 (watch for exact time and location in the May *Forum*) to gather public comments on amendments to Sea-Tac Airport's Part 150 Noise Compatibility Program. This program, composed mainly of the Port's home acquisition and noise insulation programs, was originally approved by the Federal Aviation Administration (FAA) in 1985, and kept Sea-Tac eligible for federal funding of its noise mitigation programs.

The proposed amendments were developed in consultation with a committee of citizens, local city planners, the FAA and airlines. They include actions to strengthen or expand the scope of the insulation program as well as promote land use planning compatible with the Airport. Program boundaries will not be affected by this process.

The draft amendments will be available May 3, by calling Sea-Tac's Noise Hotline at 433-5393. A public comment period will run from May 3 to May 24. Comments should be mailed to: Part 150 Update Project, Noise Abatement Office, Sea-Tac International Airport, P.O. Box 68727, Seattle, WA 98168-0727.

Taxiway upgrade resumes

The Airport's taxiway upgrade project, which began last year, is resuming to enable aircraft to go from the runway to their gates more efficiently. The project occasionally involves noisy breaking up of old concrete after 10:30 p.m., when the portion of the airfield being worked on is closed, but a noise-suppression device has been built to fit over the concrete-breaking equipment. You may also notice construction vehicles entering or exiting the airfield on the south end along Starling Road and on the north end off S. 154th St. The project is scheduled for completion by the fall.

Who's in charge now?

Gary LeTellier, the Port of Seattle's acting managing director of Aviation, left Sea-Tac last month to run the Orlando (Florida) Airport. Directing the Aviation Division until the selection of a new managing director are Bill Brougher, director of the Port's Aviation Facilities and Maintenance Department, and Charles Blood, director of the Port's Aviation Operations Department—both 20-year Port employees. Brougher, who is acting managing director of Aviation, also is vice president of SeaTac *Kiwanis*. Blood is acting deputy director.

Calendar

Port of Seattle Commission	**April 8**, 1 p.m. work sesion **April 13**, 1 p.m., Port of Seattle Commission Chambers, Pier 69 2711 Alaskan Way **April 27**, 1 p.m., Airport auditorium
Puget Sound Regional Council (PSRC) Executive Board's Flight Plan decision meetings	**April 1**, 9 a.m. **April 8**, 10 a.m. Bellevue Conference Center 505 106th Ave. N.E., Bellevue
PSRC Transportation Policy Board	**April 8**, 9 a.m. Bellevue Conference Center
PSRC General Assembly Flight Plan decision meeting	**April 29**, 3 p.m. Seattle Center Flag Pavilion
Southwest King County Chamber of Commerce	**April 9**, 11:30 a.m. Marriott Hotel, 3201 S. 176th St. Tim Hill, King County executive
Burien City Council	**April 12 & 26**, 6 p.m. Southwest District Courthouse 601 S.W. 149th St., Burien
SeaTac City Council	**April 13 & 27**, 6 p.m. Council Chambers, 19215 28th Ave. S.
Part 150 Technical Review Committee	**April 21**, 5:30-7:30 p.m. Aviation large conference room Airport Main Terminal

SEA-TAC AIRPORT FORUM

We welcome your comments on what you read here. Please give us a call.

Co-Editors: Barbara Stewart and Marlys St. Laurent, 433-4604
Noise Remedy Program: 431-5913
Acquisition and Relocation Office: 431-3497
Noise Abatement Office: 248-7452
Sea-Tac Noise Hotline: 433-5393 or 1-800-826-1147
Community Relations Managers: Rosie Courtney, 433-5342
Rachel Garson, 248-6851

Printed on recycled paper

SEA-TAC FORUM
Port of Seattle
Aviation Communications Department
Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168

Port of Seattle Commission
Gary Grant, *President*
Jack Block
Patricia Davis
Paige Miller
Paul Schell

Executive Director
M. R. Dinsmore
Deputy Executive Director
Andrea Riniker
Acting Managing Director, Aviation
Bill Brougher

Bulk Rate
U.S. Postage
PAID
Permit No.
9556
Seattle, WA

Port of Seattle

Published by the Port of Seattle for the neighbors of Seattle-Tacoma International Airport

FORUM

May 1993

PSRC General Assembly to vote on air capacity resolution

At its April 8 meeting, the Executive Board of the Puget Sound Regional Council (PSRC)—the agency responsible for transportation planning for the region—overwhelmingly approved a resolution that calls for a major supplemental airport to be located in the four-county (King, Pierce, Snohomish or Kitsap) area, and a third runway at Sea-Tac Airport, unless environmental and market feasibility studies show a supplemental airport is feasible and would eliminate the need for a third runway at Sea-Tac.

The resolution was passed in March by the PSRC's Transportation Policy Board.

At press time, the full membership of the PSRC was scheduled to meet April 29 to vote on the resolution. If it is approved, the next steps will be to search for a supplemental airport site and complete an environmental assessment of it by April 1996, and complete a site-specific environmental impact study of the proposed third runway at Sea-Tac.

For details on the outcome of the April 29 vote, call the PSRC at 464-7090.

Open house/hearing on proposed Part 150 Program amendments

The Port of Seattle will sponsor an open house and public hearing May 12 (see **Calendar**) regarding proposed amendments to Sea-Tac Airport's Part 150 Noise Compatibility Program (NCP).

The NCP, which was originally approved by the Federal Aviation Administration (FAA) in 1985, kept Sea-Tac eligible for federal funding of its noise mitigation programs. Its main components are the Port's home acquisition, noise insulation and home sales assistance programs.

The proposed amendments have been developed in consultation with a committee of citizens, local city planners, the FAA and airlines. They reflect changes over the past few years, including an accelerated insulation rate for single family homes, expansion of insulation program elements, and better ways to ensure compatible land use planning such as availability of federal funds for city planning processes.

Although the proposed amendments recommend some new program elements, the update was not designed to be an extensive evaluation of new noise reduction measures—which already was accomplished by Sea-Tac's Noise Mediation project. The amendments do not change eligibility criteria for insulation of single family residences, nor do they change the originally established program boundaries. Current amendments are not related to the proposed third runway. A major update of the NCP would be required should the Port go ahead with the runway.

The May 12 open house will be from 5:30 to 7 p.m. Citizens can view exhibits related to the amendments and discuss them with Port Noise Remedy and Noise Abatement staff. At 7 p.m., there will be a short informational presentation by Ryk Dunkleberg of Barnard, Dunkleberg and Company, an aviation consulting firm assisting in this project. The public hearing, to gather comments on the proposed amendments, will be from 7:15 to 9:30 p.m. Citizens will be able to sign up to testify or submit written comments.

The draft amendments will be available to the public on May 3, by calling Sea-Tac's Noise Hotline at 433-5393. They also will be available at the open house.

In addition to the open house and hearing, a public comment period will run from May 3 to May 24. Comments should be mailed to: Part 150 Update Project, Noise Abatement Office, Sea-Tac International Airport, P.O. Box 68727, Seattle, WA 98168-0727.

Safety area at end of Sea-Tac runway to be upgraded this summer

The Port of Seattle will widen the safety area at the north end of Sea-Tac Airport's longest runway beginning early this summer.

The activity will be limited to the north clear zone area near the end of the runway, but residents at the north end of the Airport may be aware of some dust and truck noise.

The purpose of the project is to enlarge the safety area to meet the current size requirements of the Federal Aviation Administration (FAA). A safety area provides a clear area beyond the end of a runway as a safety margin for aircraft during takeoffs and landings.

The project will include placement of about 100,000 cubic yards of fill dirt, construction of retaining walls along the north side of the safety area, installation of storm drainage and planting grass seed.

The dirt will be hauled from an existing stockpile site just across South 154th Street from the end of the runway. It will be loaded onto trucks, hauled back across South 154th to the safety area site, dumped and compacted. The majority of the work will be done during daylight hours, 7 a.m. to 8 p.m. About a third of the work will require the runway to be closed briefly, and that work will be done between 10:30 p.m. and 6 a.m., when there is little aircraft traffic.

The project is expected to be completed by fall. It will widen the safety area, which now has an irregular shape, to a rectangle measuring 500 feet wide and 700 feet long.

For details, contact Michael Cheyne, 431-4049, manager of the project for the Port.

Port of Seattle Fire Department changes staff; serves the community

The Port of Seattle Fire Department, which has mutual aid agreements and shares some training exercises with fire departments in communities surrounding Sea-Tac Airport, recently announced some key personnel changes.

Assistant Chief Ernie Robinson retired from the Port Fire Department in March, after 27 years of service. Robinson also was active as a volunteer for Angle Lake Fire Department, served as an assistant chief of the Angle Lake Fire Department, was a fire commissioner for King County Fire District 24 (Angle Lake) and was active in South End Kiwanis. He learned to be a locksmith in his spare time, and is now working at Stu's Lock Shop in White Center.

Filling the assistant chief's vacancy is Charles Starks, a 13-year veteran of the department. He will be in charge of fire suppression, hazardous materials handling, emergency medical services and emergency planning response—the type of services the Port Fire Department provides surrounding communities because of the mutual aid agreements, according to Fire Chief Rick Smith.

The Port Fire Department also recently promoted Rick Kruckenberg to fill the lieutenant's position and hired a new firefighter, Dayton Hostetler. Hostetler previously was a member of the City of SeaTac Fire Department.

New sky bridge helps passengers using north end of terminal

Sea-Tac's new pedestrian sky bridge between the Main Terminal and the parking garage opened last month, linking the terminal conveniently to the new north end of the garage. The bridge has easy access by elevator, escalator and stairs to the terminal's ticketing and baggage claim levels. This is the Airport's fifth sky bridge.

Noise Hotline

The Airport's 24-hour hotline for reporting aircraft-related noise is 433-5393. The toll-free telephone number for long-distance callers is 1-800-826-1147. The hotine is staffed 8 a.m. to 5 p.m. daily. At other times, callers can leave a message and request that their calls be returned by members of Sea-Tac's Noise Abatement staff.

Complaints to the hotline do not generally result in immediate changes in Airport activity. However, the hotline gives the Port feedback from the community, which can be used in developing new noise abatement programs.

Calendar

Port of Seattle Commission	**May 6**, 1 p.m. work session **May 11**, 1 p.m., Port of Seattle Commission Chambers, Pier 69 2711 Alaskan Way **May 25**, 1 p.m., Airport auditorium
Burien City Council	**May 10 & 24**, 6 p.m. Southwest District Courthouse 601 S.W. 149th St., Burien
SeaTac City Council	**May 11 & 25**, 6 p.m. Council Chambers, 19215 28th Ave. S.
Part 150 Open House & Public Hearing	**May 12**, 5:30-9:30 p.m. Highline Performing Arts Center 401 S. 152 St., Burien
Southwest King County Chamber of Commerce	**May 14**, 11:30 a.m. Sea-Tac Red Lion 18740 Pacific Highway S.

SEA-TAC AIRPORT FORUM

We welcome your comments on what you read here. Please give us a call.

Co-Editors: Barbara Stewart and Marlys St. Laurent, 433-4604
Noise Remedy Program: 431-5913
Acquisition and Relocation Office: 431-3497
Noise Abatement Office: 248-7452
Sea-Tac Noise Hotline: 433-5393 or 1-800-826-1147
Community Relations Managers: Rosie Courtney, 433-5342
Rachel Garson, 248-6851

SEA-TAC FORUM
Port of Seattle
Aviation Communications Department
Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168

Port of Seattle Commission
Gary Grant, *President*
Jack Block
Patricia Davis
Paige Miller
Paul Schell

Executive Director
M. R. Dinsmore
Deputy Executive Director
Andrea Riniker
Acting Managing Director, Aviation
William Brougher

Bulk Rate
U.S. Postage
PAID
Permit No.
9556
Seattle, WA

Port of Seattle

FORM 81 (REV. 7/86)

Affidavit of Publication

STATE OF WASHINGTON,
COUNTY OF KING,

TOM EGAN being duly sworn, says that he/she is the Principal Clerk of Seattle Times Company, publisher of THE SEATTLE TIMES and representing the SEATTLE POST-INTELLIGENCER, separate daily newspapers, printed and published in Seattle, King County, State of Washington; that they are newspapers of general circulation in said County and State; that they have been approved as legal newspapers by order of the Superior Court of King County; that the annexed, being a ☒ classified advertisement ☐ display advertisement, was published in: ☒ The Seattle Times ☐ Seattle Post-Intelligencer ☐ _____ and not in a supplement thereof, and is a true copy of the notice as it was printed in the regular and entire issue of said paper or papers on the following day or days April 25, 1993

_____;

and that said newspaper or newspapers were regularly distributed to its subscribers during all of said period

Notice of Public Hearing
Port of Seattle/Seattle-Tacoma International Airport
FAR Part 150 Noise Compatibility Program

The Seattle-Tacoma International Airport is holding a public hearing and open house on Wednesday, May 12, 1993, at the Highline Performing Arts Center, 401 S. 152nd Street, Burien, Washington. The open house will be from 5:30 to 7 p.m. Public hearing will be from 7:00 to 9:30 p.m. The public is invited to attend and submit written and oral comments on the proposed amendments to the Federal Aviation Regulation Part 150 Noise Compatibility Program for Sea-Tac International Airport. Written comments will be accepted until May 24, 1993. Comments should be mailed to Part 150 Update Project, Noise Abatement Office, Sea-Tac International Airport, P.O. Box 68727, Seattle, WA 98168-0727. For additional information, contact Rob Knott at 248-6863.

Tom Egan

Subscribed and sworn to before me this Twenty-Ninth day of April, 19 93

Maureen E Duggan

Notary Public in and for the State of Washington residing at SEATTLE

Port of Seattle

June 14, 1991

Dear TRC member:

We are looking forward to meeting with you on June 24 at 6 pm when we will be discussing the draft working papers that are enclosed here for your review. The study team will provide a presentation covering the significant information contained in the draft documents. You will have the opportunity to ask questions and offer comments. If you wish, you may take the week following the meeting to review the material further before providing your comments.

A tentative agenda has been developed as noted here:

Introductions

Purpose of the study and committee

Schedule

Presentation on how airport noise is measured and described

Data from Sea-Tac that will be used in the study.

I know that there is a lot of information here for you to digest. Please feel free to call me at 433-5216 if you would like to discuss any aspect of your packet prior to the meeting. Also, remember that a light dinner of sandwiches, beverages and cookies will be provided.

We appreciate your interest and look forward to working closely with you on this project.

Sincerely,

Diane Summerhays

Diane Summerhays
Planning Program Manager

cc: Distribution

0142X

Seattle-Tacoma
International Airport
P.O. Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

PORT OF SEA
MEMORA D

DATE: July 18, 1991

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager DS

SUBJECT: Summary of June 24, 1991, Technical Review Committee meeting

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

June 24, 1991

Port of Seattle
Noise Remedy Office
1410 South 200th Street
Seattle, WA 98188

The following summarizes the significant discussion items of the June 24, 1991 meeting of the Technical Review Committee.

On June 24, 1991, the first meeting of the Technical Review Committee was held from 6:00 pm to 9:00 pm at Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion McKenzie, Dick Erickson, Denise Lloyd, Marge Bakken, and Irene Jones (Ms. Jones is also a commissioner with the State Air Transportation Commission). Others included David Cantey, City of SeaTac; Eric Shields, City of Des Moines; Neil Bennett, Air Transport Association (alternate for John McNamara); Dick Joswick, Federal Aviation Administration (Sea-Tac Tower); Sarah Dalton, Federal Aviation Administration (Airport District Office); Curt Horner, Seattle/King County Environmental Health Department; Mike Oswald, Air Line Pilots Association; Joe Sims, Port of Seattle; Paul Dunholter, technical consultant with Mestre Greve Associates. Diane Summerhays, Port of Seattle, led the discussion.

WORKING DRAFT
FOR DISCUSSION PURPOSES ONLY

After introductions, Diane Summerhays provided background information on the FAA's Part 150 process and the Port's activities in noise mitigation through the Part 150. Because the noise insulation project boundaries are based on year 2000 noise contours, this study will provide information on the current contours as well as future contours for 1995 and the year 2000. She stressed that the public would have opportunities to take part in the study through a 30 day comment period, open houses and a public hearing.

Diane reviewed the committee's purpose and role as described in the working papers provided to committee members. The purpose of this study is to update the contours to include changes in operational statistics since 1985, which may have created new non-compatible land uses. Updated forecasts which resulted from the Mediated Agreement and the Flight Plan study will be included in the study. She also reviewed the agenda and schedule. Finally, Diane asked that comments on the working papers be to her no later than one week after each meeting.

Paul Dunholter, an airport noise consultant with Mestre Greve Associates, reviewed the technical aspects of aircraft noise and noise descriptors including:

- Characteristics of sound and factors influencing human response to sound;
- Characteristics of aircraft noise and definitions of various metrics (dBA, SEL, Ldn);
- Content of Ldn;
- Noise and Land Use evaluation criteria;
- Ways to measure aircraft noise and how that is being accomplished in the 150 update;
- Factors that are part of modeling noise contours.

Bob Wells, Aviation Planner for the Port of Seattle, then described the data that will be used in the Integrated Noise Model for this study. He covered the following items:

- Types of aircraft;
- Number of operations by type of aircraft;
- Time of day of operation;
- Stage length;
- Runway utilization;
- Location of flight tracks;
- Utilization of flight tracks;
- Typical operating procedures at Sea-Tac.

WORKING DRAFT
FOR DISCUSSION PURPOSES ONLY

During the evening, several issues were brought up by committee members and discussed. Some major items are listed below:

- Applicability of FAA land use criteria for local municipalities;
- How to identify nighttime ground noises;
- Calculation of Sound Exposure Level (SEL);
- Placement of noise monitors;
- Noise levels of commuter aircraft;
- Reasoning for forecast of larger aircraft by Puget Sound Air Transportation Committee (PSATC);
- How Noise Monitoring System (NMS) is calibrated;
- How Integrated Noise Model (INM) is verified;
- How to determine weight of cargo flights;
- Variations in flight tracks for use in INM.

Future meetings are scheduled for Tuesday, July 30 and Tuesday, August 20. An additional meeting will likely be scheduled in conjunction with the September open house. All meetings will be held at the Port of Seattle Noise Remedy and Relocation Office from 6 p.m. to 9 p.m.

Please call Diane Summerhays at 433-5216 should you have any questions on the meeting summary or need additional information.

0184X

WORKING DRAFT
FOR DISCUSSION PURPOSES ONLY

Port of Seattle

July 22, 1991

Dear TRC Member:

The Technical Review Committee for the Part 150 contour update will meet Tuesday, July 30 at the following time and location:

Date:	July 30, 1991
Time	6 pm to 9 pm
Location	1410 South 200th

A light meal will be provided.

A tentative agenda has been developed as follows:

Review of political jurisdictions

Explanation of forecast information that will be used for the 1995 and 2000 contours

Preview of draft contours and discussion of implications

Briefing on mobile home issue.

Last month, we felt that by the end of July we would have a draft proposal ready concerning assistance to noise-impacted occupants of mobile homes. While we feel progress has been made on developing a proposal, it is still a bit early to introduce our ideas as a firm action plan. We will, however, discuss the circumstances that require the development of a plan and discuss some of the factors that must be considered.

REMINDER: The August meeting has been rescheduled from Tuesday, August 20 to Wednesday, August 21. Thank you for your cooperation in this rescheduling.

We look forward to seeing you July 30.

Sincerely,

Diane Summerhays

Diane Summerhays
Planning Program Manager

cc: Distribution

0219X

Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

PORT OF SEATTLE

MEMORANDUM

DATE: August 13, 1991

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager

SUBJECT: Summary of the July 30, 1991, Technical Review committee

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

July 30, 1991

Port of Seattle
Noise Remedy Office
1410 South 200th Street
Seattle, WA 98188

The following summarizes the significant discussion items of the July 30, 1991 meeting of the Technical Review Committee.

On June 30, 1991, the second meeting of the Technical Review Committee was held from 6:00 pm to 9:00 pm at Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, John Whitlock, Denise Floyd, Marge Bakken, Professor James D. Chalupnik, and Irene Jones (Ms. Jones is also a commissioner with the State Air Transportation Commission). Others included David Cantey, City of SeaTac; Eric Shields, City of Des Moines; John McNamara, Air Transport Association; Dick Joswick, Federal Aviation Administration (Sea-Tac Tower); Sarah Dalton, Federal Aviation Administration (Airport District Office); Curt Horner, Seattle/King County Environmental Health Department; Mike Oswald, Air Line Pilots Association. Diane Summerhays, Port of Seattle, led the discussion.

Diane gave the committee a brief overview of the agenda for the meeting. The agenda is listed below.

Introductions
Purpose of meeting and upcoming meetings
Review of draft contours
Mobile Home Proposal

After introductions, Diane Summerhays discussed future meetings and their tentative agendas. Bob Wells, Airport Planner, then discussed the 1991 draft contours that had been developed for the committee's review. The committee was provided with a rough copy of draft contours to be used to aid them in the discussion. The committee confirmed with staff that a clearer quality map would be available as the contours are discussed further.

Bob discussed how some aircraft, such as the 747-400, are too new and the noise information that must be input into the INM is not available. Therefore, the Port with agreement by the FAA, will be using an equivilent aircraft type and similar stage length in place of these newer aircraft.

The committee raised a question regarding the use of the fleet mix forecasts that were used to develop the Noise Budget with the fleet mix that was input into the INM. The committee requested that the fleet mix that is used to develop the contours be the same as the fleet mix that is expected to result from the implementation of the Noise Budget.

The next item of committee discussion centered around the use of Ldn to measure the noise levels around the airport area. Some committee members questioned the use of Ldn versus single event noise or some other noise metric that would give a better indication of the noise levels the communities experience. Sara Dalton, FAA, advised the committee that other kinds of noise measurement can be used and that aircraft noise can be measured to 55 Ldn or lower. However, for an airport to be eligible for federal funds under the Part 150 program, Ldn is the only acceptable noise metric that can be used. In addition, the FAA will only fund those areas within the 65 Ldn area. Any measurements outside this area cannot be used by the FAA for granting of federal funds under the Part 150 program.

The committee then discussed how some communities outside the current noise contours feel they have been adversely affected by the implementation of the 4-Post Plan. This discussion led to a request by the committee for information about other major airports that have gone beyond the 65 Ldn contour and have been granted federal funds.

Bob reviewed the contour lines on the map handed out to the committee. He described how the new version of the INM (Version 3) is being used to develop the 1990, 1995, and the year 2000 contours (The 1985 maps used version 2.7). The committee discussed the difference between the two versions and requested that staff develop a way to compare the difference in contours between the two INM versions.

Bob broke down the fleet mix percentage figures for 1990. He noted that the actual 1990 figures are different than projected in the 1985 report partially due to the increase in quieter aircraft and to the increase in the number of total operations. The committee requested that this information be mailed.

The next item on the agenda was a discussion of mobile home residents that live within the 65 Ldn contour. Diane reviewed the various options available, pointing out the "pros and cons." Options discussed included: (1) purchase of avigation easement with money to be provided to residents; (2) purchase of right to use as mobile home park; (3) condemnation. One point of concern was the need for the mobile home residents to know their rights as well as the amount of funds they have coming to them. One suggestion made by the committee was to pay the mobile home resident the equivilent funds that a resident in a single family home would receive for insulation. The FAA was interested in reviewing that option.

The next meeting is scheduled for August 21, 1991 and will be held at the Noise Remedy and Relocation Office at 1410 South 200th Street, from 6 p.m. to 9 p.m.

0184X/tt

Port of Seattle

August 12, 1991

Dear TRC Member:

The Technical Review Committee for the Part 150 contour update will meet Wednesday, August 21, at the following time and location:

Date:	August 21, 1991
Time	6 pm to 9 pm
Location	1410 South 200th

A light meal will be provided.

This meeting will focus again on the 1990 contours and on land use and population analysis. Ryk Dunkelberg of Bernard Dunkelberg and Company will be describing FAA requirements for land use population data and why the study includes these elements as well as what uses are considered compatible. Ryk, in coordination with Paul Dunholter, who presented noise information at our first meeting, is acting as an advisor on this study in the areas of process and land use analysis.

Alf Shepherd from Parametrix, Inc. will provide us with a presentation on how the population and land use analysis is done.

We will also be reviewing the way noise from taxiing aircraft is being calculated and will be providing an update on the mobile home issue.

This meeting will be very full, which means we will not be able to discuss future contours. The future contours, along with the conclusion of the Parametrix work, will be covered at a future meeting.

We look forward to seeing you on August 21. If you have any questions beforehand, please feel free to call me at 433-5216.

Sincerely,

Diane

Diane Summerhays
Planning Program Manager

0219X/tt

Seattle-Tacoma
International Airport
P.O. Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

PORT OF SEATTLE

MEMORANDUM

DATE: September 5, 1991

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager DS

SUBJECT: Summary of the August 21, 1991, Technical Review committee

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

August 21, 1991

Port of Seattle
Noise Remedy Office
1410 South 200th Street
Seattle, WA 98188

The following summarizes the significant discussion items of the August 21, 1991 meeting of the Technical Review Committee.

On August 21, 1991, the third meeting of the Technical Review Committee was held from 6:00 p.m. to 9:00 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, Dick Erickson, John Whitlock, Denise Floyd, Professor James D. Chalupnik, and Irene Jones (Ms. Jones is also a commissioner with the State Air Transportation Commission). One citizen committee member was absent. Others included David Cantey, City of SeaTac; Eric Shields, City of Des Moines; John McNamara, Air Transport Association; Dick Joswick, Federal Aviation Administration (Sea-Tac Tower); Sarah Dalton, Federal Aviation Administration (Airport District Office); Curt Horner, Seattle/King County Environmental Health Department and Mike Oswald, Air Line Pilots Association, were absent from the meeting. Diane Summerhays, Port of Seattle, led the discussion.

Diane gave the committee a brief overview of the agenda for the meeting. The agenda is listed below.

- Introductions
- Purpose of meeting
- Review of taxi noise from Bob Wells, Port of Seattle
- Legal Requirements for a Part 150 study from Ryk Dunkelberg, Barnard Dunkelberg and Company
- Review of draft contours from Alf Shepherd, Parametrix, Inc

A tremendous amount of frustration and confusion was expressed by the audience regarding the use of the noise metric Ldn in the contour study. Some audience members felt that single event noise was more obtrusive and should, therefore, be the metric used in doing this study. Ms. Summerhays explained the legal requirements set forth by the Federal Aviation Administration for airports completing a Part 150 study. Due to the need to continue with the agenda, she suggested that a class be set up with audience members to discuss the legal requirements, Part 150 process, and any other concerns they may have. A date and location will be announced at a later date.

Bob Wells, Port of Seattle Planner, gave an overview of how taxiing noise was determined for use in the contour update. He indicated that several key taxiing locations were used to determine the amount of Ldn noise that taxiing aircraft generated. He also indicated that some information contained in the 1988/89 Coffman study was included in the current Part 150 study.

One member from the audience requested that taxiing noise be determined from the time an aircraft leaves the gate to the time it takes off. He felt this refiguring of noise would give a better "picture" of what the actual noise from taxiing aircraft would be. Mr. Wells explained that since the predetermined formulas were required by the FAA for use in completing the Part 150 study, the Port would be unable to refigure the noise using the suggested method in this study.

Ryk Dunkelberg, a noise consultant from Barnard Dunkelberg and Company, gave the committee an overview of the legal requirements for completing a Part 150 study as well as an overview of the land use compatibility portion of a Part 150 study. This overview was requested by a committee member at a previous meeting.

Mr. Dunkelberg stated that the Part 150 Study is a voluntary noise and land use study that is used by some airports to identify aircraft noise effects on the communities surrounding the airport. By completing an approved Part 150 study, an airport is qualified to receive federal funds from the Federal Aviation Administration (FAA) for use in insulation, relocation, and mitigation programs. However, in order to qualify for federal funds, the airport is required to follow the process set forth by the FAA in the Part 150 regulation.

Ryk stated that the Part 150 contains both procedural and substantive matters. Procedurally, the public must be afforded the opportunity to participate in the process and this participation usually takes the form of a committee. In addition, a public hearing must be held by the airport proprietor. Any forecasts used for development of the contours as well as the newly developed contours must be presented for public input in this public hearing. Ryk advised the audience and committee that the best way to comment on the Part 150 study is to write letters in which concerns are noted for inclusion in the study as well as commenting at the public hearing.

Ryk further described the substantive elements of the Part 150 study. As part of the land use compatibility portion of the study, Ryk discussed the Land Use Table in the draft working papers. This table is a matrix describing recommended land uses for various levels of aircraft noise levels and provides recommendations on means for application of sound attenuation techniques to achieve compatibility where possible.

In using all the components described, Ryk said that a baseline contour can be developed using the following information:

- Determine the number of residents living within the existing 65 Ldn contour;
- Produce a contour based on the best projections for the aircraft mix percentages and the time of day that flights operate;

Once the baseline information is determined, predictions can be made for the future contours. He advised that any enlargement or reduction of the contours will be analyzed extensively.

John Whitlock requests that a contour, reflecting the maximum ANEL for year 2000, be produced for comparison to the projected year 2000 noise contour.

Alf Shepherd, an environmental engineer with Parametrix, Inc., gave the committee an overview of the methodology used in determining the population and land use analysis. This methodology was provided to the committee in working paper form.

0184X/tt

Technical Review Committee
Part 150
Revised Meeting Notification

Meeting Date: October 30, 1991
Meeting Place: Port Of Seattle - Noise Remedy Offices
Maywood School.
Meeting Time: 6:30 pm - 9:00 pm

A light meal will be served for committee members.

The committee will be reviewing the 1990 land use map and the revised forecasts. Information packets will be sent one week in advance.

October 23, 1990

Dear TRC member:

As a reminder, the next TRC meeting will be held Wednesday, October 30, from 6 pm to 9 pm. at the Port's Noise Remedy Offices, 1410 South 200th Street. Mr. Ryk Dunkelberg from Bernard Dunkelberg & Company will remain with the project as our technical expert on Part 150 studies and will also facilitate all further TRC meetings.

Thank you for your patience with our meeting date changes. We were able to complete the 1990 land use and population analysis and to meet with the FAA to discuss some significant issues related to the project. As a result of our discussions with the FAA, the year we will be using for our future noise exposure map will be 1996. Since the last TRC meeting, the project staff has revised the fleet mix forecast from 1995 to 1996 and the information is enclosed. Because forecasting the type of fleet that is likely to operate at Sea-Tac in the future is such an important aspect of the contour developement, we will be reviewing that with you at the meeting. Tentatively, the agenda will be as follows:

1. Review of 1996 and 2000 Fleet Mix Forecast

2. Conclusion of Discussion from the August Meeting on Population and Land Use Analysis

3. Review Remaining Schedule

4. Unscheduled items

In addition, we hope to distribute our proposal for mobile home assistance, which can then be on the agenda for a future meeting and we will discuss any aspects of Dr. Chalupnik's letter to the committee that members wish to raise.

I look forward to meeting with you on the Oct. 30th. A light meal will be served.

Please call me at 433-5216 if you have any questions.

Sincerely,

Diane Summerhays

Diane Summerhays
Planning Program Manager

cc: TRC members

0408X

PORT OF SEATTLE

MEMORANDUM

DATE: November 13, 1991

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager DS

SUBJECT: Summary of the October 30, 1991, Technical Review Committee

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

October 30, 1991

Port of Seattle
Noise Remedy Office
1410 South 200th Street
Seattle, WA. 98188

The following summarizes the significant discussion items of the October 30, 1991 meeting of the Technical Review Committee.

On October 30, 1991, the fourth meeting of the Technical Review Committee was held from 6:00 p.m. to 8:00 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, Dick Erickson, John Whitlock, Professor James D. Chalupnik, Marge Bakken, Arden Forrey, and Irene Jones. Others included David Cantey and Michael Knapp, City of SeaTac; Eric Shields, City of Des Moines; Greg Fewins, City of Federal Way; Dale Gredler, City of Normandy Park; John McNamara, Air Transport Association; Mike Oswald, Air Line Pilots Association; Sarah Dalton and Dick Joswick, FAA; Ryk Dunkelberg, Barnard Dunkelberg & Company; Alf Sheperd, Parametrix; Diane Summerhays, Wayne Bryant, and Bob Wells, Port of Seattle. Curt Horner, Seattle/King County Environmental Health Department and Denise Floyd, citizen, were absent from the meeting. Ryk Dunkelberg from Barnard Dunkelberg & Company, facilitated the meeting.

Diane Summerhays introduced Ryk Dunkelberg, an airport planning consultant from Barnard Dunkelberg and Company and two new members of the committee, Greg Fewins and Dale Gredler.

Ryk gave the committee a brief overview of the agenda for the meeting. The agenda is listed below:

- Introductions
- Aviation Activity Forecast
- Land Use/Contour Maps
- Existing Land Use Analysis
- Schedule
- Other Issues

Ryk started the meeting by recapping that the TRC's goals and objectives are to update the existing Noise Exposure Map, forecast a 1996 Noise Exposure Map and formally document the programs developed through Mediation by amending the Port's existing Noise Compatibility Plan. To avoid confusion, Ryk re-emphasized that we as a committee need to separate this study from others that the Port is currently sponsoring.

Aviation Activity Forecast

A summary of forecasts for aviation activity for the years 1990, 1996 and 2000 was introduced and explained by Ryk. The aviation activity forecasts are one of the most significant aspects of the study because they are the basic building blocks for the noise contour information. For that reason, it is important for the committee to review them thoroughly. A number of sources were used to develop the forecasts: information from the Flight Plan Project, historical data and trends, assumptions developed from the mediated agreement programs and discussions with the airlines.

The committee discussed a number of factors related to the forecast. One important issue was reintroduced by John Whitlock who stressed the importance of comparing the forecast for 1996 and 2000 with the Noise Budget's ANEL for each of those years. Ryk agreed this is important and will be provided by the study team at the next meeting.

Land Use

A primary goal of this study is to develop 1990 and 1996 noise exposure maps. A noise exposure map is a combination of noise contours over a map of noncompatible and noise sensitive land uses. The information provided includes noncompatible residential population and residential acreage that fall within the 65 Ldn contour. For the 1991 Sea-Tac study, population and land use data are based on the 1990 census block data.

Ryk displayed a chart showing generalized land uses within the existing noise contours. These land uses are based on categories of land uses provided by the FAA in the Part 150 regulations. Ryk then discussed the need to delete from the statistics those homes that were insulated as of the end of 1990. These are considered compatible by FAA standards. The FAA representative also mentioned that uses for which an avigation easement have been obtained are also considered compatible.

As a result of this discussion, the committee recommended that buildings with easements be deleted from the counts of noncompatible uses, as well as any other insulated residential structures built in areas where the building code mandates noise insulation.

During the discussion, a committee member expressed the desirability of having field noise measurements in addition to those obtained by the permanent noise monitoring system. He explained that the public would be more willing to accept the results if field measurements are available.

Bob Wells of the Port staff explained that a decision was made for this study to rely on measurements obtained from the permanent noise monitoring system and extensive field measurements taken in 1988 and 1989. He explained that the reason for field measurements is to verify that predicted noise levels assigned by the Integrated Noise Model match those obtained from monitoring of aircraft overflights. Because verification has been made by using the measurements from the permanent noise monitoring system and from field measurements that were taken during the mediation process and the interim noise contour study in 1988/89, it was determined that for this study it is not necessary to do further field verification. Bob pointed out that the FAA does not require that field monitoring be done as part of this study.

Another committee member brought up the mediated agreement with the Port's commitment to consider expanding the noise monitoring system. In the future this may provide monitored information from areas further removed from the airport. TRC members asked that staff provide tables of actual noise measurements compared to information from the Integrated Noise Model and Ryk agreed this would be available at the next meeting.

The next meeting was scheduled for Wednesday December 18, 1991 at 5:00 pm.

0184X/srn

Technical Review Committee
1991 Part 150 Update
Meeting Notification

Meeting Date: December 18, 1991
Meeting Place: Port Of Seattle - Noise Remedy Offices
Maywood School.
Meeting Time: 5:00 pm - 7:30 pm

A light meal will be served for committee members.

There will not be a TRC meeting during the month of November. Informational packets will be sent one week in advance, December 9, 1991.

Port of Seattle

December 9, 1991

Dear TRC Member:

On Wednesday, December 18, we will be holding a TRC meeting at the old Maywood School from 5 until 7:30. We have planned this meeting to provide information which you have specifically requested. Most topics are directly related to noise or to input into the noise model. For that reason, I have asked our noise advisor, Paul Dunholter from Mestre Greve Associates, to provide the presentations and lead the discussions on noise topics.

I am enclosing a revised version of the document Preface and chapters 1 2 and 3. These include comments that have been provided by TRC members. (Chapter 4 on the land use analysis will be provided at the January meeting.) These chapters focus on how to determine noise effects. Chapter 3 in particular explains the type of information that is used in the computer model to develop the contours. You may not want to go over all this information again, but as you look through the chapters, it is important to ask yourselves the following questions:

1. Given the requirements and constraints of a Part 150 study, do I feel the Port has considered all the significant factors that go into determining noise effects?

2. If not, what else should the Port consider?

3. If they have considered some factor but decided not to incorporate it into the study, has their decision been based on a logical reason that I can understand?

The goal of asking these questions is to make sure that we, the Port, are doing our job according to the regulations and in a manner that is understandable to our committee.

With each agenda item, I have indicated the page numbers on which information related to this topic may be found.

1. Forecasts (Chapter 2, pages 27 through 29)

2. Comparison with ANEL (packet enclosure)

3. Development of Flight Tracks (Chapter 3, pages 37 through 41). We will be handing out a larger flight track map of the study area at the meeting.

4. Validation of the INM Model (Chapter 3, pages 33 through 36)

Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

5. Comparison between the INM Models. This is not covered in the document but will be presented at the meeting.

6. 1996 Contours and Land Use Information. Noise contours have been run for 1996, but the land use information is not complete. We will present the contours at the meeting, along with as much of the land use analysis as we have completed.

7. Schedule. We feel that one more meeting on the development of the Noise Exposure Maps is required. I am suggesting January 22. We will then move into the Noise Compatibility Program.

8. Unschedule items.

Thank you very much for your interest in this study. I hope to call everyone before the meeting to touch base and talk about any concerns you may have. Please feel free to contract me at 433-5216.

Sincerely,

Diane Summerhays

Diane Summerhays
Planning Program Manager

0481X

PORT OF SEATTLE

MEMORANDUM

DATE: January 10, 1992

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager

SUBJECT: Summary of December 18, 1991 Technical Review Committee

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

December 18, 1991

Port of Seattle
Noise Remedy Office
1410 South 200th Street
Seattle, WA. 98188

The following summarizes the significant discussion items of the December 18, 1991 meeting of the Technical Review Committee.

On December 18, 1991, the fifth meeting of the Technical Review Committee was held from 5:00 p.m. to 7:30 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, Irene Jones, John Whitlock, Marge Bakken, and Arden Forrey. Others included Michael Knapp, City of SeaTac; Eric Shields, City of Des Moines; Mike Oswald, Air Line Pilots Association; Sarah Dalton and Dick Joswick, FAA; Ryk Dunkelberg, Barnard Dunkelberg & Company; Paul Dunholter, Mestre Greve Associates; Diane Summerhays, Wayne Bryant, Earl Munday, and Bob Wells, Port of Seattle. Minnie O. Brasher and Jake Stampalia, citizens representing CASE were in attendance. Curt Horner, Seattle/King County Environmental Health Department and Denise Floyd, citizen, were absent from the meeting. Ryk Dunkelberg from Barnard Dunkelberg & Company, facilitated the meeting.

INTRODUCTION

Diane Summerhays welcomed the committee and explained that she had tried to get in touch with all committee members prior to the meeting to discuss the project. She asked members if there were any topics they want covered in more depth. She received comments and requests for additional information on the forecasting, the significance of the year 2000 contours and how the third runway affects the Part 150 update.

Diane then introduced Paul Dunholter of Mestre Greve Associates. Paul was the noise consultant to the Mediation Committee. He is assisting in the contour update by advising the Port on the inclusion of the mediated programs into the study and by providing the TRC with information on the Part 150 process as it pertains to noise analysis. He is not conducting any of the analysis himself, nor is he certifying the Port staff's work. Diane explained that this meeting was designed to provide the committee with answers to a number of technical questions they has posed related to the Part 150 process. To provide an expert's perspective, Diane invited Paul to present information on a number of noise topics.

Ryk then gave the committee a brief overview of the agenda for the meeting. The agenda is listed below:

- Introductions
- Forecasts
- ANEL
- Flight Tracks
- Model Validation
- Model Comparison
- 1996 Contours

FORECASTS

Ryk started the meeting by recapping the project goals and objectives, which are to develop a noise exposure map for existing conditions, make the most reasonable five year forecast of noise exposure to areas around Sea-Tac International Airport, and to formally document the programs developed through Mediation by amending the Port's exiting Noise Compatibility Plan (NCP). This work is necessary to establish a basis for continued FAA funding of the Sea-Tac NCP.

Diane Summerhays then presented the forecasts that had been modified from the last draft version. She pointed out that the daily operational figure was based on 365 days per year instead of the 323 day figure that is sometimes used in planning studies and was used originally to calculate the daily operational numbers. She also indicated that some

747s and DC 8s are now in the Stage 2 column in correction of a previous oversight. Hush kitted aircraft had also been added to the forecast. These modifications did not change the overall annual operational figures, which remain consistent with the Flight Plan Project. Diane pointed out that the FAA had reviewed the forecasts and found them to be reasonable.

As a result of a discussion of the 1985 forecasting effort, which predicted fewer aircraft operations for 1990 than occurred, a question was asked by a committee member if there is any legal ramifications for the Port if the forecasted operations are exceeded. Ryk responded that there is no legal requirement to meet these forecasts, however, in order to continue to be eligible for FAA funding, the Port must adhere to the requirement to update the noise exposure maps each five years or when operational changes indicate a likely change to the noise contours. Sara Dalton of the FAA responded that the requirement to redo the contours depends on a 1.5 dB change in the Ldn noise exposure. A 15% change in operations is generally considered to be the threshold number that indicates this may be occurring and thus that the contours should be updated. As a result of this discussion, the committee recommended the following:

*Each year, the Port in its annual Noise Abatement Office report will present a comparison of the actual operations for that year to those forecasted to generate the future noise exposure map. If in any year the total operations are 15% greater than those predicted for 1996, a Ldn evaluation will be done to determine if there has been a 1.5 dB increase. If such as increase occurs, then the noise exposure maps will be updated.

2000 CONTOURS

Ryk stated that there appeared to be some confusion about why the study is producing the year 2000 contours and what significance these contours have. Ryk said that the year 2000 contours are not required for the study and are, in fact, not part of the study. They are being produced for the committee at their request for information only. The confusion about the significance of the 2000 contours relates to the fact that in 1985 the Port of Seattle used its predicted 2000 year noise contours as a guideline in establishing the boundaries to the Noise Remedy Program. At this point, the Port has no plans to change these boundaries or to drop anyone out of the program if their residence falls outside of the 65 Ldn

contour. (The FAA will not fund any work outside 65 Ldn.) The Port was asked if this was an explicit Port Commission policy. Diane responded that it was not specifically stated as a policy.

ANEL

As a check on the reasonableness of the forecasted operations for 1996 and 2000, Committee members had requested that the Port convert the forecast numbers to ANEL (Airport Noise Exposure Levels) as required in the Sea-Tac Noise Budget for 1996 and 2000. Port staff, with assistance from Mestre Greve Associates, performed the analysis. Paul Dunholter provided background to the Committee on ANEL and the Noise Budget. He also discussed the analysis and indicated that the ANELs developed from the forecasts are sufficiently close to the required ANEL to show compatibility. The Committee members were provided with the ANEL data.

MODEL COMPARISON

At a previous meeting, the committee had requested that information be provided on the differences between the INM model, version 2.7, that had been used in the 1985 study and INM model, version 3.9, that is being used for this update. Paul Dunholter provided the information. The three main differences are :

More accurate modeling of aircraft departure profile, thrust and velocity;

The inclusion of more details on aircraft types;

Modifications to the model calculations related to ground attenuation.

These modifications tend to result in the 3.9 version producing contours that are considered more accurate and are somewhat narrower than those produced by version 2.7.

FLIGHT TRACKS

Paul presented general information on how flight tracks are identified for a Part 150 study. He pointed out that the use of flight track monitoring systems that use ARTS III data, such as Sea-Tac's system, make

identification of tracks much more precise than at those airports without these systems. Flight Tracks are grouped and consolidated from the actual flight track plots obtained from the FAA. Aircraft types are assigned to each track. Port staff developed over 90 tracks that have been divided into jets and props and which are documented in terms of percentages using each track. Sara Dalton requested that the percentage assigned to each track be provided to the committee and included in the report.

MODEL VALIDATION

This topic had been covered at previous meetings, but to clarify the purpose of field monitoring, Paul Dunholter discussed the need to compare actual noise measurements to those predicted by the INM to assess the validity of the model. Sea-Tac has 11 permanent noise monitors and the data from this system was used for the validation for this study. Paul reviewed the data collected by Port staff that showed the comparison. He also explained the extensive field monitoring that was done in 1989/90 for the Mediation Project in order to validate and calibrate the model.

OTHER ISSUES

Several other issues were discussed. A question was raised about how the proposed dependent runway would affect this study. Ryk stated that it would have no affect on this study. He pointed out that if the Port made a formal decision to go ahead and build the runway, another update to the noise exposure maps would be required.

A question concerning the possible value of noise berms was raised. Committee members that had been active in mediation explained that the issue was studies in mediation and it was determined that they would not offer much noise control value.

NEXT MEETING

The next meeting was scheduled for JANUARY 22, 1992 AT 5:00 PM.

MEETING ADJOURNED

Undiscussed topics will be scheduled for the January meeting.

0184X/srn

Technical Review Committee
1991 Part 150 Update
Meeting Notification

Meeting Date: January 22, 1992
Meeting Place: Port Of Seattle - Noise Remedy Offices
Maywood School
Meeting Time: 5:00 pm - 7:30 pm

A light meal will be served for committee members.

Tentative Agenda

1. 1996 Noise Exposure Map, Land Use and Population Analysis
2. Comparison of existing and future (1996) NEMs
3. Schedule

PORT OF SEATTLE

MEMORANDUM

DATE: February 4, 1992

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager DS

SUBJECT: Technical Review Committee, Part 150 1996 Update
Summary of Meeting, January 22, 1992

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

The following summarizes the significant discussion items of the January 22, 1992 meeting of the Technical Review Committee.

On January 22, 1992, the sixth meeting of the Technical Review Committee was held from 5:00 p.m. to 6:30 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, Irene Jones, Denise Floyd, John Whitlock, Marge Bakken, Dick Erickson, and Arden Forrey. Others included Michael Knapp, City of SeaTac; Eric Shields, City of Des Moines; Greg Fewins, City of Federal Way; Sarah Dalton and Dick Joswick, FAA; Ryk Dunkelberg, Barnard Dunkelberg & Company; Diane Summerhays, Robert Knott, Stephanie Shadle, Earl Munday, and Bob Wells, Port of Seattle. Ryk Dunkelberg from Barnard Dunkelberg & Company facilitated the meeting.

Ryk Dunkelberg opened the meeting at 5:00 pm. .He began by explaining that the meeting agenda would be modified due to a recent discovery of inconsistencies in the population and land use information. Parametrix, Inc. is in the process of reevaluating the information and it will be available for the next meeting. Because of this problem, population and land use figures were not discussed.

1. 1996 Contours. Ryk referred to the 1996 Noise Exposure Map by recapping that it was based on the forecasted operational data for Sea-Tac and additional information presented in the working papers. Ryk noted that the 1996 contours are smaller than the 1991 ones. This is due to the Port's Nighttime Limitation Program and increased use of Stage 3 aircraft. He added that the flight tracks for 1996 are predicted to be the same as those for 1991 with relatively few exceptions: An anticipated

shift in runway use will affect the amount of utilization of some tracks. In addition, two new flight tracks will be added to the 1996 flight track input but will not change the contours. These will result from anticipated implementation of a microwave landing system (MLS) demonstration project.

At this point, Sarah Dalton from the FAA informed the committee that a draft Environmental Assessment (EA) is due to be release by the FAA and will be sent to all members. In this project, the FAA will be implementing two MLS procedures that are explained in the document. Increased operational efficiency and delay reduction will be the primary benefits of this phase of the MLS use. Noise abatement procedures can be designed as more MLS capabilities are available. Although the procedures will create two new flight tracks, Sarah said that there will not be a significant impact on noise due to the limited number of operations and the type of airplanes (all turboprop) that are equipped to use the MLS system.

Year 2000 Contours.

The 2000 contours were developed in response to requests by the TRC. They show that Sea-Tac's contours will continue to decrease in size. Ryk stated that these contours have no relevance to the current study. He reminded the committee that the FAA requires a future noise exposure map indicating conditions five years into the future. Because the current study is for 1991, the future map has been developed for 1996.

Ryk reviewed the significance of the 2000 contours developed in 1985, as this has caused some confusion. In 1985, when the original Noise Compatibility Program for Sea-Tac was approved by the FAA, program boundaries for the insulation and acquisition programs were set. These boundaries were, in part, based on predictions of what the year 2000 contours would be. These program boundaries still exist and there are no plans to change them at this time. All airports that have an insulation program must limit the area eligible for insulation so that they can finish the work in a reasonable time period. Sea-Tac's method enabled the Port to identify approximately 10,000 homes close to the airport that could receive insulation within a certain time period. Committee members asked a number of questions about the criteria used to establish the insulation program boundaries. The question was again asked about the Port's policy on how residences would be treated that are in the program boundaries but which may at some time fall outside the area that the FAA will fund for insulation (within 65 LDN). Ryk responded that the policy question has been brought up to the Port Commission and airport management and is under consideration.

SEA-TAC PART 150 UPDATE
TECHNICAL REVIEW COMMITTEE
MEETING SUMMARY FOR JAN. 22, 1992

Unscheduled Items.

Eric Shields, Director of Planning from the City of Des Moines, posed a question to Ryk Dunkelberg about the direction the TRC group was suppose to take and actions that are expected from the group. The response was that the TRC provides a dialog among the various parties concerned with aircraft noise in areas surrounding the airport: FAA, airlines, Port, private citizens and the public entities surrounding the airport. Ryk pointed out that in the December agenda packet, Diane outlined some specific actions expected by the committee that indicate its role as overseer of the project. It is very important that members of the committee, whether from the aviation industry, planning jurisdictions or private citizens, feel that their concerns have been satisfactorily addressed and that the project work is understandable and credible. In specific response to Eric's question about the planners' involvement, Ryk discussed the assistance provided by them in defining land uses and then in working towards regulations or guidelines for compatible development.

Greg Fewins from the City of Federal Way asked why the TRC is not looking at Ldn contours of 50 - 60. Ryk responded by reminding the committee that the FAA will only fund noise abatement and mitigation programs up to the 65 Ldn contour. The federal government's guidelines on compatible land use, however, are not statutory. Communities may enact their own land use compatibility regulations or guidelines and should they go beyond the 65 Ldn, there may be some possibility for acquiring FAA funding. Ryk provided examples in which airports did studies below 65 Ldn and found that other noise sources, such as traffic and other urban noise, became major factors in the study. The FAA only considers the contribution of airport noise when providing funding for noise mitigation.

Another question was raised about how the third runway proposal by the PSATC (Puget Sound Air Transportation Committee) would affect the 1991 Part 150 Update. Because it is just a proposal at this time, Ryk said it would not affect the study. If and when the Port Commission decides to go ahead with building a runway, then the noise exposure maps would need to be updated again to reflect the change.

John Whitlock asked if the 1991 Part 150 Update uses statistical population weighting. This is sometimes done to identify impacted population as only a percent predicted to be annoyed. Ryk responded that all people within the contour area that do not live in insulated homes have been counted.

Ryk Dunkelberg volunteered to make himself available to discuss the Part 150 process and this project with any individual or jurisdiction.

SEA-TAC PART 150 UPDATE
TECHNICAL REVIEW COMMITTEE
MEETING SUMMARY FOR JAN. 22, 1992

Schedule.

The tentative date and time for the next meeting is Wednesday, February 26, 1992 from 5:00 through 7:00 pm. This date will be confirmed by mail by February 14, 1992.

0184X/srn

Technical Review Committee
1991 Part 150 Update
Meeting Notification

Meeting Date: February 26, 1992
Meeting Place: Port of Seattle - Noise Remedy Offices
Maywood School
Meeting Time: 5:00 pm - 7:30 pm

A light meal will be served for committee members.

A packet and agenda will be mailed to you next week.

Special Note: The FAA will brief the Sea-Tac Noise Abatement Committee (SNAC) on its draft environmental assessment (DEA) for the new Microwave Landing System (MLS) demonstration program. The meeting to be held on February 20, 1992 in the Auditorium at the Sea-Tac Airport Mezzanine level from 6:00 pm through 7:30 pm.
Please attend if you are interested.

TRC9202.PM4

Technical Review Committee
1991 Part 150 Update
Meeting Notification
*** Location Change ***

Meeting Date: February 26, 1992
Meeting Place: Port of Seattle - Sea-Tac Airport Auditorium, Mezzanine Level
Meeting Time: 5:00 pm - 7:30 pm

A light meal will be served for committee members.

Special Note: At a separate meeting on February 20, 1992, the FAA will brief the Sea-Tac Noise Abatement Committee (SNAC) on its draft environmental assessment (DEA) for the new Microwave Landing System (MLS) demonstration program. The meeting will be held in the Auditorium at the Sea-Tac Airport, Mezzanine level from 6:00 pm through 7:30 pm. Please attend if you are interested.

Port of Seattle

February 19, 1992

Dear TRC member:

For the February 26th meeting, we will present the updated population and land use data for both the 1991 and 1996 noise exposure maps (a new version of Chapter 4 is included here with the revised information). We will then begin Phase 2 of this project, the Noise Compatibility Program amendments. In preparation for this discussion, I have included a draft of the amendments that originated in the Noise Mediation Project. For background, I have also included one of our "Sound Information" fact sheets on Noise Mediation. The following is the tentative agenda:

Updated population and land use data for the noise exposure maps;

Comparison between 1991 and 1996 maps;

Explanation of Phase 2 of this project: Noise Compatibility Program amendments;

Review of the Noise Mediation Project;

Explanation of the Noise Compatibility Program amendments from the Noise Mediation Project

Schedule

If there is anything you would like covered on the agenda, please feel free to call me at 433-5216.

I look forward to seeing you on February 26. A light meal will be served.

Sincerely,

Diane Summerhays

Diane Summerhays
Planning Program Manager

cc: TRC members

0408X

Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

PORT OF SEATTLE

MEMORANDUM

DATE: April 24, 1992

TO: Distribution

FROM: Diane Summerhays, Planning Program Manger

SUBJECT: Technical Review Committee, Part 150 1996 Update Summary of Meeting, February 26, 1992

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

The following summarizes the significant discussion items of the February 26, 1992 meeting of the Technical Review Committee.

On February 26, 1992, the seventh meeting of the Technical Review Committee was held from 5:00 p.m. to 7:20 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, Irene Jones, Denise Floyd, John Whitlock, Dick Erickson, and Arden Forrey. Others included Michael Knapp, City of SeaTac; Dale Gredler, City of Normandy Park; Eric Shields, City of Des Moines; Greg Fewins, City of Federal Way; Sarah Dalton and Dick Joswick, FAA; Mike Oswald, Air Line Pilots Association; Curt Horner, Seattle/King County Environmental Health Department; Ryk Dunkelberg, Barnard Dunkelberg & Company; Diane Summerhays, Wayne Bryant, Robert Knott, Stephanie Shadle, Earl Munday, and Bob Wells, Port of Seattle. Ryk Dunkelberg from Barnard Dunkelberg & Company facilitated the meeting.

Land Use

Ryk Dunkelberg opened the meeting at 5:00 pm. A discussion of land uses in the 1991 and 1996 noise exposure maps were first on the agenda. Ryk briefly discussed the information found in Tables 4A and 4B of the draft document. The land use figures was reviewed with the planners in each neighboring jurisdiction. An overhead showing the planners and their jurisdictions was presented and reviewed by Ryk.

The committee expressed a wish that the Port contact the jurisdictions within the contour areas and discuss development of policies to ensure sound insulation and compatibility planning. Ryk mentioned that such action was planned for the second part of the project.

Open House for Part 150 Update.

Ryk announced that the Open House for public review of the noise exposure maps and document was planned for April 8, 1992. It will be held at the Tyee High School, 4424 South 188th, in Seattle. The time will be from 3:30 to 8:00 pm. The draft document will be available to the public one week in advance of the meeting. The comment period for written comments will extend through April 15, 1992. After review of the public comments, staff will make any necessary modifications to the document and maps and submit them to the FAA for acceptance. It is anticipated this will occur at the beginning of May.

Explanation of Noise Compatibility Program Phase

As the maps are being prepared for submission to the FAA, the project staff and the TRC will proceed with Part II of the update. The second phase of the Part 150 update will involve formal documentation of the amendments to the Sea-Tac Part 150 Noise Compatibility Program that resulted from the Noise Mediation Project. As background information for the committee, Ryk reviewed the Noise Mediation Project in which his firm acted as part of the technical consulting team.

Ryk explained that there were several items in the Noise Mediation Agreement that modified programs contained in Sea-Tac's noise insulation program. The Port is therefore required by the FAA to formally document them in a Part 150 submittal amending the original program. Earl Munday, the manager of both the Acquisition Program and the Noise Remedy Program, provided the committee with a review of the modifications that would go into the amendments to the Noise Compatibility Program.

These include the following:

1. Changing the "cost share" area of the insulation program to 100% Port-paid. People living in this program area are now eligible for a standard insulation package that is paid for by the Port of Seattle.

2. Public Buildings - A number of buildings around the airport are considered compatible only if treated for sound reduction. At this time, many types of buildings are not eligible for federal funding. The Port will recommend that a demonstration program be developed and implemented to determine the feasibility and cost of addressing many types of public buildings. As a first step in implementing the proposal, a recommendation will be put into the Part 150 amendments to classify facilities such as churches, public and private schools, nursing homes, day care centers, auditoriums, concert halls, hospitals, government services, libraries and other public areas in buildings eligible for FAA funding for sound insulation. A similar proposal related to multi-family residences will also be included.

3. Mobile Homes. The Noise Mediation Project recommended that the Port continue to look for ways to provide noise reduction to residents of mobile home parks, as no new methods were found through that project. Port staff has developed a proposal and asked for a subcommittee to review it and offer suggestions. Committee members interested in being on the subcommittee were invited to provide their names to Steve Nordeen.

4. Special Purchase Option. If a home is immediately adjacent to Port-owned property and the homeowner has owned his/her home for more than five years, the homeowner has the option of selling the home to the Port at a purchase price based on fair market value. The Port will then insulate the home, if possible, and offer it for resale. This modification to the program was part of the mediated agreement.

5. Regular Transaction Assistance (TA). As originally documented in the 1985 NCP, homeowners within certain program boundaries are eligible for assistance from the Port in selling their homes. A refinement to this program has been added: If the home is not adjacent to Port property and is in the Transaction Assistance eligibility area, the homeowner is not eligible to apply for TA until his home has been insulated through the normal Port process. This criteria was developed to ensure that the home sale supported by FAA and Port funding is an airport noise-compatible structure. This procedure was developed through the original Port insulation demonstration project and has been Port procedure since the regular program was instituted.

6. Measure M-4 Easement Acquisition. In keeping with other modifications, this measure has been changed to specifically delete the references to churches so that the scope may be broadened to include the fuller range of public buildings, multi-family residences and mobile home park owner or owner/occupant of property on which a mobile home is placed.

An option available to owners of public buildings and multi-family residences is the purchase of their avigation easement. This action leaves the owner with the option of using the money to provide sound insulation to his building quicker than might be expected if he waited to go through the Port's program.

Committee members offered a number of comments and questions following Earls' presentation. Some highlights include:

Should the Port consider spraying concrete as a trial method to reduce aircraft noise in mobile homes?

The sales assistance program as written in the 1985 study appears unworkable and consideration should be given to modify the wording to more accurately explain how it actually works.

A committee member agreed that the language in avigation easements should be expanded to cover different types of public buildings.

A committee member endorsed the proposal to revise the pamphlet "Jet Aircraft Noise an You."

Emphasis was given to the idea that the Port needs to look at ways to increase the money for the Noise Remedy Program.

RECOMMENDATION FROM THE COMMITTEE

The committee voted unanimously to recommend to the Port Commissioners that:

"The boundaries used to insulate and purchase homes should stay at least as large as what they were in the 1985 study. The TRC committee does not recommend that the Port modify the boundaries for the Noise Remedy Program to newer study contours."

Questions from the Audience

Due to the high level of interest and concern from the audience, it was decided that the regular committee would adjourn and the project staff and any committee members who wished to remain would take part in a question-and-answer session. A number of issues were covered, including historical information on past studies, the relationship of other Port projects to the contours, discussion of federal laws, including ASNA and the Airport Noise and Capacity Act of 1990, increasing money and timeline for the Noise Remedy Program, etc.

Meeting Adjourned

0184X/srn

Technical Review Committee
1991 Part 150 Update
Meeting Notification

Meeting Date: April 29, 1992
Meeting Place: Port Of Seattle - Noise Remedy Offices
Maywood School
1410 South 200th Street
Seattle
Meeting Time: 5:00 pm - 7:30 pm

A light meal will be served for committee members.

Tentative Agenda:

5:00 pm Introductions

5:05 pm 1. Review of the Open House and Comments Received

5:20 pm 2. Mobile Home Proposal

6:00 pm 3. Emerging Issues and How They Will be Incorporated
Public Buildings, Including Schools
Program Boundaries

6:40 pm 4. Other Issues?

7:00 pm 5. Process and Timeline

7:15 pm 6. Unscheduled Items

7:30 pm 7. Public Comment

PORT OF SEATTLE

MEMORANDUM

DATE: June 11, 1992

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager

SUBJECT: Technical Review Committee, Part 150 1996 Update, Summary of Meeting, April 29, 1992

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

The following summarizes the significant discussion items of the April 29, 1992 meeting of the Technical Review Committee.

On April 29, 1992, the eighth meeting of the Technical Review Committee was held from 5:00 p.m. to 7:40 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marion MacKenzie, Marjorie Bakken, Irene Jones, Denise Floyd, Dick Erickson, and Arden Forrey. Others included Michael Knapp, City of SeaTac; Dale Gredler, City of Normandy Park; Eric Shields, City of Des Moines; Greg Fewins, City of Federal Way; Sarah Dalton and Dick Joswick, FAA; John McNamara, Air Transport Association; Mike Oswald, Air Line Pilots Association; Ryk Dunkelberg, Barnard Dunkelberg & Company; Diane Summerhays, Wayne Bryant, Robert Knott, Stephanie Shadle, Steve Nordeen, Earl Munday, Jim Serrill and Bob Wells, Port of Seattle. Ryk Dunkelberg from Barnard Dunkelberg & Company facilitated the meeting.

Ryk Dunkelberg opened the meeting and briefly updated the committee on the process for submitting the noise exposure maps (NEMs) to the FAA. The Port will be submitting the NEMs mid-to late May. The Technical Review Committee will not be meeting as often in the next few months so that a number of tasks can be completed in support of map submission and the amendment process for the Noise Compatibility Plan. The Project Staff will send monthly status report to all committee members.

REVIEW OPEN HOUSE AND PUBLIC COMMENTS

The open house to review the draft NEMs was held on April 8, 1992. Approximately 100 people attended. The public comment period was originally set to last one week to April 15 but was extended to April 27, 1992. Twenty groups or individuals responded with comments ranging from very specific to the project documents and process to a range of opinions and concerns on other projects, legislation, past activities related to Sea-Tac's Noise Compatibility Program, etc. Because of the varying subject matter contained in the comments, the Port has scheduled responses first to those directly related to the project documents. Project staff will then go back and answer the related and miscellaneous questions and comments. All written comments were provided to each committee member for review and responses will be provided when available. Ryk and Diane told the committee to let them know if there is any subject brought up in the letters that the committee would like to revisit.

As a result of the public comments, certain topics will receive additional study consideration. These include run-up noise and noise from the proposed SASA project. Additional taxiing noise information will be included with the SASA information. In addition, several issues will be clarified in the document prior to submittal of the study to the FAA.

MOBILE HOME RECOMMENDATIONS.

As decided at the previous TRC meeting, in the interim between meetings, a subcommittee met to develop a draft proposal related to mobile homes. Earl Munday presented the proposal along with the background on the issue. The Port had previously worked with a committee of mobile home owners, cities, county and state. The committee was primarily concerned with the welfare of residents of parks that may be closed due to land use changes and new development. The topic of concern to TRC is strictly related to noise and must focus on what kind of program can be developed that will make the mobile homes compatible with the airport environs. The Port has sought over the years to deal with the fact that mobile homes are a noncompatible use in certain noise impacted areas and that insulation has thus far not been a feasible option.

Earl reviewed the work of the Port and the subcommittee and mentioned a number of ideas that have been explored. Although it has been found that insulating mobile homes effectively is not feasible, the Port will continue to monitor developments in this area. For example, Sarasota Airport is conducting a demonstration project on mobile home insulation and it may be possible that the very newest mobile homes may in fact have much better noise attenuation features. If insulation becomes a viable option, it will be the first choice for treatment of mobile homes.

Other alternatives that have been evaluated and discarded include condemnation, programs that would be defined as forcing the park owners to close their parks, purchasing avigation easements from the park owners with some agreement to provide the money to the residents; building a new mobile home park outside the 65 noise contour area. The proposed recommendation is attached. Earl mentioned that the Port would continue to look for additional ideas for assisting mobile home residents, but that this set of proposals was the best that can be developed at this time.

There was then a discussion of how the various jurisdictions deal with the mobile home land use. The City of SeaTac discussed its new policies requiring a park owner to develope a relocation plan prior to closing a park. There was some discussion of the possibility of other cities adopting similar policies. Committee members requested that more time be made available to consider the proposal for inclusion in the Part 150 study and to meet with the cities to see if any additional ideas can be generated. It was agreed that a subcommittee will meet again. The Port will contact the interested parties and set up the meeting.

EMERGING ISSUES

Ryk Dunkelberg discussed several issues of concern to the committee and how they would be treated in the study. These issues include how to incorporate public buildings and how the issue of changing boundaries will be treated.

Earl Munday then reviewed the work of the Public Buildings Committee. In 1986, the Port asked the FAA to approve funds on a demonstration project. The FAA approved the project and a committee was formed in 1988. The committee identified the public buildings within the Noise Remedy Boundary area (about 100 buildings) and developed criteria for which ones to select for an insulation demonstration project. In the process, they discovered that only public schools and hospitals are automatically eligible for FAA funding for insulation. Any other buildings must be part of an approved Part 150 plan to receive federal funding. The committee decided to seek that approval by including a proposal for insulation of a number of different types of buildings in the update to the Noise Compatibility Program. In the meantime, the committee selected two churches that agreed to sell their avigation easements and use the money to insulate. The committee was planning on regrouping to begin prioritizing public buildings once the Part 150 amendments were approved. In the meantime, the issue of public schools began receiving much more public attention and it now appears that it may be separated from the larger list of public buildings.

Earl also explained that the Port at this time is only authorized to use federal funds in insulating single family units or buildings with up to four single family units. To consider multifamily dwellings for insulation, the same process of including them in the Part 150 must be performed. For this reason, a proposal related to insulating multifamily dwellings will also be submitted in the amended Part 150 program.

Ryk then proceeded by asking how funds should be allocated for all these different elements of the insulation program. The committee agreed that there needed to be some way to factor these other buildings into a program that up to now has been solely residential. There was a discussion on the options for providing money and how to create an allocation method. Forming a subcommittee was suggested to handle this issue but no agreement was reached. There was a strong desire to have local jurisdictions, additional community representatives and the Public Buildings Committee take part in the discussions concerning this subject.

A number of concerns and questions about availability of funding, history of the program, funding options, how much has been spent to-date, etc. were raised. In addition, there were a number of comments on how the committee might go about developing an allocation mechanism. The committee recommended that an issue paper be developed that would address these questions prior to deciding how to move forward on the question of allocating funds. The paper would contain information as requested and a preliminary staff recommendation on how to proceed with addressing the question.

A final comment was made regarding the new city of Burien. The committee asked that the Project Staff make sure that when the city of Burien is formed that they are represented on all the committees and subcommittees.

In regard to the program boundaries, Ryk stated that the amendments to the Noise Compatibility Program would contain a recommendation that the FAA continue to fund those areas outside the 65 Ldn that are within the program boundaries. Because it is impossible to tell if the contour changes on the sideline have been caused by noise reduction or by the model, this recommendation seemed fair and a necessary first step in resolving this issue. Ryk stated that this does not mean that sometime in the future the boundaries will not be reconsidered.

TO-DO LIST.

As stated earlier, Ryk told the committee that there is a need to accomplish a number of tasks that will not require that the entire committee meet together for some time. The exception would be if the additional noise data on run-ups and SASA show a change in the

contours. If not, the committee will likely not meet before July or August. The following is a "to-do" list for the next few months:

a. Finalize the noise exposure maps and documentation by mid-May, latest by the end of May.
b. Submit work to the FAA. If for any reason the Noise Exposure Map contours change then the Port will go back to the committee for further review. The Port should know within two weeks if there needs to be any changes to the maps.
c. Work with city planners on noise insulation, zoning requirements and land use compatibility guidelines.
d. Work with a subcommittee on the issue of public buildings.
e. Meet with the mobile homes subcommittee again to reconsider any alternatives.
f. Write the issue paper in preparation for a discussion of funding allocation.
g. Additional meetings with TRC.
h. Complete written amendments to the Noise Compatibility Program.
i. Public hearing on the Noise Compatibility Amendments must be held. It will be a more formal hearing than the open house.
j. Present the maps and NCP amendments to Port Commission.
k. Submit amended NCP to the FAA for approval. The FAA has 180 days to respond.

UNSCHEDULED ITEMS

Irene Jones asked the committee members if they would be interested in providing input to the State Air Transportation Commission regarding possible state policies related to aircraft noise. Irene invited TRC members to take part in a brainstorming meeting. If interested, members should contact Irene and she will set up a meeting. (Contact Diane for Irene's phone number.)

PUBLIC COMMENTS.

Comments were taken from the audience.

MEETING ADJOURNED

srn/0184X

Technical Review Committee
1991 Part 150 Update
Meeting Notification

Meeting Date: September 30, 1992
Meeting Place: Port of Seattle - Noise Remedy Office
1410 S. 200th Street
Meeting Time: 5:30 pm - 7:30 pm

A light meal will be served for committee members.

Tentative Agenda:

We will review work completed to date and review the upcoming schedule and topics of discussion.

Port of Seattle

September 10, 1992

Dear TRC Member:

The Technical Review Committee for the Part 150 Update will reconvene on September 30 at 5:30 p.m. in the Port of Seattle Noise Remedy Office, at the old Maywood School, 1410 South 200th Street. Ryk Dunkelberg will be with us as the project advisor and will facilitate the meeting. We will bring everyone up to date on where the project is and the ground we will cover in the next couple of months. Ryk joins me in estimating that approximately two more meetings (after September 30th) will be needed to complete our work before going to a public workshop.

We very much appreciated your patience this summer while staff worked on other items associated with the Update. These included the following:

1. Completion and submittal of the Noise Exposure Maps to the FAA. We recently received a response to the maps from the FAA. We were quite pleased that they had no significant problems with our submittal, although they did request clarification on a few issues. Within the next few weeks, the Port will be providing the information with finalized maps.

2. The Public Building Advisory Committee has met three times to work out a tentative prioritization plan for insulation of public buildings. We will brief you on this at the September 30 meeting.

3. As a recommendation of the TRC, a Planners Forum was started for local area planners and airport staff to share information related to land use planning around the airport. Two meetings have been held.

4. An issues paper was prepared at the request of TRC and mailed in the last packet.

5. More discussion has occurred on the draft recommendations pertaining to mobile homes. We will update you on this at the meeting.

Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

In addition, we will be spending some time in orienting a few additional citizens who will be taking part in the discussion of funding allocations and program priorities. Because three citizen members left the committee after the maps were completed, we feel it is important to replace them so that the citizen perspective is well represented on the committee.

We look forward to seeing you on September 30. Please feel free to call me at 433-5216.

Sincerely,

Diane Summerhays

Diane Summerhays
Planning Program Manager

cc: Distribution
PL 1.3.3; AVN 12.3.8.1; pink

PORT OF SEATTLE

MEMORANDUM

DATE: October 28, 1992

TO: Distribution

FROM: Diane Summerhays, Planning Program Manager

SUBJECT: Technical Review Committee, Part 150 1996 Update
Summary of Meeting, September 30, 1992

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

The following summarizes the significant discussion items of the September 30, 1992 meeting of the Technical Review Committee.

On September 30, 1992, the ninth meeting of the Technical Review Committee was held from 5:30 p.m. to 7:30 p.m. at the Port of Seattle Noise Remedy Office located at 1410 South 200th Street. Committee attendees included citizen representatives Marian MacKenzie, Rick Gardener, Dick Erickson, Henry Counter, Bonnie Browning, Arden Forrey, and Len Oebser. Others included Greg Fewins, City of Federal Way; Steve Butler, City of SeaTac, Dale Gredler, City of Normandy Park; Hans Aschenbach, City of Des Moines; Curt Horner, Seattle King County Health Department; Michael Oswald, Airline Pilots Association; Carolyn Read, Federal Aviation Administration; Ryk Dunkelberg, Barnard Dunkelberg & Company; Diane Summerhays, Wayne Bryant, Robert Knott, Stephanie Shadle, Earl Munday, and Bob Wells, Port of Seattle. Ryk Dunkleberg from Barnard Dunkelberg and Company facilitated the meeting.

Introductions

Ryk Dunkleberg opened the meeting at 5:30 p.m.. An introduction of the committee members followed. Because three citizen committee members have resigned from the committee, four new citizens were asked to sit on the committee to take part in the remaining discussions. The Port had requested that several of the city planning representatives that have been active on the committee suggest people as replacement members. These new citizens include Bonnie Browning, Henry Counter, Len Oebser, and Rich Gardner. Ryk reiterated that citizens on the committee

Introductions (con't)

represent only themselves to provide a citizen perspective. In addition, Hans Aschenbach has replaced Eric Shields from the City of Des Moines and Carolyn Read has replaced Sarah Dalton from the Federal Aviation Administration. On Tuesday, September 29, new committee members were briefed on the work thus far on the Part 150 Update. Ryk reassured committee members that we would not be redoing work. Additional optional briefings were offered in October and November on specific parts of the Update. These dates will be confirmed with the Committee by mid-October. A review of the agenda followed with Ryk noting that the primary purpose of this meeting was to review what we have done to date.

NEM Status

Ryk reported that the FAA has reviewed the Noise Exposure Maps and documentation. Referencing the letter sent by the FAA to the Port, Ryk stated that the comments by the FAA were very positive and revisions to the map are minimal. He stated that the Port is in the process of making the revisions and expect the final maps and documentation be presented to the FAA shortly.

Once the Noise Exposure Maps are accepted by the FAA, a public notice will be placed in the Federal Register as well as several local newspapers. This notice will allow for public comment.

Discussion followed about the recent granting of variances by the Port of Seattle to several airlines and how the granting of these variances may affect the NEMs. Some members felt the maps should be reevaluated to reflect any changes these variances may cause to the maps. The City of Des Moines representative stated that the 1996 map should not reflect the most optimistic decrease in Stage II operations. He felt the maps should reflect a more conservative approach taking into account the possibility that Stage II aircraft may still be flying during 1996 when the nighttime hours will be fully expanded.

Diane stated that the 1996 maps reflect what the Port expects to accomplish in the next four years which is a full phase out of Stage II aircraft operating during the expanded restricted nighttime hours. The variances that have been granted to Alaska Airlines and Federal Express are for a one year period only. These variances were granted using specific criteria that was agreed to in the Mediated Agreement. Diane promised to provide the committee with more detailed information on the variances.

Review of TRC Recommendations To Date

Ryk reviewed for the committee what recommendations have been made by the committee.

Recommendations:

TRC had requested that a Planner's Forums be initiated to facilitate a dialogue between the area planners and the Port of Seattle and to keep the city and Airport planners up to date on activities important to land use compatibility. To date, two forums have been held and more will occur in 1992. Discussions have included Part 150 compatible guidelines, land use controls and options, and briefings on the Port's current noise mitigation programs.

A yearly review of aircraft operations will occur to ascertain if operational increases indicate a need to relook at noise contours. As a result of this review the committee decided that the annual operations review should occur in February of each year when a full year of operational data is available. The Port of Seattle also agreed to not only review operations, but noise contours as well. However, the Port of Seattle should not shrink the boundries of the current noise remedy program.

Amendments to the Compatibility Plan

Diane Summerhays and Earl Munday, Manager, Noise Remedy, reviewed the specific Noise Remedy items agreed to in the Mediated Agreement. She then presented to the committee the Noise Remedy program amendments to the Part 150 Update. The Port is requesting approval of the amendments to ensure funding for the additional programs.

Following is a summary of Noise Remedy program changes found in the Mediated Agreement. Not all need to be submitted in the updated Noise Compatibility Document.

Rate of Home Insulation: Increase the rate of home insulation from 175 per year to 350 homes per year. Noise Remedy is currently accomplishing this goal.

Audit procedure: A standardized procedure for noise auditing homes has been in use since 1991. This procedure has decreased the number of homes requiring audits, thus decreasing the amount of time in the entire insulation process. This procedure does not require FAA approval in the NCP Update, but did require FAA approval from FAA Airport District Office.

Cost Share Program Enhancements: The Port has implement a standardized insulation package for all houses in the former Cost Share area and now pays 100% of insulation costs for homes that are located in the program boundries.

Mobile Homes: The Port has discussed possible ways to mitigate noise affecting mobile homes. The draft proposal is attached and will be an amendment to the NCP.

Public Buildings: Earl reported that an amendment to the NCP will seek to establish eligibility for a number of public buildings. Current discussions are underway within the Public Buildings Commitee to develop methods of insulation for all public buildings within the noise impacted areas and to establish a priority system. The Public Buildings Committee separated public schools into its own category. A meeting with personnel from the Highline public schools is being planned at this time for an upcoming TRC meeting.

Summary of Remaining Work

While this particular update must be concluded fairly soon, there will be issues that will remain and which will benefit from participation by the TRC members. Future issues and a possible role for the TRC will be discussed at a future meeting. A preliminary schedule of TRC meetigns was presented and there were some indications that revisions to the schedule were needed. Project staff agreed to mail out a new schedule.

Requests

To prepare the committee for its discussion of funding allocations, the Port was asked to provide more detailed information on estimated costs and timelines on the current and proposed program elements. The Port was also asked to provide information on past FAA grant amounts to the Port and where funds have been historically distributed within the Noise Remedy programs. There was also a request to provide an analysis of how the variances would affect the 1996 NEM noise contours. This information will be supplied to the committee.

The meeting adjourned at 7:45 p.m..

0184X/tt

TECHNICAL REVIEW COMMITTEE

MEETING NOTICE FOR NOVEMBER 4, 1992

The next TRC meeting will be held next Wednesday, November 4 at the airport in the main terminal building, Large Aviation Conference Room, third floor. (See directions on back.) We will meet at 5:30 p.m. until 7:30 p.m.. A light meal will be provided for committee members.

NOTE: Due to a number of unavoidable scheduling and work conflicts, we will need to reschedule the November 3 optional briefing on the SeaTac Communities Plan for later in the month. We hope to be able to offer it by mid-November.

As a result of a recent Port Commission meeting on issues related to Flight Plan and a possible third runway at Sea-Tac, it appears the Commission will be providing specific direction to staff regarding the scope and pace of the Noise Remedy Program. It is likely this will supersede our planned committee work. More will be known by November 3 and we will report to you on the Port Commission meetings at the November 4 TRC meeting.

At our last meeting, the committee asked for information on the federal grant process as well as cost estimates for the possible new structures. We will provide this information at the meeting.

TENTATIVE AGENDA

1. Review summary of recent Port Commission meetings related to Noise Remedy Program

2. Presentation on Highline Public Schools by Mr. Jerry Heigh from the school district.

3. Federal Grant Process, seeking eligibility for additional structures including cost estimates

4. 1996 NEMS Variance Review

5. Unscheduled Items

0986X

PORT OF SEATTLE
MEMORANDUM

DATE: November 17, 1992

TO: Technical Review Committee

FROM: Diane Summernays, Planning Program Manager

SUBJECT: Technical Review Committee, Part 150 1996 Update
Summary of Meeting, November 4, 1992

Sea-Tac International Airport
Part 150 Noise Exposure Map Update
Technical Review Committee Meeting

The following summarizes the significant discussion items of the November 4, 1992 meeting of the Technical Review Committee.

On November 4, 1992, the tenth meeting of the Technical Review Committee was held from 5:30 p.m. to 7:30 p.m. in the Port of Seattle Large Aviation Conference Room at Sea-Tac Airport on the 3rd Floor of the Main Terminal Building. Committee attendees included citizen representatives Marian MacKenzie, Henry Counter, Bonnie Browning, Arden Forrey, Len Oebser. Others included Minnie Brasher, City of Burien; Greg Fewins, City of Federal Way; Steve Butler, City of SeaTac, Dale Gredler, City of Normandy Park; Hans Aschenbach, City of Des Moines; Carolyn Read, Federal Aviation Administration, Seattle Districts Office; Dick Joswick, Federal Aviation Administration, Sea-Tac Tower; Ryk Dunkelberg, Barnard Dunkelberg & Company; Diane Summerhays, Wayne Bryant, Robert Knott, Stephanie Shadle, Earl Munday, Toni Turner, Port of Seattle. Ryk Dunkleberg from Barnard Dunkelberg and Company facilitated the meeting.

INTRODUCTIONS

Ryk Dunkelberg opened the meeting at 5:30 p.m.. After committee introductions, Ryk reviewed Port Commission Resolution Number 3125. He said this resolution requires Port staff to complete a site specific environmental impact statement in order to prepare for the authorization of the construction of a third runway at Sea-Tac. Prior to construction of a third runway, this resolution gives specific direction to Port staff to insulate half of all eligible single-family residences in the existing noise remedy program that are on the waiting list as of December 31, 1993. In addition, sound attenuation must be completed on the remaining single-family residences prior to the operation of the proposed runway.

Port staff have also been directed to sound insulate those single-family residences that are affected by the actions taken as a result of the site-specific EIS and are on the waiting list as of December 31, 1997. Finally, staff have been instructed to develop and implement amendments to the acousitical insulation program to include multi-family residences, schools, and other institutional uses.

Ryk said this resolution has an impact on TRC's remaining work. Because of the resolution, the committee's initial plan of developing priorities will no longer need to be pursued since the Port Commission has already set the priorities in the new resolution. Ryk then introduced Mike Feldman, Senior Planner from the Port's Planning Department.

After distributing the amended resolution, Mike stated that the final, approved copy will be available on November 5 to the public. This final resolution will also be distributed to all members of the TRC. He proceeded to review the Flight Plan Project and the Puget Sound Air Transportation Committee (PSATC).

Mike reviewed the following schedule: On October 6, the Final Environmental Impact Statement and the draft of the resolution was the topic of a Port Commission public hearing held at the Seattle Center. On October 27, the first reading of the resolution by the Port Commission occurred. Finally, after several amendments, the resolution was adopted on November 3. Mike stated that the adoption of this resolution by the Commission has set specific direction for Port staff to take prior to the construction and operation of a dependent runway. He did emphasize to the committee that this resolution is not a decision by the Port Commission to build a third runway at Sea-Tac. It is, however, a resolution that authorizes Port staff to begin a site-specific Environmental Impact Statement, pursuant to National and State Environmental Policy Acts (NEPA and SEPA), that will consider the potential environmental impacts of an additional runway at Sea-Tac.

Mike discussed Attachment B with the committee. In this attachment, Port staff was directed to "design a mechanism and process to promote mutual airport/community land use compatibility through improved coordination, communication and involvement of elected officials and staffs of affected local and special purpose governments. "With this direction, a new committee developed to will include planners, citizens, and elected officials from surrounding jurisdictions to work on noise and other compatibility issues.

Following Mike's summary, the floor was opened to the committee for questions and discussion. A number of issues were discussed including:

1. An EIS for Paine Field
2. Port's role in regard to the Puget Sound Regional Council
3. Land values affected by proposed third runway
4. Scoping process for a site specific EIS on a third runway
5. Need for a better avigation easement.

HIGHLINE SCHOOL DISTRICT PRESENTATION ON FACILITIES PLAN

Ryk introduced Jerry Heigh, Gary Ferentus, and Don Gilmore from the Highline School District. Orginally, this discussion was to assist the committee on setting priorities for the Port's remedy program. But since the adoption of the resolution, this presentation was for informational purposes only.

Jerry Heigh led the presentation. He began by stating that the bond had failed at the voting polls so proposed improvements on existing schools and construction of new schools will not be possible until another bond can be put before the voters in 1993 and passed. He stated that the Highline School District owns approximately 528 acres of land and 52 buildings. He said that two thirds of the schools in existence are at least 30 years old. Some schools proposed for reconstruction are in the 65 noise contour. The proposal plans for the destruction of some of the existing schools and construction of new schools that are to be completly sound attenuated. He stated that this plan is less expensive not only because of lower interest rates on new construction, but also because in order to effectively sound attenuate the existing buildings, insulation of windows, walls, ceilings and floors would be required.

Some members stated that new schools should not be built because of the potential increase in air traffic. They felt that this construction in noise impacted areas would add to the existing problem. Jerry stated that the schools are being developed because of current and projected needs. People will continue to move into the area and their children will continue to need education. This increase in population in turn requires the addition of new schools. He said whether schools are in the area or not, families will continue to move into the areas surrounding the airport.

Upon completion of his presentation, Jerry stated that the school district is attempting to qualify for state funding. In addition, the school district will request funding for sound insulation from the Port of Seattle. However, what items qualify as sound insulation will need to be discussed and agreed upon prior to funding allocations.

REVIEW SCHEDULE

Diane commented that since the Federal Grant process and the status of the NEMS and 96 variance review had not been discussed, information would be distributed either by mail or at the next TRC meeting. The next meeting is scheduled for Wednesday, December 2. A presentation will be given on the Sea-Tac Communities Plan at this meeting.

In closing, Diane reiterated that Resolution No. 3125 had set the priorities for the priorities for the insulation program, thus, making it no longer necessary for the committee to recommend priorities.

The meeting adjourned at 7:30 p.m.. The next meeting will be Wednesday, December 2, 1992 and will be held in the Large Aviation Conference Room at Sea-Tac Airport.

0184X/tt

TECHNICAL REVIEW COMMITTEE
MEETING NOTICE FOR DECEMBER 2, 1992

The next TRC meeting will be held next Wednesday, December 2 at the airport in the main terminal building, Large Aviation Conference Room, third floor. (See directions on back.) We will meet at 5:30 p.m. until 7:30 p.m.. A light meal will be provided for committee members. At the end of this meeting, an optional briefing will be offered to the committee about the Sea-Tac Communities Plan.

On December 3, 1992, an optional briefing for committee members will be offered which will discuss the development of the NEM's. The meeting will be held from 6:30 p.m. to 8:00 p.m. at the airport in the Large Aviation Conference Room.

TENTATIVE AGENDA

1. Federal Grant Process

2. 1996 Maps/Variances

3. Review Remaining Committee Work

4. Comments or Questions Regarding the Draft NCP Amendments

5. Sea-Tac Communities Plan - Optional Briefing

0986X

Seattle-Tacoma International Airport
FAR Part 150
Noise Compatibility Program: 1993 Amendments

APPENDIX C

* Noise Mediation Agreement
* Noise Budget
* Nighttime Limitations Agreement
* Noise Mediation Fact Sheet
* Section 4.0 Noise Control Options
  Noise Mediation Project
* Letters
  - FAA to Port of Seattle, March 12, 1991
  - Port of Seattle to FAA, October 11, 1991
  - FAA to Port of Seattle, December 2, 1991

FINAL PACKAGE

OF MEDIATED NOISE

ABATEMENT ACTIONS

FOR

SEATTLE-TACOMA INTERNATIONAL AIRPORT

AGREED TO BY THE

MEDIATION COMMITTEE

ON MARCH 31, 1990

PREPARED BY THE

PORT OF SEATTLE

AND

MESTRE GREVE ASSOCIATES

ON BEHALF OF THE

MEDIATION COMMITTEE

TABLE OF CONTENTS

According to the technical consultant, this *agreement* represents the most comprehensive noise control program of any major international airport in the country. Full implementation of all these *agreements* could result in an overall noise reduction of approximately 50% in terms of the Ldn noise levels in the communities surrounding the airport.

NOTES:

Italics indicate changes to the Draft Package resulting from the Mediation Committee meeting on 3/31/90.

Symbol "R" on pages eight and nine indicate that some language was modified after March 31, 1990 as the result of cmments received from the Mediator, based upon the Mediator's notes.

SECTION I: NOISE BUDGET

GOAL

The goal of a noise budget is to reduce the overall amount of noise at Seattle-Tacoma International Airport by encouraging an increased percentage of Stage 3 aircraft at Sea-Tac and the acquisition of Stage 3 aircraft system wide. Appendix A presents the framework for this draft noise budget.

AGREEMENT 1: The Average Noise Energy Level (ANEL), as defined in Appendix A, will be established as the formula to be used in the noise budget.

AGREEMENT 2: The noise reference data used in the formula is based upon the *most up to date version of the* Integrated Noise Model (INM) data base as presented in Appendix A.

AGREEMENT 3: The year 2001 will be the target year for reaching the noise reduction goal.

AGREEMENT 4: The base period will be developed relative to the average daily operations for the month of August, 1989.

AGREEMENT 5: The Noise Bank will be 10% to 15% of the August, 1989 *allocated* base level and is subject to the same reduction formula consistent with Proposal 8.

AGREEMENT 6: Airlines whose operations generate less than 55 TCNEL (as defined in Appendix 1) and international operations will be considered non-allocated and not factored into the equation. *Note:* A TCNEL noise level of 55 is equivalent to four *landing and takeoff cycles* of the B727-200/D15QN aircraft during the daytime hours and represents approximately 1% of the total noise as measured in ANEL. *Over time, efforts will be made to reduce the 55 TCNEL limit.*

AGREEMENT 7: An individual airline will not require a noise certificate if its operations at Sea-Tac exceed a specified level of Stage 3 aircraft. Initially, this level will be set between 60% and 80% and will increase 2.5% every year to the ultimate percentage of 95%.

AGREEMENT 8: The year 2001 annual ANEL noise energy will be reduced by more than 50% from the base reference ANEL. * *As illustrated in Appendix A, interim goals for maximum permissible ANEL will be established.*

AGREEMENT 9: A finalized draft agreement will be presented to the airlines by April 21, 1990.

AGREEMENT 10: The development of administrative and implementation details will be completed by October 1, 1990.

AGREEMENT 11: If the noise reduction goal is not met for two consecutive enforcement periods, new procedures will be examined to achieve the 2001 noise reduction goal.

IMPLEMENTING AUTHORITY: Port of Seattle

* (Note: This represents a commitment to at least 35% to 45% reduction from the 1988 annual ANEL.)

SECTION II: NIGHTTIME LIMITATIONS

GOAL

The goal of the nighttime limitations program is to reduce the noise levels from nighttime turbojet operations by phasing out the operations of Stage 2 aircraft as set forth in Appendix B.

AGREEMENT 1: The initial hours of the nighttime limitation program will be set from midnight to 6:00 a.m. with further expansion of these hours over time until the ultimate goal is reached of 10:00 p.m. to 7 a.m. *It is the intent of this agreement to provide for shifts of aircraft operations from nighttime to daytime that are meaningful and made in good faith.*

AGREEMENT 2: A grandfather period will allow existing Stage 2 operations for the first two years of the program.* *The grandfather period will commence on the date the nighttime limitations agreement becomes effective.*

AGREEMENT 3: Operations with aircraft for which there are no Stage 3 equivalent or retrofits available can receive a variance until such aircraft or retrofits become available. *The Noise Abatement Committee will conduct periodic and regular examination of the availability of retrofits.*

AGREEMENT 4: The development of administrative and implementation details will be completed by October 1, 1990.

AGREEMENT 5: This agreement will become effective on or before October 1, 1990.

AGREEMENT 6: Reducing nighttime noise is a high priority. Efforts to reduce nighttime noise will continue as possible.

IMPLEMENTING AUTHORITY: Port of Seattle

SECTION III: NOISE REMEDY/MITIGATION PROGRAM

GOAL

This program will increase the efficiency and availability of the noise insulation program so that it will better serve the needs of a greater number of homeowners within the Part 150 Noise Remedy Program area. It will not reduce noise, but rather will provide additional efforts to mitigate the effects of noise on the community by providing for a more usable indoor living environment. Success of this program is therefore measured in terms of reduced population adversely affected by aircraft noise.

Note - All costs *of* the Noise Remedy Program will be shared 80/20 by the Federal Aviation Administration and the Port of Seattle, respectively.

*Grandfather operations are defined as Stage 2 flights that have been operated on a regular schedule during a time period between March 31, 1989 and March 31, 1990.

A. INCREASE IN ANNUAL RATE OF INSULATION

AGREEMENT 1: Contingent upon continued FAA funding of the program, increase the rate of home insulation from the present 175 per year to 350 per year. This will require hiring approximately six additional staff. With completion of the acquisition program in 1992, the Port of Seattle will consider phasing in a higher rate of insulation and staffing.

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

B. AUDIT PROCEDURE

BACKGROUND

High program costs and the lengthy processing time for noise audits currently limit the availability of the Noise Remedy Program. Current FAA policy requires that each house in the program be noise audited both before and after the house has been insulated. Each audit costs $250 and requires not only appropriate weather conditions, but also homeowner availability. Each audit process takes about two months to complete. Currently, approximately fifteen audits are being completed each month. A reasonably accurate measure of noise intrusion can be estimated using a representative audit sample and a computer simulation model.

AGREEMENT 1: The Port of Seattle and the Federal Aviation Administration will work together to reduce the number of audits in the Noise Remedy Program area by approximately two-thirds. Accuracy of noise attenuation measures will be ensured using a computer model that simulates the actual audit.

AGREEMENT 2: If the method for computer simulated audits described in *Agreement* 1 is found to be accurate and successful, the Port of Seattle will explore reducing the percentage of homes audited further, with an ultimate goal of ten percent. [Any funds saved as a result of this audit procedure would revert directly back to the Noise Remedy Program.]

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

C. ENHANCE NOISE REMEDY "COST SHARE" PROGRAM AREA

BACKGROUND

Citizens are reluctant to pay half the costs for a program designed to mitigate a problem they did not directly cause: there is, therefore little community interest in the noise remedy Cost-Share program.

AGREEMENT 1: Implement standardized insulation package for all houses in the Cost Share area.

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

AGREEMENT 2: Contingent on standardization of the insulation package (see *Agreement* 1), the Port of Seattle will pay all of the insulation costs in the current Cost Share Noise Remedy Program area. (Currently a homeowner is responsible for providing half of the funds.)

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

D. MOBILE HOMES

BACKGROUND

Residents within the Part 150 area who live in mobile homes experience extreme amounts of aircraft noise. A 1985 Demonstration Program of the Port's Noise Remedy Program tested the effectiveness of acoustical insulation on mobile homes, and found that it is neither a physically nor aesthetically acceptable method of mitigating the noise problem.

AGREEMENT 1: During the next year the Port of Seattle will continue to explore ways to deal effectively with mobile homes, especially in cooperation with other governmental entities, and will produce a report on possible mitigation actions.

IMPLEMENTING AUTHORITY: Port of Seattle and other governmental agencies

E. HARDSHIP COMMITTEE

AGREEMENT 1: A hardship committee will be initiated for the insulation program. This committee will evaluate requests from applicants for special consideration due to hardship (medical, financial, etc.). This committee will decide priority issues only (including criteria), and will not address policy or budgeting. Cases will be evaluated individually. The commitee will be comprised of both citizens from the Noise Remedy area and Port staff.

IMPLEMENTING AUTHORITY: Port of Seattle, citizen committee

F. PRIORITY LISTING

BACKGROUND

The current priority system, initiated in 1985 based on recommendations of a citizen advisory committee, gives priority to applicants in the noisiest areas and those who have owned their homes the longest. Additional consideration is given to owners of homes that are adjacent to clear-zone or acquisition areas.

Applicants have complained that *the continually evolving insulation schedule, based on the current priority system, makes home improvement planning difficult.*

AGREEMENT 1: The Port will amend the current priority system in conjunction with other Noise Remedy

improvements to minimize the homeowner's sense of uncertainty concerning when the applicant will be accepted. Consideration will be given to the homeowners' date of application to the program. *Care will be taken to ensure that homeowners who are already on the application list for Noise Remedy will not be dropped from the list as a result of any modifications to the priority system.*

IMPLEMENTING AUTHORITY: Port of Seattle

G. TRANSACTION ASSISTANCE

AGREEMENT 1: Develop a limited program for enhanced transaction assistance for homeowners who live adjacent* to buy-out areas. The Port of Seattle will purchase, insulate, and then resell these homes. If successful, the program may be expanded.

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration

H. PUBLIC BUILDINGS

BACKGROUND

Current FAA regulations and the language in the FAA's Part 150 document limit public building eligibility for insulation to public shools and hospitals.

AGREEMENT 1: Expand existing program to provide insulation for additional types of public buildings (eg. auditoriums, private schools, churches, day care centers, libraries, etc.). Pursue amendment to current Part 150 document. *Port of Seattle will inventory and examine the feasibility of noise monitoring public buildings that border on the 65 Ldn contour, and will investigate the possibility of insulating these buildings if noise levels so warrant.*

IMPLEMENTING AUTHORITY: Port of Seattle, Federal Aviation Administration, citizen advisory group

SECTION IV: IMPROVE DUWAMISH/ELLIOTT BAY CORRIDOR NOISE ABATEMENT PROCEDURES

GOAL

The goal of this action is to minimize jet overflight noise for residential areas adjacent to the Duwamish /Elliott Bay Corridor.

**For the purposes of this program a house is adjacent if the property line abuts or is directly across the street from any Sea-Tac Airport property or property owned (or to be acquired by) the Port of Seattle. See Noise Remedy Program Procedural Guidelines for diagramatic example.*

A. DUWAMISH/ELLIOTT BAY CORRIDOR PROCEDURES

BACKGROUND

The Duwamish/Elliott Bay Corridor is an essential noise mitigation measure for north flow departure procedures. Currently, the air traffic controllers provide departure instructions to a pilot and, in most cases, observe the aircraft on radar to ensure they remain on assigned paths. Controllers frequently provide radar vectors for separation of departures. The following actions will improve the Duwamish/Elliott Bay procedures.

AGREEMENT 1: To provide controllers with *better* means of guidance, *the outlines of Elliott Bay, Bainbridge and Vashon Islands will be depicted on the Seattle TRACON video map.*

AGREEMENT 2: *FAA tower directives will direct the controller to vector north departures over Boeing Field and Elliott Bay to the maximum extent possible consistent with workload and safety.*

AGREEMENT 3: During periods of low activity, special procedures will be in place for aircraft using the Duwamish Corridor. See **SECTION V: NIGHTTIME FLIGHT CORRIDORS.**

AGREEMENT 4: Accuracy in the use of the Duwamish/Elliott Bay Corridor will be monitored by the improved Noise Management System. See **SECTION VII: NOISE MANAGEMENT SYSTEM.**

IMPLEMENTING AUTHORITY: The Federal Aviation Administration will implement *agreements* 1 - 3. The Port of Seattle in cooperation with the Federal Aviation Administration will implement the Noise Management System. See **SECTION VII: NOISE MANAGEMENT SYSTEM.**

B. MICROWAVE LANDING SYSTEM

BACKGROUND

Existing navigational technology cannot provide more accurate use of the Duwamish/Elliott Bay Corridor. A Microwave Landing System (MLS) can offer possibilities for noise relief measures, especially in regard to the Duwamish/Elliott Bay Corridor. The MLS is so precise and flexible that pilots and controllers would be able to contain flight tracks within the Duwamish/Elliott Bay Corridor virtually all the time.

At this time, the FAA plans to transition from the Instrument Landing System (ILS) to the international standard MLS by January 1, 1998. In order for the MLS to operate, instrumentation will need to be installed in each aircraft.

AGREEMENT 1: Request that the FAA designate Sea-Tac as a demonstration project for the Microwave Landing System.

AGREEMENT 2: When federal progress on this issue occurs, the Port will work with the FAA to establish a program and target dates for phase-in. The program would include a schedule for phase-in of navigational aids and air traffic control procedures. The Port will consider a program of incentives to carriers that accelerate implementation.

IMPLEMENTING AUTHORITY: Port of Seattle and Federal Aviation Administration

SECTION V: NIGHTTIME FLIGHT CORRIDORS

GOAL

The goal of these actions is to minimize the noise impacts from aircraft operations during the most noise sensitive periods (nighttime) by optimizing the use of areas of less noise sensitive land use. Specifically, the goal is to reduce the single-event disturbances from nighttime operations in the communities north of Boeing Field and surrounding Elliott Bay.

It is the intent of this section to sharpen departure tracks through the Duwamish Corridor during nighttime hours. Any changes made are conditional upon assurance that the goal of reducing noise can be achieved. This section is not intended to address the nighttime curfew on north flow east turn departures.

BACKGROUND

This program of actions consists of specific nighttime procedures that can be implemented due to the low traffic volumes from Boeing Field at night. The **NOISE MANAGEMENT SYSTEM** as described in **SECTION VII,** will be used to monitor compliance with these procedures.

AGREEMENT 1: During *those* nighttime hours *when traffic is light enough to permit (currently 10 PM to 6 AM) aircraft using the Duwamish Corridor and Elliott Bay* will be turned at Boeing Field. Traffic using Boeing Field during *these* nighttime hours is minimal and can be more easily coordinated with Sea-Tac to ensure a safe and efficient operation.

AGREEMENT 2: *During those nighttime hours when traffic is light enough to permit,* turbojet aircraft depart north through Elliott Bay and proceed on course utilizing the following routes out of the terminal area. Note, these represent approximate tracks, as different aircraft will reach 10,000 feet at different distances from the airport.

a. Eastbound *and Canada* destination aircraft shall proceed westbound over Elliott Bay then northbound over Puget Sound until reaching 10,000 feet or the SEA 20 NM DME Fix / SEA 320 radial, whichever comes first, then turn eastbound *or continue north* on course.

b. Aircraft proceeding to Alaska or the Pacific Rim, shall proceed westbound over Elliott Bay then northbound over Puget Sound until reaching the SEA 20 NM DME Fix / SEA 320 radial at or above 10,000 feet before being turned westbound to cross the shoreline on course.

c. Aircraft with south or southeast bound destinations shall proceed westbound over Elliott Bay then southbound over Puget Sound until crossing the SEA 12 NM DME Fix / SEA 220 radial at or above 10,000 feet before being turned eastbound to cross the shoreline on course.

Note - the SEA 20 NM DME Fix / 320 radial and the SEA 12 NM DME Fix / 220 radial are approximate reference points and could change slightly when final flight track charting is completed.

IMPLEMENTING AUTHORITY: Federal Aviation Administration

R

SECTION VI: CONTROL OF GROUND NOISE

GOAL

The goal of this noise abatement action is to control and reduce the amount of ground noise from the airport both in terms of peak sound levels as well as the duration of the noise events. Although the focus of this action is to control nighttime ground noise there will also be some benefits in reducing ground noise during the daytime hours.

BACKGROUND

This noise abatement goal will be accomplished through implementation of a variety of measures that address the different sources of ground based noise. The potential change in noise from this action will be most effective in the close-in areas, although during certain meteorological conditions these changes will be noticed at more distant locations. The Ldn noise levels at the close-in areas are estimated to be reduced by 0.5 to 2 dBA as a result of these actions. Although the most significant improvements are anticipated to be in terms of reductions in the occasional single event disturbances, these occurences during nighttime hours can be considerably annoying.

AGREEMENT 1: Prohibit the use of powerback procedures from the gates. Only American Airlines and TWA currently conduct powerback procedures. This would be implemented through a voluntary agreement or, if necessary, by amending the airport's rules and regulations to prohibit powerback procedures.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 2: Turbojet engine maintenance run-up restrictions will be enhanced by developing a mechanism for identifying violators of current rules and regulations governing this activity. This will also include a program of penalities to be applied against violators in a scaled format that will range from a letter of reprimand to fines for continued violations within a specified period of time.

IMPLEMENTING AUTHORITY: Port of Seattle, Airlines

AGREEMENT 3: If any additional maintenance base is developed at the airport it will require the provision of an engine "hushing" facility or hush house. The hush house would provide the capacity to abate the noise of the engine maintenance run-ups.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 4: Evaluate the effectiveness of reduced use of thrust reversers in *conjunction with* the development of additional *exit* taxiways *under consideration* in the on-going FAA sponsored study on airfield improvements. *Additionally, in conjunction with efforts to examine the possibility of such exit taxiways*, minimize the noise impacts of thrust reversers for braking of turbojet aircraft by publishing and distributing *an* ALPA pilot briefing sheet which provides guidance to pilots for minimizing use of thrust reversals.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 5: Limit the use of auxiliary power units (APU) particularly during the nighttime hours. Many operators currently have fixed power systems available at their gates. This action addresses those operators who do not have these systems. The Port will negotiate with the operators for installation of fixed power systems or use of ground power units. In the interim, operators will be asked to limit use of APUs to a minimum during the hours between 2400 and 0600.

IMPLEMENTING AUTHORITY: Port of Seattle

AGREEMENT 6: At this time it is not practical or feasible to install sound berms or barriers due to the unique meteorological conditions of Seattle, the topography of the local area, the cost effectiveness of this action, as well as the lack of space available on airport property. The Port will continue monitoring advances in this technology to determine if any future action would provide meaningful noise reduction benefits to adjacent communities.

SECTION VII: NOISE MANAGEMENT SYSTEM

GOAL

Implementation of a noise management system will make it possible to monitor the effectiveness of and compliance with the noise abatement actions that are developed through mediation, and to produce objective data for use as the airlines, FAA and Port officials work to resolve issues of noncompliance.

BACKGROUND

Sea-Tac's current flight tracking system was one of the first in the country and does not have the capabilities to be used on a constant basis to track all individual aircraft. The large amounts of flight track data necessary to do this cannot be provided by the existing computer hardware and software system.

The new noise management system will be tailored to meet the requirements of programs that are unique to Seattle. For example, improving the Duwamish Corridor noise abatement procedures can be validated by an updated airport flight track and noise monitoring system and the aircraft identification sytem can be used to monitor compliance with the Noise Budget or Nighttime Limitations. Because of the long lead times necessary for designing and procuring a fully developed, multi-component system, Tier 1 is presented as an interim monitoring program. Tier 2 is a much more complex, entirely new system that will fully meet the monitoring needs of the noise abatement actions and programs developed through mediation. Work can begin on Tier 2 while Tier 1 is being implemented and used.

The Noise Management System might eventually include the following components: enhanced noise monitoring, enhanced flight tracking, aircraft identification, monitoring of FAA air traffic Tower tapes, and modified noise complaint processing.

AGREEMENT 1: **TIER 1: EXPAND EXISTING FLIGHT TRACK MONITORING SYSTEM**

After gaining agreement with the FAA for use of the ARTS IIIA data on disk packs, use an outside service to transfer the ARTS data from the disk packs to 9-track tapes that are directly readable by the Port of Seattle computer. This data is then analysed using the Port's existing software.

The program goal is to monitor one 24-hour period (randomly selected) of flight track data, per week. The time estimate for completing processing of a 24-hour sample is two to three weeks.

When the capabilities of the system have been determined, additional days may be added. The maximum amount of data that can be processed with this system is estimated to be 3 days per week.

After testing, the Tier 1 system will be implemented. This program includes:

a. Establishing criteria for monitoring compliance with procedures included in this agreement.

b. Develop a regular report on compliance. Distribute reports to the FAA and to each airline.

c. If an on-going compliance problem is identified for a particular airline, the chief pilot will be contacted directly.

d. A summary of flight track monitoring results will be published quarterly in the Sea-Tac Forum newsletter and reported to the Noise Abatement Committee.

IMPLEMENTING AUTHORITY: The primary responsibility belongs to the Port of Seattle. The FAA's responsibility is to provide prompt transfer of the necessary data and cooperation in system integration and use. Airlines. «

AGREEMENT 2: **TIER 2: DEVELOP NEW COMPREHENSIVE NOISE MANAGEMENT SYSTEM**

Evaluate systems available for reading and processing ARTS data on a daily basis. These systems generally include a disk pack reader, dedicated computer and software programs for tape translation, ARTS processing and compliance reports. In addition, the system must be able to provide information concerning (1) aircraft flight track maps on a daily basis; (2) flight track data for individual aircraft; (3) altitude profile analysis; (4) determine level of aircraft operations by type and airline; and (5) integration of tower voice tapes to determine instructions given to the pilot for actions under investigation. Finally, a system requirement will be expandable capabilities to correlate noise monitoring data.

Identify and implement the new flight track monitoring program. This will include the following:

a. Prompt evaluation of Hotline complaints regarding compliance problems with noise abatement procedures included in this agreement. Integrate flight track data with noise monitoring and taped Tower instructions.

b. Short reports will be developed for each incident and accompanied by supporting data. If a problem is discovered, the airline or the FAA will be contacted and the data supplied to the responsible party. Reports and follow-up information will be supplied to the caller.

c. Publish monthly summary of noncomplying incidents and responsible parties in the Sea-Tac Forum Newsletter and release summaries in the form of a quarterly news release.

IMPLEMENTING AUTHORITY: Port of Seattle has the primary responsibility. The FAA's responsibility is to provide on-going support of this program through an agreement to use the ARTS data and to provide prompt transfer of the data.

AGREEMENT 3: TIER 3: INTEGRATE NOISE AND FLIGHT TRACK MONITORING

BACKGROUND

The Port's current noise monitoring system has been in operation since 1979. It consists of 11 remote sites within the Part 150 area. It's primary capability is to measure daily Ldn noise levels.

In this action, the noise monitoring system will be evaluated for expansion and software will be obtained to correlate single event noise level data with individual aircraft operations related to specific flight procedures.

AGREEMENT 3A: Relocate the noise monitoring central processing information center to a more public area of the airport to provide public viewing.

AGREEMENT 3B: Publish reports of the noise monitoring data on regular basis.

AGREEMENT 3C: Evaluate integration of the noise monitoring data with flight track data.

AGREEMENT 3D: Evaluate the capability of the current system to be expanded for remote sites noted in Tier1.

AGREEMENT 3E: Upgrade or replace the noise monitoring system based on results of *Agreements* 3C & 3D.

AGREEMENT 3F: Generate annual contour report using the Integrated Noise Model.

IMPLEMENTING AUTHORITY: Port of Seattle

SECTION VIII: FLIGHT TRACK MANAGEMENT

The Mediation Committee or its designees will have until April 30, 1990 to reach agreement on east turn flight track modifications. If there is agreement on modifications, the Port will seek the concurrence of affected local jurisdictions within 30 days.

All members of the community caucus will have the opportunity to participate in the discussions and to concur in any agreement. The agreement will be forwarded to the Noise Abatement Committee.

The Port and FAA will assist in the discussions and the Port will seek to provide necessary technical assistance.

If there is no such agreement or if such concurrence is not forthcoming, the remainder of this package agreement shall stand and the following statement shall be appended to the "Statement Regarding Flight Tracks".

> ***Whereas*** *certain of the participants including the airlines industry and some communities favor new multiple flight tracks and others favor maintaining existing flight tracks; and,*

It is understood that the FAA has the legal authority to initiate such changes as it deems appropriate. However, their agreement will be sought to ensure the implementation of any agreed upon modifications

STATEMENT REGARDING FLIGHT TRACKS

Whereas *the Mediation Committee has considered the impacts of existing and proposed flight tracks within the context of noise abatement, differential impacts on communities, efficiency and safety; and,*

Whereas *certain of the interests, including the airlines industry, favor and anticipate implementation of the FAA's airspace enhancement plan, and other interests, including certain communities do not favor its implementation; and,*

Whereas *despite their best efforts, participants in the mediation process have been unable to agree upon changes in flight tracks that are acceptable to all participants; and,*

Whereas *it is understood that the FAA has the legal authority to make such changes as it may deem appropriate,*

Therefore no changes to flight tracks are endorsed by this mediation process and it is further understood that these recommendations stand in the absence of such an agreement.

SECTION IX: CONTROL NOISE FROM MOST ANNOYING OPERATIONS

GOAL

This action is meant to control or eliminate particular single event operations that occur on a continuing basis and that are the object of community complaints. While the Port will be the implementing party, success of this action will depend on the cooperation of both the FAA and the airlines.

The Sea-Tac Aircraft Noise Hotline will be the primary tool for use in identifying which operations are most annoying to the community.

AGREEMENT 1: The Hotline complaint form and computer program will be modified to enable staff to crosscheck or sort complaints in a way that will help in associating apparently unrelated complaints with one specific operation or event.

AGREEMENT 2: The Noise Management System will be used to assist in identifying the object of the complaint or assistance will be requested from the FAA.

AGREEMENT 3: When the airline has been identified, the Port will contact it or the FAA to make the parties aware of the specific noise concern and to attempt to reach a solution.

IMPLEMENTING AUTHORITY: The Port of Seattle has the primary responsibility for implementing this measure. Assistance for *Agreement* 2 may be required from the FAA if identification is not possible during Tier 1 of the flight track monitoring program. The success of this program depends on the cooperation of the airlines and the FAA in trying to reach solutions.

SECTION X: INITIATE NOISE ABATEMENT COMMITTEE

GOAL

The goal of an on-going committee is to insure that implementation of mediated programs is progressing as expected. *It is the intent that this Committee be formed to adequately represent the interests to this agreement in a balanced manner.*

AGREEMENT 1: A committee designated by the mediation committee will meet at regularly scheduled intervals to review and comment on reports related to mediated noise abatement programs. Initially, meetings will focus on implementation progress, with the committee advising on the resolution of unanticipated implementation problems. After all programs are successfully implemented, meetings will focus on results of the various airport use regulations such as the noise budget and nighttime limitations and on the results of the monitoring activites. The committee will be considered a standing committee. Original committee members will determine the rules under which the committee will operate. *The purpose, procedures and groundrules for the Noise Abatement Committee are outlined in Appendix C.*

IMPLEMENT AUTHORITY: Port of Seattle

SECTION XI: CHANGES IN PRESENT CONDITIONS

For most parties to this mediation agreement there are one or more issues of fundamental importance which constitute the basis for moving ahead with this overall package. Any significant change in such an issue of fundamental importance to any party to this agreement from the manner in which this issue is treated in these recommendations or in the environment within which these agreements were reached would permit the affected party to reconsider its support for the package and relieve itself from the commitments undertaken in this agreement.

Should a party affected by this agreement believe that such significant change has occured, they shall so inform the Noise Abatement Committee. The Committee shall have 30 days in which to address and seek to resolve this issue.

SECTION XII: PROCESS

Airport staff, with the assistance of members of the Options Subcommittee, the technical consultants and the mediators shall prepare a final draft of the recommendations by April 21, 1990. That draft shall be within the spirit of and any specific provisions contained in these draft recommendations.

The Airport staff shall prepare, in discussion with appropriate parties and authorities, procedures and agreements to implement and administer this agreement by the dates specified in these recommendations (ie. noise budget and nighttime limitations by October 1, 1990).

The Noise Abatement Committee (NAC) shall be established immediately and shall initially be composed of members of the Options Subcommittee. (Procedures and groundrules for the NAC including the change of membership etc. will be included in the April 21 recommendations.) An initial responsibility of the Noise Abatement Committee shall be to focus on the progress in developing the implementation and administrative agreements.

APPENDIX C:

Sea-Tac Noise Abatement Committee

PURPOSE

The purpose of the Sea-Tac Noise Abatement Committee (SNAC) is to provide advice, oversight and continuity during the development, implementation, and duration of the Noise Abatement actions agreed to by the Mediation Committee on March 31, 1990.

PROCEDURES

Meetings: Meetings will initially be held on every two months, and will be facilitated by Port of Seattle staff. Revisions to the meeting schedule may be requested by the Sea-Tac Noise Abatement Committee. Participation in the discussions will be limited to members of SNAC, although meetings will be open to the public. Meetings will be held at Sea-Tac International Airport unless otherwise stated. Staff support, including provision of agendas and minutes, will be provided by the Port of Seattle.

GROUND RULES

Membership:
Membership is to be established and maintained in such a manner as to ensure adequate and balanced representation of the Mediation Committee interests. Initially, membership will be composed of members of the Options Subcommittee of the Mediation Committee, who will be appointed by the Port Commission to serve a term not to exceed two years.

As a member's term expires, or in the event that a member needs to be replaced before the conclusion of his or her term, a replacement will be selected based on procedures determined by the full Noise Abatement Committee. Nominations will be confirmed by the Port of Seattle Commission.

Establishment of further ground rules:
The first priority of the Airport Noise Abatement Committee will be to establish the ground rules under which the committee will operate. These ground rules will address such issues as procedures for meeting conduct, membership requirements, etc.

Agenda:
Initial agendas will focus on establishment of ground rules and implemetation progress, with the committee advising on the resolution of unanticipated implementation problems. After all programs are successfully implemented, meetings will focus on results of the various airport use regulations such as the noise budget and nighttime limitations, and on the results of the monitoring activities. The committee will provide continued review and comment on reports related to mediated noise abatement programs.

SEATTLE-TACOMA INTERNATIONAL AIRPORT
NOISE BUDGET
January 1, 1991
(Doc. # NBS2790.PM4)

Section 1—Statement of Purpose

The purposes of this agreement are to limit aggregate aircraft noise at Seattle-Tacoma International Airport (SEA) and to reduce it over time.

Section 2—Effective Date

This agreement shall become effective on January 1, 1991.

Section 3—Definitions

For the purposes of this agreement, the following definitions will apply:

1. Aircraft — Fixed wing airplane operating in commercial service carrying passengers or cargo.

2. Aircraft Operation — An aircraft landing or takeoff at the Airport.

3. Airport — Seattle-Tacoma International Airport (SEA).

4. Airport Noise Exposure Level and ANEL — The average daily noise exposure level at the Airport produced by the energy sum of the PCANEL and the CCANEL.

5. Airport Noise Fund and ANF — A portion of the Maximum ANEL that has not been allocated and is held by the Port of Seattle for future allocation to new entrants and existing carriers. Noise that reverts to the Port from transfer fees and forfeited or abandoned allocations is added to the Airport Noise Fund. The Airport Noise Fund's noise exposure level is equal to the numerical difference calculated on an energy basis between the Maximum ANEL (per Section 4.A.) and the allocations of PCNEL and CCNEL made according to this Agreement.

6. Allocated Aircraft Operation — Any aircraft operation that is not defined as a Non-Allocated Aircraft Operation (see definition 29. Non-Allocated Aircraft Operation).

7. Allocation — See PCNEL Allocation and/or CCNEL Allocati

8. Average Daily Operations — The total number of Aircraft Operations for a specifiedperiod divided by the number of days in that period.

9. Base Period — This is the period of time to be used as a reference point for noise allocation and reduction purposes. The period from August 1, 1989 to and including August 31, 1989 is used as a reference for noise allocations with consideration given to an airline's 1989 average noise exposure level for operations at Sea-Tac.

10. Cargo Carrier — A Carrier the majority of whose operations consist of transporting only property or mail, or both by aircraft.

11. Cargo Carrier Airport Noise Exposure Level and CCANEL — The average daily noise exposure level at the Airport produced by the Average Daily Operations of Cargo Carriers operating during a specified period excluding Non-Allocated Operations.

12. Cargo Carrier Noise Exposure Level and CCNEL — The average daily noise exposure level generated by the Average Daily Operations of an individual Cargo Carrier operating during a specified period computed in accordance with Schedule A.

13. Carrier — Any entity conducting commercial aircraft operations at the Airport, including cargo service. Any group of Carriers serving the airport that are owned or controlled by a single entity or related entities and operating under the same airline identifier, shall be collectively deemed to be a single Carrier.

14. CCNEL Allocation — The portion of the CCANEL allocated annually to an individual Cargo Carrier pursuant to a valid Noise Certificate.

15. Compliance Period — A three month (quarterly) period beginning on January 1, April 1, July 1, and October 1 of each calendar year, and during which noise levels for each carrier are calculated and averaged. Compliance Period noise levels are monitored to ensure that carriers will be able to comply with the year-end Enforcement Period (annual) limits. In addition, there are limits on the amount by which a carrier's noise energy during a Compliance Period may exceed the Enforcement Period PCNEL or CCNEL allocation.

16. Daytime — The period from 7:00:00 a.m. local time until 9:59:59 p.m. local time.

17. Director of Aviation — The Director of the Port of Seattle Aviation Division or a designee.

18. Effective Date — January 1, 1991, the date this agreement becomes effective.

19. Enforcement Period — An annual period beginning January 1 of each calendar year.

20. Equivalent Aircraft Cycle — The noise exposure produced by a landing and takeoff of a Boeing 727-200 with JTSD-15QN engines. This is the most commonly used aircraft at the airport, and its noise level is defined in Table A-1.

21. Chief Executive Officer — The Chief Executive Officer of the Port of Seattle or a designee.

22. Foreign Carrier — A Carrier which is a Foreign Air Carrier as defined in 49 U.S.C.A. §1301.

23. Government Aircraft — An aircraft used in the service of a local, state or national government or of any political subdivision thereof, including the United States and any state, territory, or possession of the United States, or the District of Columbia, but not including any aircraft engaged in carrying persons or property for a commercial purpose.

24. International Service — A scheduled or nonscheduled Aircraft Operation conducted pursuant to a bilateral agreement between the United States and a foreign government where the takeoff or the landing is at a location outside of the United States, or, for a Foreign Air Carrier, where the flight segment is a part of flight that begins or ends at a location outside of the United States. However, whenever the bilateral agreement between the United States and a foreign government is amended so that the bilateral agreement actually functions as a free market system, then the International Carrier will be reexamined as to changing that Carrier from a Non-Allocated Carrier to an Allocated Carrier.

25. Maximum Airport Noise Exposure Level — The average daily noise exposure level at the Airport produced by the energy sum of the PCANEL, the CCANEL, and the noise held in reserve in the Airport Noise Fund. The Maximum Airport Noise Exposure Level is reduced over time in accordance with Section 4.A.

26. Nighttime — The period from 10:00:00 p.m. local time until 6:59:59 a.m. local time.

27. Noise Certificate — A document that specifies an individual carrier's PCNEL or CCNEL allocation calculated in accordance with the procedures set forth in Schedule A.

28. Noise Exposure Level — The measure of exposure to aircraft noise at the Airport computed in accordance with the procedures set forth in Schedule A.

29. Non-Allocated Aircraft Operation — One of the following types of aircraft operations:
    a. operations by Government Aircraft;
    b. operations by carriers which produce a PCNEL or CCNEL less than the TCNEL; and
    c. operations by aircraft providing International Service (unless the carrier has elected to have its International Stage 3 aircraft operations counted as part of its Stage 3 percentage pursuant to Section 6.C., in which case all of its international operations are to be considered Allocated Aircraft Operations.)

30. Passenger Carrier — A Carrier the majority of whose operations consist of transporting passengers by aircraft.

31. Passenger Carrier Airport Noise Exposure Level and PCANEL — The average daily noise exposure level at the Airport produced by the Average Daily Operations of Passenger Carriers operating during a specified period excluding Non-Allocated Operations.

32. Passenger Carrier Noise Exposure Level and PCNEL — The average daily noise exposure level generated by the Average Daily Operations of an individual Passenger Carrier operating during a specified period computed in accordance with Schedule A.

33. PCNEL Allocation — The portion of the PCANEL allocated annually to an individual Passenger Carrier pursuant to a Noise Certificate.

34. Port — The Port of Seattle.

35. Stage 2 Aircraft — An aircraft that is certificated by the FAA as complying with the noise levels prescribed in 14 C.F.R. Part 36, Appendix C, Section 36.5 (a)(2).

36. Stage 3 Aircraft — An aircraft that is certificated by the FAA as complying with or with a placard operated to meet the noise levels prescribed in 14 C.F.R. Part 36, Appendix C, Section 36.5 (a)(3).

37. Threshold Carrier Noise Exposure Level and TCNEL — An average daily noise exposure level below which a Carrier's PCNEL or CCNEL is considered to not significantly impact the overall noise exposure level of the Airport. This level is to be set at an Enforcement Period noise exposure level of 55.00 dB, which is approximately equal to four daytime landing and takeoff cycles of a 727-200/15 QN as defined in Table A-1. [If in 1997 the number of all Stage 2 aircraft operations [excluding government and international] falling below this threshold exceeds *a* noise exposure level of 59.00 dB then methods to phase out these aircraft will be examined.)

38. Transfer Fee — An amount of noise forfeited to the Airport Noise Fund when a PCNEL or CCNEL Allocation is transferred from one carrier to another. The Transfer Fee is equal to 0.30 dB of the purchased noise exposure level.

Section 4—ANEL Limits

A. The Maximum ANEL permitted at the Airport is as follows:

For the Calendar Year	Maximum ANEL*	Percent Reduction*
Base Period	74.53	0%
1991	74.35	4%
1992	74.17	8%
1993	73.88	14%
1994	73.59	19%
1995	73.28	25%
1996	72.97	30%
1997	72.66	35%
1998	72.31	40%
1999	71.96	45%
2000	71.60	49%
2001	71.24	53%

The specific reduction values for each carrier are shown in Schedule A., Section 6.

Section 5—Carrier Noise Allocations and Noise Certificates

A. The PCANEL allocations shall be allocated from the ANEL to each Passenger Carrier (excluding government and international carriers) that conducted Aircraft Operations at the Airport during the Base Period that resulted in the Carrier's PCNEL meeting or exceeding the TCNEL, in the form of PCNEL Allocations in proportion to each Carrier's share of actual PCANEL. The PCNEL Allocations will initially be set at levels based upon each Carrier's PCNEL for the Base period as computed in Schedule A. Beginning in the year 1991 and continuing each year until 2001, each Carrier's PCNEL Allocation will be reduced in accordance with Schedule A.

B. The CCANEL allocations shall be allocated from the ANEL to each Cargo Carrier (excluding government and international carriers) that conducted Aircraft Operations at the Airport during the Base Period that resulted in the Carrier's CCNEL meeting or exceeding the TCNEL, in the form of CCNEL Allocations, in proportion to each Cargo Carrier's share of actual CCANEL. The CCNEL Allocations will initially be set at levels based upon each Carrier's CCNEL for the Base Period as computed in Schedule A. Beginning in the year 1991 and continuing each year until 2001, each Carrier's CCNEL Allocation will be reduced in accordance with Schedule A.

C. The noise exposure level generated by an interchange flight will be allocated to the carrier who provides the pilot in command or in any other manner mutually agreeable to the carriers involved and the Port of Seattle. The noise exposure level generated by contract operations

between two carriers may be allocated or reallocated in a manner mutually agreeable to the carriers involved and the Port of Seattle.

D. On the Effective Date, the Director of Aviation shall issue a Noise Certificate to each Carrier (excluding government and international carriers) that conducted Aircraft Operations at the Airport during the Base Period that resulted in the Carrier's PCNEL or CCNEL meeting or exceeding the TCNEL. After the Effective Date, the Director of Aviation shall issue a Noise Certificate within thirty (30) days of the end of each calendar year to each Carrier which during the preceding calendar year conducted Aircraft Operations at the Airport that resulted in the Carrier's PCNEL or CCNEL meeting or exceeding the TCNEL (excluding international and government carriers). No such Noise Certificate shall be valid for more than one (1) year and thirty (30) days.

E. Each Noise Certificate issued shall specify the individual Carrier's PCNEL or CCNEL Allocation calculated in accordance with the procedures set forth in Schedule A. The allocation set out in a Carrier's Noise Certificate shall be conclusive, and the Carrier shall be deemed to have agreed with the allocation if the Director of Aviation has not received a written objection from the Carrier in accordance with Section 11 of this agreement within thirty (30) days after the date of issuance of the Noise Certificate to the Carrier.

F. Upon receiving a written request, the Director of Aviation may issue a Noise Certificate at any time during the year to a Carrier which was not issued a Noise Certificate under Section 5.D. No such Noise Certificate shall be valid for more than one (1) year and one hundred eighty (180) days.

G. All or any portion of a Carrier's PCNEL or CCNEL Allocation may be bought, sold, leased, assigned or otherwise transferred by such Carrier. Should this take place, however, there shall be assessed by the Director of Aviation a Transfer Fee. Such a Transfer Fee shall not apply to transfers of Allocations resulting from the merger of two carriers, or the acquisition of one carrier by another. The Transfer Fee shall be 0.30 dB of the purchased noise exposure level and shall be assessed in addition to the next annual reduction according to Schedule A of this Agreement. This Transfer Fee shall be placed in the Airport Noise Fund pursuant to Section 7. The Noise Certificates of the transferer and transferee Carriers shall be amended by the Director of Aviation to reflect the transfer.

H. A transfer of a PCNEL or CCNEL Allocation shall become effective upon the date of issuance by the Director of Aviation of new Noise Certificates to the Carriers that are parties to the transfer. The Director of Aviation shall record transfers and issue new Noise Certificates within fifteen (15) business days after receipt of a written request from the transferer carrier.

I. No transfer by a Carrier of its PCNEL or CCNEL Allocation shall change the type of the allocation as a PCNEL or CCNEL allocation unless approved in writing by the Director of Aviation.

A change in the type of an allocation shall become effective upon the date of issuance by the Director of Aviation of a new Noise Certificate(s). The Director of Aviation shall record any changes and issue a new certificate(s) within fifteen (15) business days after its approval.

H. Except when the absence of operations is beyond the carrier's control (due to a strike, etc.), if any Carrier which has been issued a Noise Certificate ceases to operate for one quarter or more then the Director of Aviation may revoke the Carrier's Noise Certificate. A Carrier's PCNEL or CCNEL Allocation forfeited under this section shall be placed in the Port's Noise Fund pursuant to Section 7.

I. If the actual PCNEL or CCNEL of a Carrier remains less than eighty (80) percent, calculated on an energy basis, of the Carrier's PCNEL or CCNEL Allocation contained in its Noise Certificate for more than one (1) year, then the Director of Aviation may reduce the Carrier's PCNEL or CCNEL Allocation by not more than ten percent (10%), calculated on an energy basis, below its allocation level during any Enforcement Period. This allocation reduction may be in addition to the annual allocation reduction described in Section 4.A. The Director of Aviation shall amend the Carrier's Noise Certificate to reflect the change. Any portion of a Carrier's PCNEL or CCNEL Allocation forfeited under this section shall be placed in the Airport's Noise Fund pursuant to Section 7.

Section 6—Airport Noise Reduction Provisions

A. Unless otherwise authorized by this agreement, no Carrier may conduct Aircraft Operations which result in its PCNEL or CCNEL meeting or exceeding the TCNEL during any Enforcement period unless it is authorized to do so by a valid Noise Certificate. The TCNEL is to be set at a noise exposure level of 55.00 dB, which is approximately equal to four landing and takeoff cycles of a 727-200/15 QN as defined in Table A-1. However, if in 1997 the number of all exempt Stage 2 aircraft operations (excluding government and international) falling below this threshold exceeds a noise exposure level of 59.00 dB then methods to phase out these aircraft will be examined.

B. Unless otherwise authorized by this agreement, during any Enforcement Period no Carrier may conduct Aircraft Operations which result in its CCNEL exceeding its CCNEL Allocation or its PCNEL exceeding its PCNEL Allocation authorized by a valid Noise Certificate. During any Compliance Period a carrier's PCNEL or CCNEL may not exceed its Enforcement Period Allocation by more than .35 dB.

C. Carriers whose Stage 3 jet aircraft operations at the Airport meet or exceed a specific percentage of all the Carrier's jet operations at the Airport will not be required to meet the allocation limits assigned to them so long as the required percentage of Stage 3 operations is met in the Enforcement Period.

As of the effective date of this Agreement, a Carrier whose operations at the Airport subject to allocation are composed of at least 70 percent Stage 3 aircraft will meet the requirements of this section.

In 1992 this will be increased to 73 percent;
In 1993 this will be increased to 77 percent;
In 1994 this will be increased to 81 percent;
In 1995 this will be increased to 85 percent;
In 1996 this will be increased to 90 percent;
In 1997 this will be increased to 95 percent;

After 1997 the percentage will remain at 95 percent for the remainder of the agreement. If it so desires, a domestic carrier may choose to permanently include its international Stage 3 operations in its Stage 3 percentage; however, in doing so it must also permanently include all of its international operations in its PCNEL or CCNEL calculations and in all other terms and conditions of this agreement.

Section 7—Airport Noise Fund

A. There is hereby established an Airport Noise Fund. The Airport Noise Fund will initially be funded by allocating an amount equal to 10 percent of the Base Period ANEL to the fund. This equals a value of 64.11 dB. In addition, all Transfer Fees, forfeited or abandoned allocations, and airline allocations that have reduced to a level below the TCNEL, will be placed in the Airport Noise Fund. The Airport Noise Fund is to be reduced over time in a manner similar to the passenger carrier and cargo carrier allocation reductions.

B. The Director of Aviation, upon receiving a written request, may grant new or additional noise allocations to Carriers from the noise available in the Airport Noise Fund should the Director of Aviation determine that the grant of such new or additional noise allocation is necessary or desirable. The Director of Aviation shall not grant any new or additional noise allocation if doing so would cause the total of all of the allocations made to exceed the maximum permissible ANEL specified in Section 4 of this Agreement.

C. When considering requests for noise allocation grants pursuant to Section 7.B., the Director of Aviation shall use the following standards in determining whether or not to grant new or additional noise allocations to carriers:

1. contribution to total PC/CCNEL and ANEL;
2. whether the operation is to be conducted with Stage 3 equipment;
3. whether the requesting carrier has appropriate Stage 3 aircraft on order or proposed lease, and the expected delivery date(s) of those aircraft; demonstration that new or retrofitted Stage 3 aircraft will be scheduled at SEA;
4. whether any Stage 2 aircraft operated by the requesting carrier could be retrofitted with FAA-approved devices to meet Stage 3 requirements and whether the carrier is diligently pursuing the certification and use of such device(s) for SEA operations;

5. any history of violations of provisions of the Noise Budget;
6. any history of seeking noise allocation grants in excess of noise created by operations;
- ability to commit to future noise reduction requirements (in excess of existing requirements).

D. The Director of Aviation may allocate noise to carriers from the Airport Noise Fund for a period of time determined by the Director of Aviation.

Section 8—Reporting

A. Within twenty (20) business days following the end of each Compliance Period, each Carrier operating under a Noise Certificate shall submit a report, in a form satisfactory to the Director of Aviation, which sets forth the engine type used on each of its aircraft operated at the airport during the Compliance Period, and the number of takeoffs and landings by these aircraft specified by daytime and nighttime operations.

B. Failure by a Carrier to submit information pursuant to this section shall constitute a basis for revocation of the Noise Certificate issued to such Carrier or reduction in such Carrier's PCNEL or CCNEL Allocation.

C. An intentional misrepresentation of any material fact contained in a report required by this section shall be considered a violation of this agreement.

Section 9—Monitoring

A. The Director of Aviation shall determine compliance by individual Carriers during each Enforcement Period by quarterly comparing the PCNEL or CCNEL allocations in each Carrier's Noise Certificate with calculations of the Carrier's actual PCNEL or CCNEL, using landing reports, scheduled flight times and actual equipment types, in accordance with the methods specified in Schedule A.

B. Within forty-five (45) days following the end of each Enforcement Period, the Director of Aviation shall calculate the actual PCNEL or CCNEL of each Carrier and compare it with the Carrier's PCNEL or CCNEL Allocation authorized pursuant to a valid Noise Certificate or otherwise provided under this agreement. A PCNEL or CCNEL produced by a Carrier in any Enforcement Period or in any Compliance Period in excess of a Carrier's authorized PCNEL or CCNEL will be calculated as the numerical differences between the authorized and actual PCNEL or CCNEL.

E. Within forty-five (45) days following the end of each Enforcement Period, the Director of Aviation shall report to the Port Commission on operations during the previous Enforcement Period, identifying any Carrier which has exceeded its noise allocation and the extent to which the noise allocation was exceeded.

Section 10—Enforcement

A. Any carrier which has exceeded its authorized PCNEL or CCNEL during an Enforcement Period (as defined in Section 6.B.) will be assessed a noise-related operating fee of up to $1000 for each equivalent aircraft cycle or portion thereof per day by which it exceeds its Allocation. This noise-related operating fee shall not exceed $1,000,000 for any Enforcement Period.

B. A carrier will be assessed a fee if it exceeds its PCNEL OR CCNEL allocation during a Compliance Period by more than 0.35 dB one or more times in any Enforcement Period (See Section 6.B.). Such a fee will be assessed at the end of the Enforcement Period, and will apply only to the Compliance period in which the carrier's PCNEL or CCNEL most exceeded its Allocation during the Enforcement Period.

This fee is to be assessed at a rate of up to $500 for each equivalent aircraft cycle per day or portion thereof by which the carrier has exceeded its allowable compliance period noise level. The allowable compliance period noise level is equal to the carrier's PCNEL or CCNEL Allocation plus .35 dB. This fee is not to exceed $250,000 per Carrier per Enforcement Period. This fee is to be assessed independently of any other fees.

C. All such noise-related operating fees shall be applied by the Port to offset costs associated with noise mitigation and abatement measures at the Airport and shall be due and payable upon receipt of notice from the Director of Aviation. Such fees are subject to public disclosure.

D. In addition to the assessment of a noise-related operating fee(s), a Carrier whose actual PCNEL or CCNEL has exceeded its PCNEL or CCNEL allocation in two of the three most recent Enforcement Periods by more than 1.0 decibel may have its PCNEL or CCNEL allocation permanently reduced by 0.5 decibels.

Section 11—Dispute Resolution

A. Any person who claims to be adversely affected by any particular provision of this agreement or any determination, order or decision of the Director of Aviation made pursuant to this agreement may petition the Director of Aviation to grant extraordinary relief from the requirements of the provision pursuant to Section 12 or to review the Director of Aviation's determination, order or decision. Petitions must be in writing and must set forth the petitioner's position and its basis, including all facts upon which the petitioner relies. The Director of Aviation may require the petitioner to provide additional information in support of its petition. The Director of Aviation's final decision shall be based upon the petition, the information provided by the petitioner, and any other information in the record. The Director of Aviation shall issue his or her final decision within thirty (30) days of the date the petition is received by the Director of Aviation, or if the Director of Aviation has required the petitioner to provide additional information in support of its petition, then within thirty (30) days of the date that information is received by the Director of Aviation.

B. A petitioner adversely affected by a final decision of the Director of Aviation under Section 11.A. may within thirty (30) days of the Director of Aviation's decision petition the Chief Executive Officer to review the Director of Aviation's decision. Filing of such a petition shall stay the decision of the Director of Aviation. Any petition for review must be in writing and must set forth all objections to the Director of Aviation's decision and the basis for the objections. The Chief Executive Officer may supplement the record if he or she believes additional information may be helpful. Data relied upon by the Chief Executive Officer must be in the record or first provided to the carrier who shall be given the opportunity to comment thereon. The Chief Execu tive Officer shall issue a decision within sixty (60) days of receiving a petition for review.

Section 12—Extraordinary Relief

A. Waivers of violations of this agreement may be granted by the Director of Aviation upon a clear showing by the Carrier so requesting that the violation occurred due to (i) the mechanical failure of scheduled equipment which necessitated the substitution of other equipment for a period not to exceed three (3) days unless justified, (ii) a diversion of an aircraft to the Airport, or (iii) other circumstances beyond the reasonable control of the Carrier.

B. The Director of Aviation may also grant such extraordinary relief from the provisions of this agreement as may be deemed necessary or desirable. Such relief shall be of limited duration not to exceed one year unless renewed, and may be subject to reasonable conditions.

Section 13—Severability

If any portion of this agreement or if any application of this agreement is held unconstitutional or otherwise unlawful, the remainder of this agreement and the remaining applications of this agreement shall not be affected thereby.

Schedule A
Computation of Noise Exposure Levels and Allocations
Seattle-Tacoma International Airport
Noise Budget

1. Introduction

This schedule describes the formulas and process used to calculate the Noise Exposure Levels (NEL) and related noise statistics for measuring compliance with the Seattle-Tacoma International Airport Noise Budget. The Port will provide a personal computer-based spreadsheet to facilitate the computations.

2. Noise Exposure Level Computation Process — Compliance Period PCNEL

Step 1 Calculate the number of daytime and nighttime arrivals and departures for each Aircraft Type as a daily average over the entire Compliance Period as follows:

a. An Aircraft Type is a specific aircraft model/engine combination as listed in Table A-1, "Reference SELs" (sound exposure level). If a carrier operates an aircraft model and/or engine combination not listed in the table, the closest equivalent Aircraft Type shall be used and the substitution noted in an attachment to the calculation. The Port may require the use of a particular equivalent Aircraft Type.

b. For each Aircraft Type in the carrier's fleet operated at the Airport, calculate the total number of operations over the Compliance Period in each of the following categories: daytime arrivals, daytime departures, nighttime arrivals, and nighttime departures. The scheduled time of arrival or departure shall be used.

c. Divide each total by the number of days in the Compliance Period to get the daily averages.

Step 2 For each Aircraft Type, calculate the Equivalent Departures (ED) and Equivalent Arrivals (EA) as follows:

a. ED = (Average Daytime Departures) + (10 x Average Nighttime Departures)

b. EA = (Average Daytime Arrivals) + (10 x Average Nighttime Arrivals)

Step 3 Using the Reference SELs in Table A-1 (or FAA-approved equivalent data), for each Aircraft Type, compute the Partial PCNEL for Departures and the Partial PCNEL for Landings as follows:

SEL_A = SEL at Point A; 30,000 ft. from start of departure roll
SEL_B = SEL at Point B; 60,000 ft. from start of departure roll
SEL_C = SEL at Point C; 90,000 ft. from start of departure roll
SEL_D = SEL at Point D; 20,000 ft. before arrival touchdown point

Note: The value 86,400 in the following formulas is the number of seconds in one day and is part of the conversion from individual aircraft event noise to overall averages.

a. Partial PCNEL for Departures=

$$10 \times \text{Log} \frac{ED \times [\text{Antilog}(SEL_A/10) + \text{Antilog}(SEL_B/10) + \text{Antilog}(SEL_C/10)]}{86{,}400}$$

b. Partial PCNEL for Arrivals=

$$10 \times \text{Log} \frac{EA \times [\text{Antilog}(SEL_D/10)]}{86{,}400}$$

Step 4 For each Aircraft Type, compute the contributions to the PCNEL as follows [note: A comparison of the PCNEL contributions for each Aircraft Type can assist in identifying the aircraft's relative contribution to a carrier's total noise.]:

Aircraft PCNEL =

$10 \times \text{Log}[\text{Antilog}(\text{Partial PCNEL}_{Dep}/10) + \text{Antilog}(\text{Partial PCNEL}_{Arr}/10)]$

Step 5 Compute the Compliance Period PCNEL for all of the carrier's operations as follows:

Compliance Period PCNEL =

$10 \times \text{Log}\{\text{Antilog}(\text{Aircraft}_1 \text{ PCNEL}/10) + \text{Antilog}(\text{Aircraft}_2 \text{ PCNEL}/10) + \ldots\}$

including all of the carrier's aircraft types 1,2,....

3. Noise Exposure Level Computation Process — Compliance Period CCNEL

Step 6 Compute the Compliance Period CCNEL for each air cargo carrier in the same manner as illustrated in Section 2. Steps 1 through 5. substituting the term CCNEL for PCNEL wherever the latter appears.

4. Noise Exposure Level Computation Process — Compliance Period ANEL

Step 1 The ANEL for the Airport during the Compliance Period is calculated as follows:

SEA ANEL =

10 x Log {(Antilog(PCNEL$_1$/10) + Antilog(PCNEL$_2$/10) +...) + (Antilog(CCNEL$_1$/10) + Antilog(CCNEL$_2$/10) +...)}

including all of the passenger carriers 1.2.... and all of the cargo carriers 1. 2. ....

5. Noise Exposure Level Computation Process — Enforcement Period PCNEL, CCNEL, & ANEL

An Enforcement Period PCNEL. CCNEL. or ANEL is calculated using the same basic formula. which adds the four quarterly Compliance Period values and is calculated as follows:

Enforcement Period PCNEL. CCNEL. or ANEL =

$$10\text{Log}\frac{\text{Antilog}(EP_1/10)+\text{Antilog}(EP_2/10)+\text{Antilog}(EP_3/10)+\text{Antilog}(EP_4/10)}{4}$$

where EP_1, EP_2, EP_3, & EP_4 are the values of PCNEL. CCNEL. or ANEL for each of the four Compliance Periods.

6. Computation Process — Subsequent Allocations

Each year the Director of Aviation shall issue to carriers with expiring noise certificates, new noise certificates in the amount of the expiring certificates reduced as follows:

For the Calendar Year	PCNEL Reductions	CCNEL Reductions
1991	0.20 decibels (5%)	0.00 decibels (0%)
1992	0.20 decibels (5%)	0.00 decibels (0%)
1993	0.30 decibels (7%)	0.15 decibels (3%)
1994	0.30 decibels (7%)	0.15 decibels (3%)
1995	0.30 decibels (7%)	0.35 decibels (8%)
1996	0.30 decibels (7%)	0.40 decibels (9%)
1997	0.30 decibels (7%)	0.40 decibels (9%)
1998	0.35 decibels (8%)	0.40 decibels (9%)
1999	0.35 decibels (8%)	0.40 decibels (9%)
2000	0.35 decibels (8%)	0.40 decibels (9%)
2001	0.35 decibels (8%)	0.40 decibels (9%)

* Percentage reductions shown are approximate reductions relative to the previous year. The controlling number is the decibel reduction number.

7. Initial Allocations

Initial allocations for carriers are as follows:

Airline	PCNEL or CCNEL
Alaska Air Group	68.96
United Airlines	65.78
Delta Airlines	65.78
Northwest Airlines	64.12
American Airlines	64.07
Continental Airlines	62.35
Federal Express	60.86
Amerijet	59.89
DHL	57.82
TWA	55.31
U.S. Air	55.30

SEATTLE-TACOMA INTERNATIONAL AIRPORT
NIGHTTIME LIMITATIONS PROGRAM

October 1, 1990

(Doc. # NTL92317.PM4)

Section 1—Statement of Purpose

The purpose of this agreement is to achieve reductions in the noise level at Seattle-Tacoma International Airport (SEA) through restrictions on the use of Stage 2 aircraft during nighttime hours.

Section 2—Effective Date

This agreement shall become effective on October 1, 1990.

Section 3—Definitions

For the purposes of this agreement, the following definitions will apply:

A. Aircraft — All subsonic transport category large airplanes, subsonic turbojet powered airplanes and supersonic transport category airplanes, all of which were ever certificated or recertificated at a maximum gross takeoff weight in excess of 75,000 lbs. by the United States.

B. Aircraft Operation — An aircraft landing or takeoff at the Airport.

C. Airport — Seattle-Tacoma International Airport (SEA).

D. Carrier — Any entity conducting commercial aircraft operations at the Airport, including cargo service.

E. Chief Executive Officer or CEO — The Chief Executive Officer of the Port of Seattle or a designee.

F. Managing Director of Aviation — The Director of the Port of Seattle Aviation Division or a designee.

G. Low Bypass Engine — A jet aircraft engine with a bypass ratio of two or less.

H. Maintenance Facility — A permanent, staffed facility for providing aircraft repair and maintenance.

I. Port — The Port of Seattle.

J. Stage 2 Aircraft — An aircraft that is certificated by the Federal Aviation Administration as complying with the noise levels prescribed in 14 C.F.R. Part 36. Appendix C. Section 36.5(a)(2).

K. Stage 3 Aircraft — An aircraft that is certificated by the FAA as complying with or with a placard operated to meet the noise levels prescribed in 14 C.F.R. Part 36. Appendix C. Section 36.5(a)(3).

L. Quarterly Period — Successive three-month periods occurring at regular intervals, beginning on January 1, April 1, July 1, and October 1 of each calendar year.

M. Exemption -- Permission to operate outside the normal provisions of the Nighttime Limitations Program on an incidental, emergency or nonscheduled basis.

N. Temporary Variance -- Written permission to operate outside the normal provisions of the Nighttime Limitations Program on a scheduled or continuing basis for a period not to exceed four months. At the discretion of the Managing Director, a temporary variance may be granted immediately if the situation is deemed an emergency and the granting of a variance would be in the public interest.

O. Variance -- Written permission to operate outside the normal provisions of the Nighttime Limitations Program on a scheduled or continuing basis.

Section 4—Agreement

A. Stage 3 Requirement for Aircraft Types Not In Operation Between March 31, 1989 and March 31, 1990.

Effective October 1, 1990, no Stage 2 low bypass jet aircraft operations may be planned or scheduled at the Airport between the hours of 12:00:00 midnight and 5:59:59 a.m. unless the carrier can establish that the operation in question represents a continuation of a Stage 2 low bypass operation that was conducted between March 31, 1989 and March 31, 1990. All such exempted operations will be grandfathered for a period of two (2) years from the date of this agreement.

B. Limitation on Nighttime Stage 2 Operations.

Stage 2 aircraft shall not operate at Sea-Tac International Airport during the following hours:

(1) Effective October 1, 1992, Stage 2 aircraft may not operate from 12:00:00 midnight to 5:59:59 am.

(2) Effective October 1, 1993, Stage 2 aircraft may not operate from 11:00:00 pm to 6:29:59 am.

(3) Effective October 1, 1994, Stage 2 aircraft may not operate from 10:30:00 pm to 6:44:59 am.

(4) Effective October 1, 1995, Stage 2 aircraft may not operate from 10:00:00 pm to 6:59:59 am.

C. Maximum Nighttime Noise Limits.

After 1997 the Port will determine with input from the carriers and the public whether a maximum noise limit for aircraft operating during the nighttime hours is appropriate and consistent with its obligation as an airport proprietor.

D. Variances.

(1) Upon the effective date of this agreement, requests by operators for a variance from any provision of this agreement must be made in writing to the Managing Director of Aviation at least 60 days prior to the date the variance, if granted, would become effective. Within seven days following the receipt of such petition the Managing Director of Aviation shall notify the general public and shall request written comments within twenty-one days of the date of notice. Within twenty-one days following the deadline date for receipt of comments the Managing Director of Aviation shall grant or deny the petition.

(2) A variance pursuant to Section 4.D.(1) may be granted only if the Port finds, in the exercise of its discretion, that the granting of a variance is in the public interest. In determining the public interest the Port shall consider, among any other factors it believes to be relevant, the following:

(a) the noise impact upon the community should the variance be granted;

(b) consistency of treatment in granting a variance;

(c) the economic and technological feasibility, considered on an industry-wide (cargo or passenger industry) basis, of complying with this agreement in the absence of a variance;

(d) whether the carrier is taking bona fide measures, to the best of the carrier's ability, to comply with this agreement;

(e) whether the granting of a variance would cause the carrier to exceed its Noise Budget allocation.

(3) A temporary variance of up to four months may be granted to a carrier that demonstrates to the satisfaction of the Managing Director of Aviation that unusual or emergency circumstances exist necessitating a temporary variance from part or all of these provisions. To obtain the variance, the carrier must demonstrate that there are no Stage 3 equivalent aircraft available which are suitable for operations of the carrier under the circumstances cited by the carrier nor are there suitable retrofits, hush-kits or reengine programs available. The carrier must show that it is making a good faith effort to achieve such as they become available and will commit to use them at Sea-Tac when they are available. Section D(1) does not apply to the granting of a temporary variance.

The Port may grant a variance in part, or for limited duration, or may impose such conditions on the granting of a variance which it finds appropriate to accomplish the purposes of this agreement as long as it is consistent with the Port's authority as airport proprietor.

E. Exemption for Maintenance Operations.

(1) With due consideration to the spirit and intent of this agreement to phase out Stage II aircraft operations at night, the Managing Director of Aviation may grant a maintenance exemption to a carrier that operates a maintenance facility at the Airport or has a service agreement with the operator to use such a facility for operations in revenue and non-revenue service upon the following conditions:

(a) the maintenance exemption shall apply only to operations performed for the specific purpose of positioning aircraft to receive periodic or regular maintenance at the Airport;

(b) under the maintenance exemption, all non-revenue operations may be exempted from the requirements of Section 4.A. and may be excluded as operations under Section 4.B., but must comply with all other provisions of this regulation;

(c) the original term of the exemption shall not exceed two years and may be renewed by the Managing Director of Aviation at one year intervals;

(d) all operations pursuant to a maintenance exemption must be reported to the Managing Director of Aviation on a monthly basis by the fifteenth day following the end of the month identifying each operation by type of aircraft, type of engine, date and time of exempt operation, aircraft registration number, and whether the aircraft was in revenue or non-revenue service; and

(e) the carrier must agree to comply with such other terms as are established by the Managing Director of Aviation.

(2) A non-revenue operation for emergency maintenance shall be exempt from the requirements of Sections 4.A. and 4.B. if the carrier obtains an emergency maintenance exemption. To obtain an emergency maintenance exemption for the arrival and/or departure of the aircraft, the carrier must make a verbal request to the Managing Director of Aviation prior to the operation and, within seven days after the operation, submit to the Managing Director of Aviation a written explanation of the circumstances which necessitated the granting of the exemption.

F. Other Exemptions.

(1) An operation at the Airport by an aircraft which does not comply with the requirements of Sections 4.A. or 4.B. shall be exempted from the requirements of those sections, if the carrier demonstrates to the satisfaction of the Managing Director of Aviation that:

(a) The noncomplying aircraft was operating in the place of a complying aircraft which was unable to perform a scheduled operation at the Airport because of extreme circumstances; or

(b) The operation was necessitated by an in-flight emergency.

(2) To obtain an exemption under Section 4.F.(1), a carrier must before the end of the next business day after the operation has occurred verbally notify the Managing Director of Aviation that such an operation has occurred, and if the Managing Director requests, within twenty-one (21) days after the operation has occurred, submit a written explanation to the Managing Director of Aviation of the circumstances necessitating the request for exemption.

(3) An operation by an aircraft that does not comply with the requirements of Section 4.A. or 4.B. shall be exempt from the requirements of those sections if the operation is otherwise permitted under this agreement at the published, scheduled time of the operation and is delayed because of unforeseen or emergency circumstances, or factors beyond the control of the carrier.

(4) Operations conducted by or on behalf of any governmental agency, or for purposes of fire prevention or search and rescue purposes shall be exempt from all provisions of this agreement. This provision does not apply to services provided by or for the U.S. Postal Service.

(5) International operations conducted pursuant to a bilateral agreement with the United States Government shall be exempted from all provisions of this agreement.

G. Reporting Requirement.

(1) Each carrier shall, when reasonably requested by the Port, file a report listing the carrier's fleet: the type of aircraft, the type of engine, the aircraft registration number, and whether the aircraft is a Stage 2 or Stage 3 aircraft.

(2) Each carrier shall when reasonably requested by the Port, file a report listing the operations that have occurred during restricted hours and whether these operations have been carried out by Stage 2 or Stage 3 aircraft.

(3) An intentional misrepresentation of any material fact contained in a report required by Sections 4.G.(1) and 4.G.(2) shall be considered a violation of this agreement.

H. Enforcement.

Operations not in accordance with this agreement shall be subject to fees in the following manner and are subject to public disclosure:

(1)	1st operation in a Quarterly Period	Letter of admonishment from the Managing Director of Aviation to be followed by a meeting of the Port and the carrier to assess circumstances and develop a mitigation plan.
(2)	1st operation exceeding the terms of the mitigation plan in a Quarterly Period	Assessment of a fee not to exceed $500
(3)	2nd operation exceeding the terms of the mitigation plan in a Quarterly Period	Assessment of a fee not to exceed $1000
(4)	Additional operations exceeding the terms of the mitigation plan in a Quarterly Period	Assessment of a fee not to exceed $2000.

Section 5—Severability

If any portion of this agreement or if any application of this agreement is held unconstitutional or otherwise unlawful, the remainder of this agreement and the remaining applications of this agreement shall not be affected thereby.

SOUND INFORMATION

FACT SHEET #10
2/14/92

THE NOISE MEDIATION PROJECT

INTRODUCTION

On March 31, 1990, after a year and a half of meetings, the Sea-Tac Noise Mediation Committee (Mediation Committee) reached agreement on a package of noise reduction measures for Seattle-Tacoma International Airport. The package contained both long-term and short-term measures that are expected to reduce aircraft noise by at least 50 percent by the year 2001. This noise reduction will be in aggregate noise and will occur primarily as a result of the Sea-Tac Noise Budget and Nighttime Limitations Programs. As stated in Port of Seattle Commission Resolution No. 3016, the noise reduction package will provide substantial noise mitigation and abatement without limiting capacity or the economic benefits that result from the successful operation of the airport.

The elements of the Mediation Agreement include a noise reduction program called a "Noise Budget"; a phase out of stage 2 aircraft at night; a doubling of the rate of home insulation, plus other improvements to the noise insulation program; improvements to procedures directing and monitoring aircraft using noise abatement routes; ground noise controls; state of the art flight track monitoring and; a committee to monitor implementation of the Mediation Agreement.

The "package" concept, which introduced a number of actions together, was meant as a means to reduce noise in a variety of ways and gave those involved in mediation the opportunity for trade-offs on programs that were especially significant to them. For that reason, a decision to implement any one program or action was contingent on acceptance of the entire package. The various elements of the package were estimated to cost approximately $29 million, of which nearly $26 million would be used for noise remedy modifications, primarily to the sound insulation program. The Port stated its intention to apply for FAA funding for these improvements.

BACKGROUND

The idea for using mediation to develop noise programs for Sea-Tac came from a citizen committee called the Joint Committee on Aircraft Overflights (Joint Committee). The Joint Committee grappled with the issue of aircraft noise and flight patterns. Its members decided that the problem was so complex and involved so many neighborhoods in the greater Seattle-Tacoma metropolitan area, that a new and innovative process was needed that would be supported by many different areas. The Joint Committee went on to recommend the process itself - environmental mediation. This is a consensus-based approach that had been used before in the Pacific Northwest (but not at an airport), to resolve conflicts over environmental issues.

The Port of Seattle Commission, realizing that noise was fast becoming an issue that could limit Sea-Tac's capacity to meet growing air travel demand, accepted the recommendation by the Joint Committee on Aircraft Overflights and formally adopted it on September 8, 1987 in Port Commission Resolution 3016.

The Convening Process. The Noise Mediation Project began with a convening process. To initiate and carry out this work, the Joint Committee selected professional mediators with experience in environmental mediation. Their job was to ascertain if mediation was likely to be a productive approach to the problem of aircraft noise. They were to identify and then interview key members of the various parties required for such an effort. With the help of Port staff and members of the Joint Committee, the mediators contacted a number of individuals within the airlines, chambers of commerce, FAA, and numerous citizen groups. They listened to their concerns about aircraft noise, explained what a mediation process would entail and asked if the approach sounded worthwhile. Finally they questioned interviewees about their willingness to be part of such an endeavor.

At the end of the convening process, the mediators reported to the Port Commission that a number of issues had been identified as concerns to the people interviewed. They reported that those interviewed were willing to give mediation a chance if these concerns could be addressed.

NEGOTIATING PHASE.

The Mediation Committee. On November 14, 1988, the Mediation Committee met for the first time. The parties at the table included the Air Line Pilots Association, the Airlines, Airport Users (representatives from the area's chambers of commerce), FAA, Port of Seattle, and impacted communities. In all, there were twenty people who sat at the negotiating table representing the six different parties called "caucuses". Each caucus was to come to the table speaking with one voice. For some caucuses, such as the Airline caucus and the community caucus, this was very difficult due to the wide divergence of opinion on some issues. The Airline caucus included the Air Transport Association, United Airlines, Alaska Airlines, Federal Express and Horizon Airlines.

Community Caucus. The community caucus was the largest and most diverse of all the caucuses. It was the only one that was further subdivided into subcaucuses, with five different ones identified by geographic area. Each subcaucus came prepared to the table by meeting independently to negotiate its own procedures and positions among its members. Because the majority of caucuses and subcaucuses themselves adhered to the rule of consensus, this structure enabled individuals to have an influence on the outcome. In fact, the ground rules, as described later in this document, refer to these active caucus participants as "negotiators". This was an im-

portant feature for members of the community caucus, approximately seventy-five (75) active participants. Many of these individuals were also active in their community groups and councils and were charged with keeping these groups informed.

Formation of the community caucus and subcaucuses was essentially a system of self-selection, as there was no one entity that represented all noise-impacted citizens. There were, however, many individuals that had been active over the years in efforts to reduce aircraft noise. During the convening phase, a number of these individuals were contacted and became the first members of the community caucus. As more publicity was available, additional members were funnelled into the process. The Port of Seattle funded the hiring of a team of community coordination professionals to assist the diverse groups in working productively together. This team of individuals worked with the citizens, facilitating meetings and coordinating the flow of information.

Special Features. The Noise Mediation Project had some special features that were recommended by the Joint Committee. The process was completely voluntary, not a result of legal action. Community leaders worked directly with decision-making representatives of the agencies and businesses and all decisions were to be reached by consensus. Thus, no one party could control the outcome. This was further ensured by the committee's right to select its own consultants: mediators, community coordination professionals and technical consultants for noise, airspace and legal aviation issues. The Port of Seattle funded the project at nearly $1 million.

Public Agency Participation. At the beginning of mediation, the Mediation Committee invited a number of public agencies and officials to attend mediation meetings so they would understand the committee's work. The cities of Seattle and Mercer Island designated Mediation Committee members as official liaisons and the cities of Des Moines and Normandy Park both had councilmen who were on the Mediation Committee itself. In addition, one state representative was on the Committee. In general, however, the flow of information to public agencies and officials was handled in two ways: through formal briefings and through mailings of information materials or telephone calls. Local and state officials and agencies were on the mailing list, received meeting notices and were invited periodically to receive briefings. The committee designated the mediators as the primary sources of information for public agencies and officials.

Subcommittees. The Mediation Committee made wide use of subcommittees to perform special tasks, such as selecting a mediation team, a community coordination team and a team of technical consultants. Subcommittees were used in developing ground rules, schedules, educational presentations and technical options. They were used to review the work of the various consultant teams and in designing and implementing a public information program. All subcommittees included a cross section of membership from the various caucuses and were facilitated by a member of the Mediation

Committee. The subcommittees included those for selection of the mediation team, the community coordination team and the technical analysis team. They also included the Technical Services Subcommittee, the Options Subcommittee, the Ground Rules Subcommittee, and the Public Information Subcommittee.

As with the work of the Mediation Committee itself, all subcommittees worked on consensus. The subcommittees were authorized by the Mediation Committee to develop recommendations and to then bring these recommendations back to the Mediation Committee for action.

Ground Rules. The first agreement that the Mediation Committee made was on a set of ground rules. These ground rules included a statement of the purpose of mediation. The purpose of the mediation process was twofold and was stated as follows:

> 1. The purpose of the mediation process is to reach a consensus on programs which will mitigate and/or reduce noise and which will be implemented for Seattle-Tacoma International Airport. Any noise impact caused by operation of aircraft into and out of Seattle-Tacoma International Airport may be part of the negotiations.
>
> 2. It is intended that the consensus will include a commitment by each caucus to carry forward and fully support the consensus programs through necessary administrative and other processes of implementation.

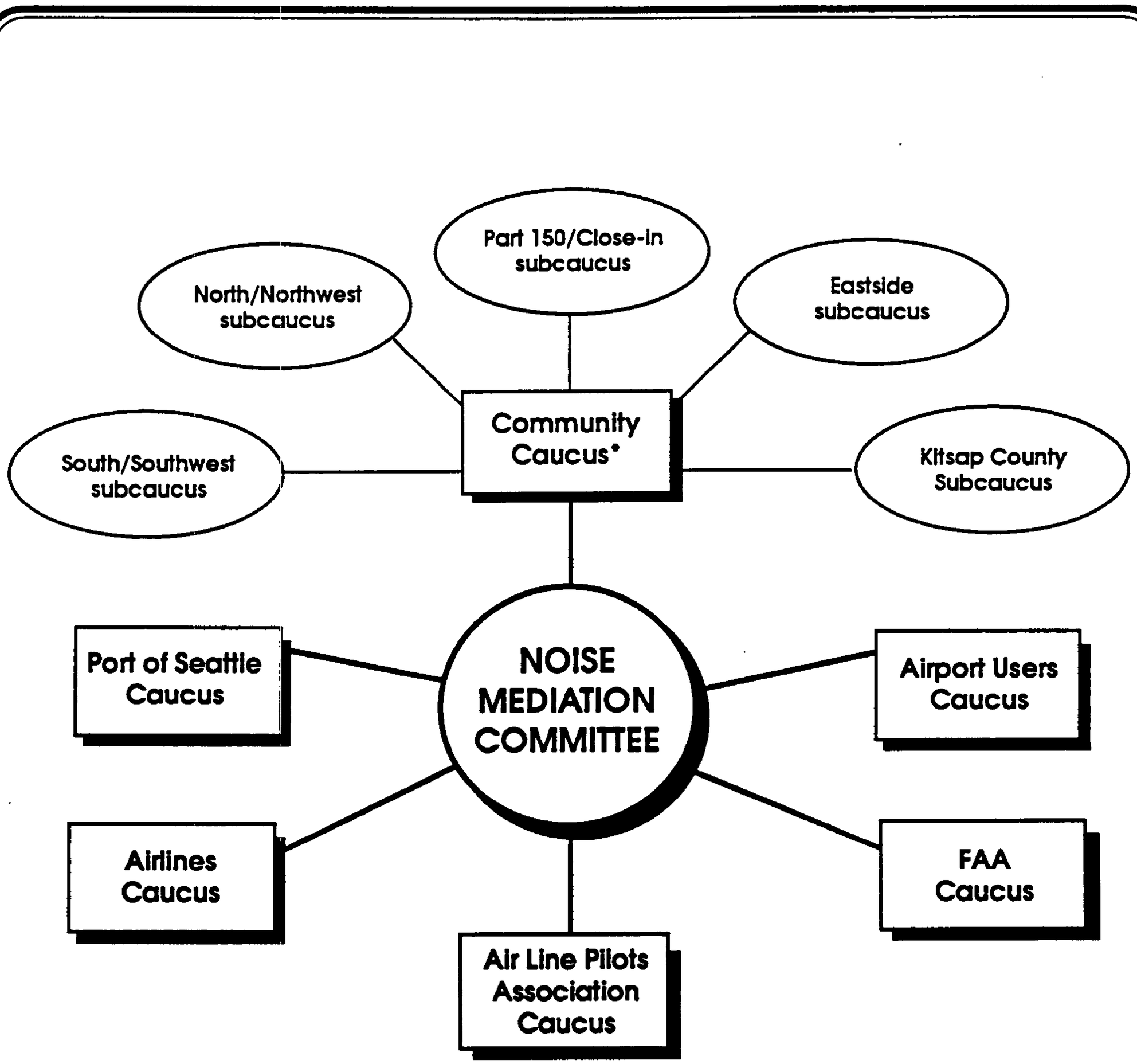
The ground rules also included rules for group decision making, personal behavior and committee and subcommittee procedures. The task of developing these ground rules went to a subcommittee called the Ground Rules Subcommittee.

Education Program. Prior to beginning the actual negotiations on technical matters, the Mediation Committee formed the Technical Services Subcommittee to develop a number of educational presentations that would allow all members of the process to obtain a baseline of information from which to deliberate. The subcommittee decided on topics and on speakers. Speakers were selected to present a range of views.

Identifying Interests. Before getting started on the negotiations over noise programs, the mediators spent time with the Mediation Committee asking each party to identify its "interests". The mediators explained that the participants should avoid locking themselves into "positions," which were described as inflexible and incompatible with the give-and-take nature of environmental mediation.

An "interest" was described as a need that was so important to the party that in order for it to agree to a proposal, it must be convinced that its interest would be met in some important way. The party would refrain from saying

Table 1



* A professional community coordinator was selected by citizens to assist the subcaucuses in working effectively together.

"how" the interest could be met. Presumably, agreement could be reached on any number of issues as long as the vital interest of each group could be accommodated. It was for this reason that the concept of a package became so important. The committee decided to pursue a package of actions that would give the optimum noise reduction, yet would be able to include enough different items that everyone's vital interest could be met.

IDENTIFYING TECHNICAL OPTIONS

One of the educational presentations that the Mediation Committee received was an overview on the many noise abatement options that were available and in practice throughout the United States and the world. The committee used information from this presentation to brainstorm all the noise abatement actions that should be examined for Sea-Tac. The Options Subcommittee was then formed to study the technical options and make recommendations to the full Mediation Committee. The subcommittee categorized the options and developed a process for hiring a technical consulting team to do the detailed analysis of the preferred options.

From a list of seventy-three possibilities, the Subcommittee with the assistance of its technical consulting team, narrowed the options by first identifying what problems were being experienced by residents around Sea-Tac and then listing options under those problems. Many of the options were found to be redundant; others impractical. For those options that were seen as good candidates, a second round of discussions occurred based on data and explanations of the value of the option from the consultants.

When the options were finally narrowed to final candidates, the Options Subcommittee divided into working groups to tackle in detail how each option should be described and proposed. This final round of work went back to the full Mediation Committee in the form of a draft package of noise abatement actions for consideration. The Mediation Committee then negotiated over this package, agreeing to its final form on March 31, 1990 after nearly a year and a half of meetings.

The contents of the agreement include:

> A "noise budget" or allocation of noise for the Airport and airlines that will decrease over time. The budget will limit and control aircraft noise and accelerate use of the new (quieter) Stage III airplanes. The goal is for Sea-Tac's fleet to be nearly 100-percent Stage III by the year 2001. This measure in conjunction with the other elements of the agreement will reduce noise 50% by 2001.

> Nighttime restrictions on the use of Stage II aircraft. For the first two years of the program, no new Stage II flights may be introduced between midnight and 6 a.m. Only existing Stage II flights that have "grandfathered" rights may operate during these hours. Effective October 1, 1992, no Stage II aircraft may operate between midnight and 6 a.m. Over the next three years the restricted hours expand until they encompass 10 p.m. to 7 a.m. on October 1, 1995.

> Doubling of the rate of the Port's existing sound insulation program and changing the "cost-share" insulation area to 100% Port paid.

> Control of aircraft ground noise by restricting use of engine power for backing aircraft away from gates, improving run-up regulations, investigating the

reduction of reverse thrusts (used in landings), limiting use of auxiliary power units, and erecting a "hush" facility if a maintenance base is built at Sea-Tac.

Implementation of a state-of-the-art flight track monitoring system to better monitor compliance with noise abatement flight track procedures.

Improvement of flight procedures through the Elliott Bay corridor and over Puget Sound to minimize jet noise to adjacent residential areas, with special attention to nighttime flights.

Control of noise from "single event" aircraft operations that are particularly annoying by improving the Port's complaint hotline and monitoring systems.

Establishment of a Noise Abatement Committee to ensure implementation of the agreement.

The committee could not reach agreement on changes to flight patterns. Special language was included in the agreement stating that this inability of the committee did not in any way negate the agreed upon actions.

PUBLIC INFORMATION

Although the public was actively involved in mediation through the activities of the community caucus, the Public Information Subcommittee was formed to develop a strategy to inform the community at large. A program was developed that included editorial boards, press releases, articles for newspapers and newsletters, display boards, speakers bureau, special informational bulletins and a series of eight (8) workshops. The mailing list for informational newsletters included approximately 41,000 names.

The workshops were a very important element of the program. They were held in the community subcaucus areas in community facilities throughout the Puget Sound area from February 26 through March 8, 1990. This allowed input from the general public prior to the scheduled conclusion of the committee's work. Specifically, these workshops provided detailed information on the preferred options and solicited comments from the public. They were advertised in the major and community newspapers.

IMPLEMENTATION

The Mediation Agreement contained only two implementation dates: October 1, 1990 for the Nighttime Limitations Program and January 1, 1991 for the Sea-Tac Noise Budget. It was understood that the Port of Seattle and the airlines would need to work out a number of the final details of these two programs. The Port began discussions to finalize these two programs on May 8, 1990 when it invited airline representatives to a comprehensive briefing. Over the next eight months, the Port spoke by telephone and corresponded with each airline providing draft documents for review

and comment. All comments from the airlines were taken into consideration and, if in accordance with the Mediation Agreement, accommodated as much as possible. All major concerns were settled prior to making the Noise Budget operational.

SEA-TAC NOISE ABATEMENT COMMITTEE

The remaining programs were implemented according to a schedule developed by the Port staff in cooperation with the Sea-Tac Noise Abatement Committee. This committee was mandated by the Mediation Agreement itself to ensure that implementation would occur in a timely fashion and in accordance with the agreement. It's membership was drawn from the original Mediation Committee.

Section 4.0

Noise Control Options

Noise Mediation Project Seattle-Tacoma International Airport

Section 4.0

Noise Control Options

4.1 Introduction

The Noise Mediation Committee examined a number of potential noise control alternatives for minimizing the impacts from aircraft noise at Sea-Tac. These various alternative measures are referred to as "Options". The Committee considered a very large and broad range of options that was eventually narrowed down to those options that appeared to be the most promising for reducing the noise levels at Sea-Tac. These final options were then analyzed in more specific detail. These final noise control options were the basis for the Mediated Noise Control Program for the Airport.

The following section details the initial list of options and the preliminary criteria and methodology used to narrow the list to those options that were determined to be the most promising. The noise control options chosen as the basis for the Mediated Noise Control Program at Sea-Tac were subsequently evaluated.

4.2 Preliminary Options

The initial process of option development allowed Committee members and Subcaucus members to suggest any possible measures for reducing the noise problems at Sea-Tac. Options contained in this chapter were suggested for study by these groups. This does not imply that any group actually recommended these measures, but only that they warranted a more detailed review. Through this process, a list of seventy-three options was developed.

The initial options were categorized relative to the method used to control or limit noise. For example, noise budgets or nighttime limitations were listed as use restrictions. The categories included:

Use Restrictions
Preferential Runway Use
Flight Corridors and Airspace Changes
Aircraft Cockpit Procedures
Control of Ground Noise
Other

These measures were then re-categorized relative to the type of noise problem that each option was designed to control. The purpose of this re-categorization was to allow for the review of each option in terms of how each would ultimately be combined into the elements of an overall noise control program. These categories are as follows:

Nighttime Noise
Limit Overall Growth in Noise
Reduce Impact Area (Facilities, Operational & Land Use Changes)
Flight Corridors & Airspace Changes
Control of Ground Noise
Noise from Aircraft Deviating from Procedures
Other Options
Method of Analysis

Using the above listed categories of noise control, each of these options was reviewed relative to the potential for reducing noise. These options are presented in Table 4-1. This table includes the name of each option, categorized relative to the noise issue. The committee or subcaucus that recommended the study of each of these options is also listed.

The timing for implementation of these options and when the noise benefit from the option would be expected to occur varies for each noise control option. Each option was reviewed relative to this time frame, and categorized as either short range or long range. Short Range refers to options that could be implemented, and the benefits realized, within a two year time frame. Long Range refers to options that will take longer to implement.

Three factors were involved in the screening process used to evaluate the options. These included: (1) the potential effectiveness for reducing the particular noise issue. (2) the feasibility of implementing this option at Sea-Tac, and (3) any disadvantages of this option. The most promising options were then selected for more detailed analysis. These are presented in the following sections.

Table 4-1
Preliminary Options Matrix

	Recommended By					Time Frame		Evaluation Criteria		
	E	N/NW	MC	S/SW	OF	Short Range	Long Range	Effectiveness Reducing Noise	Feasibility of Implementation	Disadvantages of Option
A NIGHTTIME NOISE										
1a Implement Curfew	•	•	•							
1b Only Stage 3 at Night		•	•							
1c Stage 2 Limit at Night	•		•							
4b Nighttime Limitation On Reverse Thrust	•		•							
5c Restrict Night Engine Testing			•							
2b Preferential Runway Use At Night			•							
B LIMIT OVERALL GROWTH IN NOISE										
1e Implement Cap & Compliance Schedule			•							
1f Noise Budget	•	•	•							
1g Local Restrictions			•							
1a 90% Capacity For Each Flight at SEATAC		•		•						
1h "No Growth" Moratorium		•	•							
1i Higher Landing Fees For Commuter Aircraft			•							
1m Reduce Frequency & Quantity of Air & Depr		•								
2a No Third Runway			•							
2h Role of Taxiway C										
7a SEATAC Should Control Gatetimes Not Airlines	•		•							
1c Implement Standards for Noise			•							
C REDUCE NOISE IMPACT AREA (FACILITIES CHANGES)										
2e Don't Realign Runways with BF		•								
2f Realign Runways to Point NE/SW		•								
REDUCE NOISE IMPACT AREA (OPERATIONAL CHANGES)										
2c Takeoffs to North Use East Runway (34R)			•							
2d Fly Over SEATAC Property N & S of Airport			•							
2g 34R & 16L Preferential Runway for Departures				•						
3c Climb to 5000 Feet Before Turns			•							
4c Aircraft Should Depart at Steeper Angles	•		•							
4e Higher Altitudes Over Communities	•		•							
4f Use United's Climb Procedure	•		•	•						
REDUCE NOISE IMPACT AREA (LAND USE CHANGES)										
5c Compensation for Homes Near Acquisition Areas			•							
6b Compensate Citizens Affected By Noise			•							
5c Purchase Homes Near Airport			•							
5d Stop Obstructions to Flight			•							
5e Expand Insulation Program			•							
5f Other Easements			•							

E= EAST SUBCAUCUS
N/NW= NORTH/NORTHWEST SUBCAUCUS
MC= MEDIATON COMMITTEE
S/SW= SOUTH/SOUTHWEST SUBCAUCUS
OF= OVER FLIGHT COMMITTEE

5=VERY EFFEC. 5=VERY FEASIBLE 5=MIN. DISADV.
1=NOT EFFEC. 1=NOT FEASIBLE 1=LARGE DISADV.

Table 4-1 (Continued)
Preliminary Options Matrix

		Recommended By					Time Frame		Evaluation Criteria		
		E	N/NW	MC	S/SW	OF	Short Range	Long Range	Effectiveness Reducing Noise	Feasibility of Implementation	Disadvantages of Option
D	**FLIGHT CORRIDORS AND AIRSPACE CHANGE**										
3b	Test & Develop MLS Arr and Dept. Procedures	•		•							
3c	Flight Corridors Integrated w/FAA & Post Plan			•							
3d	Reevaluate Current Flight Paths Pop. Density	•		•	•						
3h	Remove Limits on Aircraft Flying over Pop. Areas		•								
3i	Redistribute Noise by User Population				•						
3j	No Increase in Noise To Any One N/NW Res. Area		•								
3k	Don't Discuss Flight Tracks		•								
3l	Aircraft Should Depart Over Downtown Industrial					•					
3m	Rescind Changes to North Flow Jet Routes					•					
3n	Change Instrument Approach Procedures from N					•					
E	**CONTROL OF GROUND NOISE**										
5c	Push Back From Gates			•		•					
5b	Run-ups in Building			•							
4a	Aircraft Not To Use Reverse Thrust	•		•							
5c	Noise Reducing Substance On Runways			•							
5e	Use White Noise			•							
5f	Study Baffles Berms etc				•						
7i	Prevent Buy-Out Areas from Being Paved										
F	**NOISE FROM AIRCRAFT DEVIATING FROM PROCEDURES**										
3o	Develop R-NAV SID For N. Departures over Sound					•					
3e	Navigational Lights for SEATAC Approaches			•							
7a	Enforce Compliance By Imposing Fees & Fines			•							
7b	Pilots Who Violate Noise Levels Should Be Fined			•							
7c	Pilots Must Remain In Pattern or Be Fined			•							
4c	Aircraft Depart Too Low	•		•							
7d	Move Noise Monitors For More Accurate Readings			•							
7e	Monitors Should Be Placed Further From Airport			•							
7g	Incentive to Encourage Quiet Flying		•	•							
7h	Improve Crew Knowledge of Noise Abatement			•							
7i	Monitor Noise Abatement		•	•							
G	**OTHER OPTIONS**										
8a	Multiple Airports or New Airport	•	•	•							
8b	Restrict Authority of Port of Seattle			•							
7o	Assert That SEATAC Is An Incompatible Neighbor		•								
H	**DIRECTION FOR ANALYSIS**										
7m	Include Effects Of Terrain & Water in Modeling		•								
7f	Noise Contours Should Be Drawn to 50 Ldn			•	•						
5g	Use Delta Noise to Measure Ground Noise				•						
1l	Include Cargo Aircraft in Study	•		•	•						
1j	Examine Noise Effects of Rubbing			•							
1i	Include Commuter Aircraft In Study of Load Factor		•	•							
3c	Document Maximum Capacity of SEATAC	•		•							
1k	Include Study of Retrofitting with Hush Kits			•							
3g	Evaluate Single Event Noise		•								
1*	Examine Commuter Aircraft Separate from Jets		•	•	•						

E = EAST SUBCAUCUS
N/NW = NORTH/NORTHWEST SUBCAUCUS
MC = MEDIATON COMMITTEE
S/SW = SOUTH/SOUTHWEST SUBCAUCUS
OF = OVER FLIGHT COMMITTEE

5 = VERY EFFEC. 5 = VERY FEASIBLE 5 = MIN. DISADV.
1 = NOT EFFEC. 1 = NOT FEASIBLE 1 = LARGE DISADV.

4.3 Options Selected for Detailed Analysis

This subsection and the following subsections provide a description of the initial Options identified for detailed analysis. These options were categorized in relation to the noise issue that each was designed to mitigate. The purpose of this organization was to demonstrate how each of these individual options could become an integral part of and contribute to an overall noise control program. These options are summarized in Table 4-2.

While these options are presented individually, they should be viewed as a package of measures that are all potentially part of an overall noise control program. The full benefit of noise reduction is achieved through the implementation of several measures or techniques which constitute the complete noise control program.

Information about each option was provided to the Committee at the initial stages of discussion in order that each option could be evaluated for potential noise relief as well as any tradeoffs in terms of costs and effects on air service. This rudimentary information was followed by more detailed data upon completion of the analysis of these options. The various considerations included:

Goal of Option
Description of Noise Control Option
Example Airports with Similar Programs
How to Measure Effectiveness and Compliance
Potential Change in Community Noise Levels
Effects on Air Traffic Control
Effects on Pilots
Effects on Airport
Effect on Airlines
Effect on Quality of Air Service
Capital Costs for Implementation
Legal Issues
Implementation Mechanism
Elements to be Negotiated

The remainder of this chapter presents the preliminary information on options as it was originally provided to the committee.

Table 4-2
Noise Control Options
Considered Initially for Detailed Analysis

LIMIT & CONTROL OVERALL NOISE

4.4 Noise Budget

4.5 Enhance Noise Remedy Program

NIGHTTIME NOISE

4.6 Nighttime Operational Limits

4.7 Nighttime Preferential Runways and Flight Corridors

FLIGHT TRACK MANAGEMENT

4.8 Various Alternative Scenarios for Analysis

- *Efficient Airspace System with Noise Abatement*
- *Traditional Analysis (Minimize Affected Population)*
- *Balanced Flight Track Allocation (Equal Noise Reduction for All)*
- *Equity Flight Track Distribution (Equal Sharing of Noise for All)*

NOISE FROM AIRCRAFT DEVIATING FROM PROCEDURES

4.9 Improve Duwamish Corridor Noise Abatement Procedures

CONTROL OF GROUND NOISE

4.10 Develop Control Strategy for Each Source of Ground Noise

NOISE FROM PARTICULAR INCIDENTS

4.11 Control Noise from Most Annoying Operation

4.4 Noise Budget

4.4.1 Goal of Option. The goal of the Noise Budget Option is to freeze current levels of overall noise and provide for future reductions in noise through the increased use of new generation (quieter) aircraft.

4.4.2 Description of Option. A description of a Noise Budget can be found in the FAA's report to Congress on the status of Stage II commercial aircraft fleet (Federal Aviation Administration, *Report to Congress, Status of the U.S. Stage II Commercial Aircraft Fleet*, August, 1989, Washington D.C.). The document states that "...one of the more far-reaching noise control strategies that has been implemented on the local level has been for the airport proprietor to set up a process by which 'noise budgets' are assigned to each carrier using that airport. Usually, this begins with the establishment of a noise goal for the airport as a whole, such as prohibiting any increase in or reducing the size of a given noise contour area, for example, the 65 LDN contour, within which aircraft noise can be expected to lead to complaints and possible group action. The noise from each current carrier is then computed, amounts set aside for new entrants and general aviation, and the remainder divided proportionally by some agreed upon formula."

It is important to understand that it is possible to establish a Noise Budget that allows air carriers serving the airport sufficient flexibility in how to meet the budget so that the air travel needs can be met and allows competition in a deregulated air service environment. It is also possible to establish a budget that is so restrictive that it would severely impact the total air transportation system, not only at that airport, but throughout the system. A successful Noise Budget is one that has feasible goals in future noise reduction that can be achieved within the confines of projected future aviation fleet and passenger forecasts. The Report *to Congress* document addresses this concern as follows: "This alternative (Noise Budgets) provides a direct means for airport operators to limit noise impacts at their airport. Furthermore, it freezes contours to existing levels so that any future increases in operations could only be accomplished using Stage 3 airplanes. Conversely, a budget established at a low operation airport would limit the future capacity at that airport if no provisions were made for growth."

Another mechanism very similar to a Noise Budget is an Airport Access Plan. The Access Plan identifies a maximum cumulative noise level to be allowed at the airport, but does not allocate specific noise amounts to certain carriers. Instead, this mechanism identifies the maximum number of flights (usually in terms of Average Daily Departures) allowed per carrier based on a type of aircraft (i.e., 727). This sets the maximum cumulative noise contour. Tradeoffs are developed which would allow an airline to increase the number of operations allowed if quieter aircraft are used by the airline.

The first requirement in establishing a Noise Budget is the identification of a noise *goal* for the airport, consisting of either prohibiting any increase in the size of a given noise contour or decreasing the size of the contour over time, or a combination of both. The most commonly used contour in the analysis of this Option is the LDN 65 contour. It would be necessary to determine if a noise contour reduction in the future would be feasible, and if so, to what extent and within what time frame. An example of this possible reduction may be a specific decibel reduction over a five or ten year time period.

Subsequent to these determinations, the amount of aircraft noise associated with each air carrier is then computed, with certain amounts of noise set aside for new entrants and general aviation aircraft. The remainder is then divided proportionally between the carriers, using an agreed upon formula. The allocation formula is often based upon current levels of noise generated by each airline. This amount of noise is then allocated to each carrier, which is free to schedule its operations in any way it wishes, as long as it stays within its allocated noise levels. This process is completed for the existing contour, and is then repeated, based upon the desired overall noise reduction to be achieved in the future.

The following steps are examples of elements in establishing a Noise Budget:

- Identify noise goal of airport: i.e., freeze the noise level from the airport to a certain level, and identify the amount of noise reduction desirable within a certain time period (decibel or percent reduction in noise or percent reduction in population within a contour within five- and ten-year time period).

- Compute the noise contribution from each carrier and air cargo operator.

- Set aside amounts of noise for general aviation, international flights, new entrants and Essential Air Service carriers.

- Determine formula to allocate noise to carriers. This is commonly based upon current levels of noise.

- Allocate levels of noise allowed to each carrier.

- Determine schedule of noise reduction by carrier to achieve desired future noise contour reduction. Provide for the use of incentives to help encourage use of these quieter aircraft in airline scheduling.

- Determine compliance schedule, penalties, any exemptions and type of agreement.

4.4.3 Example Airports with Similar Programs. The following is a list of airports with Noise Budgets or Access Plans.

Minneapolis-St. Paul International Airport
Boston Logan International Airport
Stapleton (Denver) International Airport
Raleigh-Durham International Airport
Orange County Airport (Access Plan)
Jackson Hole Airport (Access Plan)

4.4.4 How to Measure Effectiveness and Compliance. The effectiveness of this Option will be determined in terms of overall noise levels as defined by LDN levels. Other metrics may be used to supplement the LDN data. Compliance with this Option will be through enforcement of the ordinance/agreement that is implemented as a result of this program. Noise measurements from the permanent noise monitoring system will be used to verify that the goals of the program are achieved.

4.4.5 Potential Change in Community Noise Levels. The level of noise reduction will depend upon the goal established as part of the Noise Budget. At a regional airport such as Sea-Tac, the cumulative noise levels could be reduced by an estimated 10% to 40% over a five-year time frame through the Noise Budget Option. These potential noise reductions will be uniform throughout the sub-caucus areas.

4.4.6 Effect on Air Traffic Control. No effects anticipated.

4.4.7 Effect on Pilots. No effects anticipated.

4.4.8 Effect on Airport. A very restrictive Noise Budget could limit the ability of the airport to meet future community travel needs as a result in the loss of some service to the airport due to an inability of some carriers to meet the noise budget restraints. This Option could result in loss of revenue due to decrease in operations and a reduction in the number of passengers utilizing the airport. A flexible budget could be implemented that would not adversely effect the airport ability to meet future aviation needs of the community.

4.4.9 Effect on Airlines. Depending upon the level of restrictions contained in a Noise Budget, this Option could affect the overall scheduling of the airlines as they operate at other airports in relationship to Sea-Tac and could interfere with crew scheduling and availability. The airlines may incur significant costs involved with the purchase, retrofitting or rescheduling of aircraft, and crew scheduling. It may affect entire schedules of airlines to comply with budget requirements. A flexible Noise Budget does allow the air carriers serving the airport the versatility to determine, based upon their own needs, how best to meet the requirements of the Noise Buaget with minimal effects to their operations.

4.4.10 Effect on Quality of Air Service. This Option could result in a loss of service to the airport and a corresponding loss in the ability of the airport to meet the community aviation needs. However, if the budget is flexible, the loss of service would not occur, with an increase in operations and passengers over current levels possible. Noise budgets can also indirectly limit competition, which may effect quality of service.

4.4.11 Capital Costs for Implementation. There is very little capital cost for the airport, although administrative and personnel costs would be increased. This Option will require additional administrative procedures to monitor and ensure compliance.

4.4.12 Legal Issues. Use restriction of this type may be viewed as an impermissible burden on interstate commerce or as discriminatory. There may be some question as to federal preemption. The Noise Budget must be implemented based on sound analysis and evaluation of noise issues, and quantification of noise level reduction. It could impact air transportation and competition if it were not flexible enough to accommodate new Stage II entrants.

4.4.13 Implementation Mechanism. A mechanism and compliance schedule must be negotiated with the airlines to achieve noise level reductions. This involves identifying an achievable reduction in the cumulative noise level within a negotiated timeframe, allocating a proportional reduction to each airline in order to allow each airline to schedule the type of aircraft needed to reach that reduction, and adopting an ordinance/agreement with a reasonable compliance schedule to ensure noise level reduction through the introduction of Stage III aircraft or other specified aircraft based on noise levels.

The use restriction can be implemented either by ordinance or agreement. The ordinance or agreement should contain the items discussed above along with actual wording and conditions negotiated between the parties. If implemented by ordinance, the noise budget becomes mandatory, along with mandatory compliance. An agreement becomes mandatory dependent upon the parties to the agreement, and allows for more latitude and flexibility in both the development and implementation of the use restriction. (It is possible through agreement to agree to certain restrictions that cannot be regulated through an ordinance). The attorneys for the parties will have to dictate actual format and content for either an ordinance or an agreement.

4.4.14 Areas of Negotiation. The basic areas of negotiation are the level of noise reduction and the time frame for the reduction. Other areas will include the flexibility of the system relative to new entrants and growth for incumbent airlines, as well as how the system will be implemented and enforced.

4.5 Enhance Noise Remedy Program

4.5.1 Goal of Option. The goal of this Option was to increase the availability and workability of the noise insulation program so that it served the needs of a greater number of residents within the Part 150 Study area.

4.5.2 Description of Option. Seattle International Airport was one of the first airports in the country to institute a noise insulation program. The program is viewed around the country as a very successful program and has served as a model insulation program at other airports. This Option centers on methods of improving the program so it better serves the needs of the residents of the Part 150 area.

The noise insulation program encompasses those homes located within certain noise contours identified in the FAR Part 150 Study. Homes within the LDN 75 contour are currently slated for acquisition, with homes between the LDN 65 and 75 contours identified for noise insulation. The cost of such insulation is borne totally by the Port/FAA for those homes within the LDN 70 contour and the cost is shared with the homeowner within the LDN 65 contour. The level of participation currently provides fifty percent of the cost being borne by the Port/FAA and fifty percent by the homeowners.

This cost sharing provision of the program has placed the availability of insulation beyond the ability of some homeowners to pay. In addition, the program does not include apartments, condominiums, or mobile homes, nor is there any type of hardship program which can mediate current situations regarding priority of insulation or cost sharing requirements. The development of this Option will entail the evaluation and analysis of the existing program and the determination of areas within which conditions can be improved upon. A number of these alternatives are presented below.

- Investigate methods to convert the cost sharing program to a program fully funded by the Port/FAA. The noise levels in a cost sharing area are less than in a fully funded area. Therefore, necessary noise reduction is less, and may be achieved with less costly measures (i.e., new windows, doors and insulation only).

- Investigate the possibility of standardizing the insulation program in terms of the rooms that are included as part of the insulation.

- Explore alternative methods for the Transaction Assistance Program. Purchase of homes for resale (with insulation and aviation easements) has been found to be a cost effective method for noise insulation.

- Examine alternatives for prioritizing the waiting list for the insulation program.

- Examine methods for minimizing problems at boundaries to the buy out area and the insulation area.

4.5.3 Example Airports with Similar Programs. Airports with similar programs include: San Francisco International Airport, Hartsfield International Airport (Atlanta), and Los Angeles International Airport.

4.5.4 How to Measure Effectiveness and Compliance. The effectiveness of this Option will be measured by the number of homes that are insulated per year.

4.5.5 Potential Change in Community Noise Levels. This program does not change the noise levels. The potential change would not be in community noise levels but in the noise levels associated with the interiors of houses. In addition, the number of homes within noise contours will be reduced.

4.5.6 Effect on Air Traffic Control. No effects anticipated.

4.5.7 Effect on Pilots. No effects anticipated.

4.5.8 Effect on Airport. Potential increased costs. May require additional administrative costs, although the system is currently in place and being utilized. There may also be some undetermined costs associated with converting the cost sharing to a fully funded program.

4.5.9 Effect on Airlines. No effects anticipated.

4.5.10 Effect on Quality of Service. No effects anticipated.

4.5.11 Capital Costs for Implementation. Could require additional capital cost incurred by the airport, with some additional administrative and personnel costs. Potential costs yet to be determined, depending upon changes to the cost sharing program, objectives of the program, and level of federal funding.

4.5.12 Legal Issues. No significant legal issues involved, but could entail amending the FAR Part 150 Study, depending upon recommendations made.

4.5.13 Implementation Mechanism. The existing program will be amended to include various ideas which can improve the number of homes to be insulated. May require amending the FAR Part 150. Implementation would involve modifying the existing program where necessary or appropriate.

4.5.14 Areas of Negotiation. Areas of negotiation will center on recommending any changes proposed to the insulation program

4.6 Nighttime Operational Limits

4.6.1 Goal of Option. The goal of the Nighttime Operational Limits Option is to reduce both the number of nighttime operations and the noise levels from these operations, considering both cargo and air carrier aircraft.

4.6.2 Description of Option. The FAA's report to Congress on the status of Stage II fleets presented the following summary on nighttime noise limits: "Currently, one of the most effective incentives for air carriers and other operators of large turbojet airplanes to modernize their fleets is provided by certain local airports, not the Federal Government. This incentive is the proliferation of local limitations on noisy aircraft, particularly during nighttime hours. Such limitations are often expressed as the maximum allowable noise on takeoff or approach and are compared for each airplane type to FAA published numbers or to locally measured averages." (Federal Aviation Administration, *Report to Congress, Status of the U.S. Stage II Commercial Aircraft Fleet*, August, 1989, Washington D.C.).

The airlines are concerned that this proliferation of local regulations, in a nearly random manor, makes flight scheduling very difficult. They are apprehensive that the efficiencies which result from a myriad of local restrictions may lead to an ever increasing number of such restrictions and result in a worsening of the overall air transportation system due to capacity limitations. The FAA has historically monitored these types of restrictions very carefully, given the potential impact that they may have on interstate commerce, and to ensure that they are reasonable and nondiscriminatory.

The review further states that "...the advantage to this non-Federal option is that it allows each airport to determine its own particular noise abatement goals and objectives. Although a growing number of airports have imposed operating restrictions on Stage II aircraft, they have not done so unilaterally. Often, these limits have been cooperatively and creatively negotiated by the airports and tenant air carriers, taking into consideration their mutual self-interests. Many negotiated agreements give consideration to smaller airlines and new entrants to ensure sufficient competition."

The Option proposed here consists of adopting a policy which attempts to minimize the number of operations that occur during critical time periods of the night. This program will be designed to discourage the number of nighttime operations. The program will identify what the present nighttime noise levels are and which aircraft are responsible for those noise levels, by type and time of operation. The program will analyze the possibility of rescheduling certain flights to different time periods in order to reduce nighttime operations and control future additional flights by Stage II aircraft. A non-addition program may also be part of this Option that would restrict the addition of any new non-Stage III aircraft during the critical night time period.

Further, this Option proposes to place at some future date noise limitations on aircraft operations that occur during critical periods of the night. Nighttime hours will be identified as to which time periods are most critical. The limitations can consist of restrictions by Stage level or by noise level for certain periods and may be phased in over an identified time frame. As an example, at a future date, Stage II operations could be restricted between the hours of midnight and five o'clock in the morning, thus forcing air carriers and other operators into scheduling Stage III aircraft during this critical period. (A distinction may need to be made between domestic flights and international flights, as limitations may not be applicable for International carriers.)

In establishing nighttime restrictions on aircraft use, the first requirement is to determine if the restrictions will be based on actual noise levels of the aircraft as identified in various FAA publications or if they will be based on Stage levels. For instance, nighttime limitations could be based on limiting the hours which Stage II aircraft are allowed to operate at the airport or limit the hours which aircraft not meeting certain identified noise levels are allowed to operate. The exact critical nighttime hours must be identified which will be used to restrict the operations. These initial nighttime hours should then be expanded through a "phase in" program to increase the length of the time period which has use restrictions. Some future date, such as 199X, should be identified as the target date at which time only Stage III aircraft will be allowed to operate between the hours of midnight and five o'clock in the morning, as an example.

The following is a list of steps that are necessary in establishing Nighttime Restrictions:

- Identify the basis on which limitations will be determined; i.e., on Stage II/Stage III distinctions or on certificated noise levels.

- Determine if a "phase in" of limitations is desirable as compared to one set date. The date will most likely be timed relative to the availability of hushkits that are being developed by the air cargo industry.

- Determine first tier critical nighttime hours. Determine second tier nighttime hours, if desired.

- Determine compliance schedule, penalties, any aircraft exemptions and type of agreement.

4.6.3 Example Airports with Similar Programs.

San Francisco International Airport
San Diego International Airport
Port Authority of New York/New Jersey (JFK, LGA, EWR)
Palm Beach International Airport
Minneapolis-St. Paul International Airport (Voluntary)

4.6.4 How to Measure Effectiveness and Compliance. The effectiveness of this Option will be measured in terms of overall reduction in LDN values and resultant reduction in affected population within noise contours. Compliance with this Option will be through the enforcement of the ordinance and/or agreement that will be developed as part of this Option.

4.6.5 Potential Change in Community Noise Levels. As a result of this Option, overall LDN noise levels could be expected to decrease by 0 to 1 dBA in the short term. On a long term basis, LDN noise levels could reduce by 1 to 3 dBA. Noise during the critical nighttime hours will be reduced. These potential noise reductions will be uniform through the sub-caucus areas.

4.6.6 Effect on Air Traffic Control. No effects anticipated.

4.6.7 Effect on Pilots. No effects anticipated.

4.6.8 Effect on Airport. Could result in overall reduction in nighttime operations, both air carrier and air cargo. The airport could experience a loss of service if the restriction results in a reduction of aircraft available to the airlines to provide the service level required. Would require additional administrative procedures to monitor compliance and ensure compliance if restriction is by ordinance.

4.6.9 Effect on Airlines. Depending upon how restrictive, the Option could result in loss of revenue to the airlines and air cargo industry due to scheduling conflicts and lack of available aircraft to meet the nighttime restrictions. Could affect the overall scheduling of the airlines as they operate at other airports in relationship to Sea-Tac. Could interfere with crew scheduling and availability. The airlines could incur significant costs involved with the purchase or rescheduling of aircraft to critical times and crew scheduling.

4.6.10 Effect on Quality of Service. The overall quality of service might decrease due to a potential decrease in nighttime service. Depending upon how restrictive, the Option may affect air cargo industry in the Seattle region. Note that it is feasible to have a Nighttime Operational Limit program with feasible limits that will not adversely affect quality of air service to the Seattle area.

4.6.11 Capital Costs for Implementation. Very little capital cost involved by the airport, administrative and personnel costs only.

4.6.12 Legal Issues. Use restriction of this type may be viewed as an impermissible burden on interstate commerce or as discriminatory or violative of grant agreements. May have some question as to federal preemption. Must be implemented based on sound analysis and evaluation of noise issue, and quantification of noise level reduction.

4.6.13 Implementation Mechanism. Identify and implement an airport policy to minimize the number of operations during the critical nighttime hours by shifting aircraft types or times. Adopt an ordinance/agreement with a reasonable compliance schedule to ensure nighttime operational noise reduction through the introduction of Stage III aircraft or specified noise level limitations for aircraft operating during those time periods.

The use restriction can be implemented either by ordinance or agreement. The ordinance or agreement should contain the items discussed above along with actual wording and conditions negotiated between the parties. If implemented by ordinance, the noise budget becomes mandatory, along with mandatory compliance. An agreement becomes mandatory dependent upon the parties to the agreement and allows for more latitude and flexibility in both the development and implementation of the use restriction. (It is possible through agreement to agree to certain restriction that can not be regulated through an ordinance). The attorneys for the parties will have to dictate actual format and content for either an ordinance or an agreement.

4.6.14 Areas of Negotiation. The exact time frames, nighttime hours and maximum noise levels (are the restrictions based on Stage levels or certificated noise levels) should be negotiated to implement a workable mechanism for reducing noise levels. In addition, the determination as to how the system can be enforced once implemented will also require negotiation.

4.7 Nighttime Preferential Runway and Flight Corridor

4.7.1 Goal of Option. The goal of this Option is to reduce nighttime operational noise levels during the most noise sensitive periods (nighttime) and to optimize the operations within areas of less noise sensitive land use during these time periods.

4.7.2 Description of Option. This Option consists of developing a procedure where aircraft are required to use a specific runway and flight corridors for arrivals and departures during certain times of the day or night in the interest of reducing noise on and around the airport. There are two types of programs used, informal where participation is voluntary and formal where participation is mandatory. When a formal runway use procedure is enacted, controllers and pilots are required to comply unless weather or emergency conditions prevail. The preferential runway determination is made by considering that direction which is the least intrusive to the surrounding community while not compromising safety of flight. Normally a preferential runway use program is designed to reduce noise in the nocturnal hours such as midnight to six or seven o'clock in the morning. Preferential runway programs are for turbojet aircraft only and those with weights of 12,500 pounds or less are included only if the airport proprietor determines that those aircraft create a noise problem.

The program will identify the number of flights that depart/arrive the airport during the critical nighttime hours and the runways being used. Nighttime is to be defined as that time of the night when sleep or quiet rest periods are most apt to be interrupted by noise. Generally that period is considered to be between the hours of 10 p.m. and 7 a.m. The active time will vary depending on the option being considered and the results expected. The analysis will then determine the ingress/egress routes that best overfly the less sensitive areas. Note, this program will be based upon destination of the aircraft. (This option does not propose to designate either north flow or south flow as the preferential runway direction.)

A preferential flight corridor program is used in much the same way as the Preferential Runway Use Program. That is to say a preferred flight track for arrivals and or departures is developed to reduce the noise caused by aircraft. Again, the track is designed to keep the aircraft in a specific area that is less sensitive to noise.

The product of this Option will be a designation of the preferred arrival and departure corridors and procedures to be used during the nighttime hours. Special procedures that can only be implemented during this low activity hour will be investigated.

4.7.3 Example Airports with Similar Programs. Some other airports that have implemented such a Preferred Runway Use program either formally or voluntarily include:

Minneapolis-St. Paul International Airport
Portland International Airport
Los Angeles International Airport

4.7.4 How to Measure Effectiveness and Compliance. The effectiveness of this Option will be measured in terms of change in LDN noise levels and change in the noise-impacted population within the noise contours. Compliance with this option can be monitored through the noise and flight track monitoring program.

4.7.5 Potential Change in Community Noise Levels. Overall noise levels would probably be unchanged, however, noise in certain areas during the more sensitive nighttime noise periods should be reduced. The level of noise reduction can not be estimated at this time.

4.7.6 Effect on Air Traffic Control. This Option could result in some delays to arrivals and departures. Air Traffic Control (ATC) could experience an increased workload as coordination between controllers increased.

4.7.7 Effect on Pilots. Pilots could experience an inconvenience by not being able to choose what runway they want to use and a potential increase in workload.

4.7.8 Effect on Airport. No effect on the airport's ability to meet the communities' aviation needs.

4.7.9 Effect on Airlines. No measurable adverse effect would be anticipated. An increase in travel time for some destinations would be off-set by a decrease for others.

4.7.10 Effect on Quality of Service. No measurable adverse effect would be anticipated. May be some slight increase in travel time for some scenarios.

4.7.11 Capital Costs for Implementation. No capital costs to the Airport or FAA, although there may possibly be minor additional fuel costs and ground time costs to the airlines.

4.7.12 Legal Issues. No legal issues anticipated. Preferential runway use programs are currently in use at several airports without legal challenge. FAA does not have a formal flight track program; therefore flight tracks desired for noise abatement must be developed and mutually agreed upon by the FAA, airport proprietor, and users.

*4.7.13 **Implementation Mechanism.*** Determine the preferred runway/flight corridor assignment and the arrival and departure routes that cause the least interference to the surrounding community. The Airport Proprietor must then formally request that the FAA implement a preferential runway use program.

*4.7.14 **Elements to be Negotiated.*** Preferred runway and flight track procedures must be developed according to the FAA flight safety guidelines and then negotiated with the FAA, airport proprietor, and users prior to formal implementation. The element to be negotiated is whether or not to implement such a program.

4.8 Flight Track Management

4.8.1 Goal of Option. The goal of this Option is to reduce the overall impacts from aircraft noise through a modification and reallocation of existing flight tracks and airspace. In addition the goal of the Option is to explore opportunities for noise abatement procedures that might be possible under different airspace scenarios. This includes the study of flight tracks for both air carrier and commuter aircraft.

4.8.2 Description of Option. Various alternative scenarios are under consideration as part of this option. These alternative scenarios represent different strategies for reducing noise impacts through modifications and reallocation of the flight tracks. It is anticipated that these scenarios will be the stepping stones for the development of the final Flight Track Management Option that may incorporate measures from each of these scenarios. These scenarios are listed below and are discussed individually in the following paragraphs.

- Efficient Airspace System with Noise Abatement
- Traditional Analysis (Minimize Affected Population)
- Balanced Flight Track Allocation (Equal Noise Reduction for All)
- Equity Flight Track Distribution (Equal Sharing of Noise for All Areas)

Efficient Airspace System with Noise Abatement. This Option is an airspace utilization plan that provides the optimum use of the airspace to accommodate the arrival and departure requirements at the airport. As such, a procedure or plan is developed, maximum consideration will be given to noise abatement. This scenario is essentially the FAA's "4-post plan", with noise abatement measures integrated into the plan.

This plan could be considered a plan that would be designed to efficiently utilize the airspace. In its present form it is not necessarily designed to be a noise abatement plan. That is not to say that noise benefits are not derived. On the contrary, noise relief could be expected in some areas due to the reduction in the number of aircraft, reduced need to hold aircraft at low altitudes, and it provides for the ability to fly at lower power settings on approach. The plan does result in a relocation of some noise to new areas. For those areas that may realize an increase in noise, this scenario will explore tradeoffs for shifting other operations so that the overall noise levels in these areas at least do not increase, or are reduced. This scenario will also explore noise abatement opportunities that may be more feasible with a more efficient air space system that are not possible with the current system (i.e., reduced power on approach). Changes in flight tracks that may be available under this new scenario will also be explored.

The efficient airspace plan redirects the arrival flow to accommodate arrival routes with minimal impact on the departures and adds a second arrival stream for south flow. Basically the plan calls for arriving aircraft to approach the airport from four directions. These arrival flows would allow the controllers the option of simultaneous arrival flows when the weather allows for visual approaches. During instrument weather conditions arrival paths would be unaffected. Theoretically the plan should reduce low speed and low altitude maneuvering and holding caused by the present method of feeding all of the final approach course through Elliott Bay. The south flow capacity of the airspace is increased by this option.

This Option has been developed by the FAA. The FAA has indicated that recommended changes to their plan will be considered. These modifications to their plan could either be included in the initial plan scheduled to take effect soon (preliminary input), or they could be part of an improvement effort after evaluating the current FAA plan after its implementation (detailed input).

Traditional Analysis (Minimize Affected Population). This scenario of flight track analysis deals with attempting to develop flight tracks that would overfly the least populated areas. This type of procedure requires open areas or non-noise sensitive areas in and around the airport that can be used for arrival and departure routes. The goal of this Option is to relocate flight tracks to areas that are least inhabited. While this Option does not reduce noise generated by the aircraft, it does place that noise event in areas less noise sensitive.

This scenario is called the Traditional Analysis, in that it is the traditional method for assessing the effectiveness of alternative noise abatement procedures. This is the method that would be used for a Part 150 Noise Study. The scenario would take into consideration industrial areas, over water areas, and population densities in determining the optimum flight tracks and track utilization. Prior experience with aircraft noise by the affected population would not be a factor for this scenario.

The first step is to define the flight tracks that overfly the least populated areas. Procedures would be developed that utilize these tracks without resulting in any significant additional delays. The number of residences within the various noise contours would then be determined. The contours to be used include both the LDN contour and Time Above contours. It is anticipated that one of the results of this scenario would be to maximize the utilization of the Duwamish industrial area for north flow departures.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). This Option would be a flight track system that attempts to provide some degree of noise relief to all sub-caucus areas surrounding Sea-Tac. If flight track modifications are not available which reduce the noise impacts without increases in another area, then the tracks are not changed. No area would experience an increase in noise as a result of improvements within other areas.

This scenario will potentially include significant changes to the arrival and departure flight tracks and allocations of aircraft on those tracks. The types of operations for each area may change, but the overall noise levels for each area will at least remain the same or be reduced. This may involve airspace changes that allow for new noise abatement procedures that are not possible with the current airspace system. This scenario may include such measures as adding a second arrival stream for south flow to allow for reduced thrust arrivals and special tracks for louder aircraft.

The first step in the analysis is to determine the current noise levels in the affected areas and identify what type of aircraft are responsible for the noise. The next step is to analyze what type of changes are required to attain noise reduction. Balanced changes are then tested for each of the areas around the airport. This scenario is an airspace utilization plan that adds or reduces certain noise events over a specific part of the community in an effort to develop a tradeoff of noise impact so that the total noise in each area is reduced.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). The basis for this scenario is given the fact that there will still be aircraft noise, how can the remaining noise be distributed so that it is shared equally by all of the communities. The goal of this scenario is to equitably share the noise impacts within the community. Population densities are not a factor for this scenario.

The first step in the analysis is to determine the existing sound environment with all of the noise abatement measures in place. This remaining noise would then be equitably distributed among all sub-caucus areas. This measure may also include multiple flight tracks that are used to share flights. This sharing may be in terms of equal distribution or in terms of sharing on different days (i.e., east turns to take place at different nautical mile distances on different days, thereby providing for some days with quiet for each area).

4.8.3 Example of Airports with Similar Programs.

Efficient Airspace System with Noise Abatement
O'Hare (Chicago) International Airport
Dallas/Fort Worth International Airport
New York Metroplex Airports
Phoenix Sky Harbor Airport
Atlanta International Airport
Los Angeles International Airport

Traditional Analysis (Minimize Affected Population)

Los Angeles International Airport -

Late night arrivals/departures are all over the ocean.

Phoenix Sky Harbor Airport -

East departures fly a specific flight track out the Salt River bed.

Washington National Airport -

Aircraft overfly the river to remain clear of residential areas.

Orange County Airport - Back Bay Departure Route

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas).

Washington National Airport - Scatter Plan

4.8.4 How to Measure Effectiveness and Compliance. The effectiveness of each of these scenarios will be measured in terms of both change in LDN and in terms of Time Above information. Both noise contours and a representative analysis of key locations in each sub-caucus area will be presented. Additional acoustic data may also be used to supplement the analysis.

Once any of these measures are adopted or in place, noise measurements and flight track monitoring (either temporary monitoring or a new permanent monitoring system) could be used to determine if this measure has been effective in reducing noise levels. The flight track monitoring system could be used to determine the level of adherence to new flight tracks.

4.8.5 Potential Change in Community Noise Levels.

Efficient Airspace System with Noise Abatement. Overall noise levels would be expected to decrease slightly. The noise levels in each sub-caucus area will vary. Areas to the south, west and northwest would be expected to decrease. Areas to the north and east would be expected to experience an increase. (This option would include measures to reduce the total aircraft noise levels in those areas that show an increase.) The estimated changes in LDN noise levels as a result of this option are 0 to 3 dBA, with some localized areas potentially experiencing a greater decrease.

Traditional Analysis (Minimize Affected Population). Overall noise levels would be expected to remain the same. The affected population would be expected to decrease by 5 to 10 percent. Some community areas may experience an increase in noise as a result of this scenario. Decreases in the LDN noise levels in the remaining areas will range from 0 to 3 dBA.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). Overall noise levels would be expected to decrease slightly. By definition of this scenario, no sub-caucus area will experience an increase in noise. Decreases in the LDN noise levels are estimated to range from 0 to 3 dBA. Some localized areas may experience a greater decrease.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). Overall noise levels would be expected to remain the same. Some community areas may experience an increase in noise as a result of this scenario. Increases and decreases in the LDN noise level are estimated to range from 0 to 3 dBA. Some localized areas may experience a greater decrease.

4.8.6 Effect on Air Traffic Control.

Efficient Airspace System with Noise Abatement. The positive affect on air traffic control would be a more determinable traffic flow during peak periods. En route facilities could better feed the terminal radar control (the immediate airport facility) a smooth manageable traffic flow.

Traditional Analysis (Minimize Affected Population). The air traffic control system could become less flexible and result in a reduction of air traffic service especially during critical time periods.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). Some potential loss of flexibility in airspace management could be anticipated by Air Traffic Control.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). Some potential loss of flexibility in airspace management could be anticipated by Air Traffic Control.

4.8.7 Effect on Pilots.

Efficient Airspace System with Noise Abatement. None Anticipated.

Traditional Analysis (Minimize Affected Population). In order to remain over the less populated areas flight tracks could be more complicated and difficult for pilot compliance.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). None Anticipated.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). Potential small increase in workload.

4.8.8 Effect on Airport.

Efficient Airspace System with Noise Abatement. Positive affect in improving the efficiency of the airport and increased hourly capacity during south flow good weather conditions.

Traditional Analysis (Minimize Affected Population). Potential small increase in delays could affect the airport's ability to serve the communities aviation needs.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). None Anticipated.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). None Anticipated.

4.8.9 Effect on Airlines.

Efficient Airspace System with Noise Abatement. Positive affect through reduction in delays and savings of fuel costs.

Traditional Analysis (Minimize Affected Population). This Option could result in a loss of revenue due to the potential small increase in delays that might be encountered.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). Some potential increase in fuel costs as a result of potential longer flight distances.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). Some potential increase in fuel costs as a result of potential longer flight distances.

4.8.10 Effect on Quality of Air Service.

Efficient Airspace System with Noise Abatement. The quality of air service would be expected to improve as a result of reduced delays and the balancing of the peak hour capacity to be the same between north flow and south flow conditions.

Traditional Analysis (Minimize Affected Population). This Option could result in some small increase in delays.

Balanced Flight Track Allocation (Equal Noise Reduction for All Areas). None Anticipated.

Equity Flight Track Distribution (Equal Sharing of Noise for All Areas). None Anticipated.

4.8.11 Capital Costs for Implementation. Capital costs for all scenarios are minimal, limited to some new charting, controller and pilot training, etc.

4.8.12 Legal Issues. Legal issues are in the area of FAA compliance with Federal Regulations regarding environmental evaluations for such a procedural change. The FAA has the sole responsibility for the airspace and its safe efficient use.

4.8.13 Implementation Mechanism. All changes to flight track and operational procedures must be coordinated and approved through the FAA's internal process. The option must meet FAA's legal, environmental, operational and safety requirements. Appropriate charts will need to be published as necessary. Modify the air traffic control radar computer program to accommodate the new procedures. Controller and pilot briefings must be accomplished prior to implementation.

To implement any other planned changes to airspace routes the FAA must complete the following steps. The plans must be developed in conjunction with the FAA, in that the agency has the sole responsibility for the airspace and its safe efficient use.

- Prepare the plan in sufficient time to allow for publishing charts.
- Coordinate radar computer programs to accommodate new plan.
- Coordinate with appropriate FAA air traffic facilities, and users.

4.8.14 Elements to be Negotiated. The negotiation process for flight track options would be an interactive process between the community and the FAA. The scenarios have varied noise impacts and will require consensus to determine what scenario(s) are ultimately implemented. It is anticipated that these scenarios will be used as the stepping stones for the final noise abatement procedure. The first step in the negotiation will be the selection of elements of each of these scenarios into a final scenario that then will be modeled and presented to the committee for review.

4.9 Improve Duwamish Corridor Noise Abatement Procedures

4.9.1 Goal of Option. This Option is designed to improve the current procedures utilizing the Duwamish corridor for the Elliott Bay departures during north flow operations. It would result in an increased percentage of aircraft which operate within the corridor and do not drift into noise sensitive land uses. Elements from this program could also be used to monitor and enhance the performance of other current or future noise abatement procedures.

4.9.2 Description of Option. This Option is a plan to maximize the use of the Duwamish industrial area and overwater areas when aircraft are departing through Elliott Bay. This option would consist of defining the optimum flight path that most effectively utilizes the Duwamish corridor industrial area. This procedure would assist in reducing noise levels in adjacent noise sensitive areas.

Once the optimum path has been established, alternative measures would then be investigated that are designed to improve the ability of aircraft to follow this path. To assist pilots in complying with the procedure, the use of some type of ground guidance system will be investigated. The equipment could be a homing beacon, radio signal from existing air navigational aid or the installation of a ILS localizer system for departure guidance throughout the corridor. These systems could help attain near term goals. The installation of a Microwave Landing System (MLS) when this technically becomes available would provide greater accuracy by utilizing the arc capabilities of the MLS system. Other programs to be investigated include new radar maps with specific land use markings and pilot awareness programs.

Methods of measuring compliance with the noise abatement procedure would then be developed. The first step is to define the area of the corridor, for which aircraft within that corridor are considered to be following the noise abatement procedure. The percent of aircraft that are outside of that corridor are determined as a measure against future improvements. The procedure is to be developed in such a manner that compliance can be validated.

To validate this procedure and monitor enforcement, a new permanent noise monitoring and flight track monitoring system should be installed. This equipment should provide close to realtime data so that the noise level and track of a any particular operation can be determined. To further improve compliance with the procedure, different methods of accountability will be investigated. These measures may include quarterly summary reports on compliance, fines, and incident reports.

Compliance with the noise abatement procedure will be defined in terms of percent of operations within the specified corridor. Having a specific measure of compliance will benefit all parties, in that it allows for a measure of performance that can quantify any changes that may occur with time.

4.9.3 Example Airports with Similar Programs.

Orange County Airport -
Back Bay procedure using VOR and ILS localizer for guidance.
Phoenix Sky Harbor Airport -
Riverbed departure using VOR and DME equipment for guidance.
Stapleton International (Denver) Airport -
Noise monitoring and flight track monitoring system.

4.9.4 How to Measure Effectiveness and Compliance. As with all options, the net change in the LDN noise level will be determined; however, the LDN level is not expected to be significantly affected. This option primarily addresses single event noise problems. The primary method of determining effectiveness is change in the percent of events that are outside the departure corridor. The effectiveness of a measure will be based upon the reduction in the percentage of aircraft that deviate from the prescribed corridor. Other statistical data may also be specified.

A permanent noise and flight track monitor system that covered the Duwamish corridor should be installed to measure compliance with this Option. Quarterly reports can be prepared that document compliance with the measure. The near realtime capability of the system allows for identification of any individual aircraft that deviate from the procedure and documents accountability. This equipment could verify the LDN values and flight tracks followed. Precise ground guidance and monitoring systems could provide the percentage of compliance and be used as a guide to determine if expected goals are being attained.

4.9.5 Potential Change in Community Noise Levels. Noise control options that address single event sound level problems generally do not materially effect cumulative noise metrics such as LDN. It is anticipated that this noise control option will have a minimal effect on cumulative LDN noise levels. However, the measure should have an effect on reducing the number of single event aircraft that deviate from the departure procedures. It is anticipated that this option would improve compliance with the Duwamish procedure by 10 to 30 percent over existing levels of compliance.

4.9.6 Effect on Air Traffic Control. Some potential effect on air traffic control can be anticipated in terms of increase in workload. Possible increase in delays due to the conflicts with Boeing Field traffic.

4.9.7 Effect on Pilots. Some potential increase in workload for pilots during departure segments would be expected because of additional use of ground guidance systems.

4.9.8 Effect on Airport.. No impact on the airport's ability to serve the communities aviation needs. Some increase in staff costs for operation of the new noise/flight track monitoring system, additional compliance monitoring and report preparation.

4.9.9 Effect on Airlines. Possibly some effect from potential delays caused by limited departure routes.

4.9.10 Effect on Quality of Air Service. Potential small increase in departure delays could cause some adverse effect on quality of air service.

4.9.11 Capital Cost for Implementation. The cost of a new permanent noise and flight track monitor systems is estimated to be between $400,000 and $700,000. Navigational guidance equipment estimated to be $100,000 to $500,000.

4.9.12 Legal Issues. None anticipated.

4.9.13 Implementation Mechanism. One of the cornerstones of this Option is to obtain approval from the FAA for easier access to ARTS radar tracking data. Implementation of this measure would then be in terms of equipment purchasing, training, and satisfying FAA requirements. The specifications for the new noise/flight track monitoring system must be determined. This would be in terms of number of sites and locations, programs and the methods of aircraft identification. The measurement system must then be selected and ordered. Once installed, staff must be trained in its use and in reporting systems for compliance and violations. If ground based NAVAIDS are to be utilized, then they must be ordered and installed.

All changes to flight track and operational procedures must be coordinated and approved through the FAA's internal process. The option must meet FAA's legal, environmental, operational and safety requirements. Appropriate charts will need to be published as necessary. Modification of the air traffic control radar computer program to accommodate the new procedures may be necessary. Controller and pilot briefings must be accomplished prior to implementation.

4.9.14 Elements to be Negotiated. As with all options, the merit of this Option must be negotiated. If so then issues to be negotiated include the methods of evaluating compliance and methods of accountability. As with all options that affect airspace, the FAA must be closely involved in that they have the sole responsibility for airspace and its safe and efficient use.

4.10 Develop Control Strategy for Each Source of Ground Noise

4.10.11 Goal of Option. The goal of this Option is to reduce the amount of ground noise from the airport. This will be in terms of peak sound levels as well as the total duration of these sounds. The control of the single event disturbances from ground noise is also an important element of this option.

4.10.12 Description of Option. This noise control option will include a number of different measures that address the different sources of ground-based noise. The option will also include additional measures to limit ground noise during nighttime hours.

The first element of the analysis is to determine the different sources of ground-based noise and the contribution of each of these sources to the total ground noise. Sources of ground noise include: power backs from gate, taxi, departure roll, thrust reversals, engine run-ups and auxiliary power units. This will be accomplished as part of the noise measurement survey. For each source of ground noise, a noise control program will be developed. Specific measures that deal with nighttime ground noise will also be developed.

Example programs that will be reviewed as part of this option are presented below.

- Elimination of power backs at the gate.
- Review of existing run-up ordinance to develop new methods of enforcement and compliance.
- Examine the construction of new high speed taxiways at critical locations and designation of specific taxiways when exiting the runway at nighttime to reduce the noise from thrust reversals.
- Examine the construction of berms and/or run-up barriers of the ground noise.
- Investigate the use of fixed power units and air condition units for Sea-Tac to eliminate the need for Auxiliary Power Units (especially during the late night hours).

This option will develop control programs and enforcement strategies for each noise control measure. This may include the development of an ordinance/agreement. Note also that some of these measures, that once agreed upon, can be implemented immediately, while others are longer term measures that require equipment purchases or facilities changes.

4.10.3 Example Airports with Similar Programs.

Minneapolis-St. Paul International Airport
West Palm Beach International Airport

4.10.4 How to Measure Effectiveness and Compliance. As with all options, the net change in the LDN noise level will be determined. In addition other supplemental metrics will be analyzed including Time Above data.

Compliance with the elements of these options will be through enforcement of any ordinance/agreement that is developed as part of this option. In addition, noise measurement data from the permanent noise monitoring system will be used to test for violations.

4.10.5 Potential Change in Community Noise Levels. The potential change in noise levels from this option will be most effective in the close areas, although, during certain meteorological conditions these changes will be noticed at further locations. The LDN noise levels at the close areas are estimated to be reduced by 0.5 to 2 dBA as a result of these options. The most significant improvements are anticipated to be in terms of reductions in the occasional single event disturbances.

Note, also that a number of the other options indirectly address the problem of ground noise. For example both the Noise Budget and the Nighttime Operational Limits help reduce the level of ground-based noise. The full benefit of noise reduction is achieved through the implementation of the complete noise control program.

4.10.6 Effect on Air Traffic Control. No effects anticipated.

4.10.7 Effect on Pilots. No effects anticipated.

4.10.8 Effect on Airport. Potential costs associated with new equipment and facility changes. Administrative and personnel costs will be necessary for enforcement.

4.10.9 Effect on Airlines. Potential increase in costs associated with purchase of equipment and increase in labor costs that are associated with the elimination of power backs. Potential difficulties in meeting maintenance schedules if run-ups requirements are affected.

4.10.10 Effect on Quality of Service. No effects anticipated.

4.10.11 Capital Costs for Implementation. Potential costs for new equipment and facilities at the airport. Costs cannot be estimated until a more detailed program is determined. This Option will also require additional

administrative procedures to monitor compliance and ensure compliance. May require the installation of new noise measurement sites and new computer software for enforcement.

4.10.12 Legal Issues. Ordinances or agreements that are a result of this Option must be implemented based on sound analysis and evaluation of noise issue, and quantification of noise level reduction. Facility changes that require federal funds for noise abatement may require amending the FAR Part 150 Study, depending upon recommendations made.

4.10.13 Implementation Mechanism. The noise control programs that are the most effective are negotiated and selected. For those sources of ground noise that can be minimized with a specific control program, an ordinance or agreement will be adopted. Some options, such as nighttime runway and taxiway use could be tested prior to implementation. Those measures that require equipment purchase or facilities changes must be ordered within the negotiated timetable.

4.10.14 Areas of Negotiation. Each of the ground noise control strategies will need to be negotiated individually. The time frame for implementation of each of these measures must also be negotiated.

4.11 Control Noise from Most Annoying Operations

4.11.1 Goal of Option. The goal of this Option is to control or eliminate particular single event operations that are most annoying to the community. Control of these operations can demonstrate an identifiable change and improvement to the sound environment.

4.11.2 Description of Option. This Option is to develop a noise control strategy that addresses the one or two single event operations that have been identified by most residences as particularly annoying. This may be, for example, a particularly loud operation every day at 4 a.m., or one departure every day that is low and does not follow the noise abatement procedures.

Representatives of each of the community sub-caucus areas will be contacted to identify particular operations that are most annoying to the community. Once the most annoying operations have been identified, then the specific aircraft operation that causes these events will be determined. The strategy for minimizing this noise problem will depend upon the type of event that has been identified.

This noise control Option is to be developed as a program that the Port of Seattle can apply to future single event noise problems that may arise. The Option will be designed to monitor the noise complaint files so that particular operations that are causing complaints can be flagged and get input from an citizens noise advisory committee. Methods for addressing these noise problems will be identified. The program will most likely be a voluntary program that is designed to put pressure on those operations that result in specific complaints.

4.11.3 Example Airports with Similar Programs. None known.

4.11.4 How to Measure Effectiveness and Compliance. As with all options, the net change in the LDN noise level will be determined. However, it is likely that the LDN value will be unaffected. The best measure of effectiveness of this Option is that an operation that is identified by the community as particularly annoying, is controlled or minimized.

Enforcement of this Option will be through a specific program administered by the Port of Seattle Noise Abatement Office. It may also be desirable to establish a citizens adversary committee that can advise the Port on noise issues that effect the community.

4.11.5 Potential Change in Community Noise Levels. This Option will likely have no effect on the cumulative noise levels. The LDN metric is insensitive to occasional single event sound levels. Changes will most likely be in terms of perceived level of noise. Often, removal of a particularly annoying noise will be perceived as a significant decrease in noise even though the overall noise levels are unaffected. Stated another way, one specific very annoying event can often increase the annoyance of all of the other events.

4.11.6 Effect on Air Traffic Control. No effects anticipated.

4.11.7 Effect on Pilots. No effects anticipated.

4.11.8 Effect on Airport. Potential increase in administrative and personnel costs for enforcement.

4.11.9 Effect on Airlines. Potential effects are unknown at this time.

4.11.10 Effect on Quality of Air Service. No effects anticipated.

4.11.11 Capital Costs for Implementation. Very little capital cost involved by the airport, administrative and personnel costs only. This Option will require additional administrative procedures to monitor compliance and ensure compliance.

4.11.12 Legal Issues. None anticipated, unless a specific ordinance is developed relative to some yet unidentified noise issue.

4.11.13 Implementation Mechanism. The method of implementation may vary depending upon the type of operation that is identified. The program will most likely be a voluntary program of compliance. It may be possible to develop a specific ordinance that is designed to control a certain type of noise problem, but this is not known at this time. The program should be established so that any future particular incident problem that is identified can also be addressed.

4.11.14 Areas of Negotiation. As with all options, the merit of this Option must be negotiated and a determination made as to whether it should be included in the Noise Control Program.

U.S. Department of Transportation
Federal Aviation Administration

Seattle Airports District Office
1601 Lind Avenue, S.W.
Renton, WA 98055-4056

RECEIVED
MAR 14 1991
NOISE ABATEMENT OFFICE

March 12, 1991

Ms. Diane Summerhayes
Planning Program Manager
Seattle-Tacoma International Airport
P. O. Box 68727
Seattle, WA 98168

Dear Ms. Summerhayes:

This letter responds to the issues you raised in your letter dated February 5, 1991, regarding the update to Sea-Tac's Noise Exposure Map (NEM) and Noise Compatibility Plan (NCP). We have coordinated your concerns within the FAA and formulated the following responses.

a. We concur with your proposal to use the new data base that should be released by the end of March, but not the new version of the Integrated Noise Model (INM).

b. We recognize that the mediation process and the previous NEM update included extensive public involvement, therefore we agree that a committee is not necessary. We will work with you to develop a public participation process that satisfies section 150.21B of FAR Part 150. An opportunity for a public hearing will be required when the update is near completion.

c. Your proposed method of integrating the mediation process and the update appears to be adequate. The mediation process will have to be explained in the documentation supporting the NEMs, because assumptions used to generate the maps need to be included in the text. The completed mediated agreement should be included in the appendix of the document.

If you have any questions, please call me at 227- 2661.

Sincerely,

Sarah P. Dalton

Sarah P. Dalton
Community Planner

cc:
ANM-611

Port of Seattle

October 11, 1991

Ms. Sarah P. Dalton
Community Planner
Seattle Airports District Office
Federal Aviation Administration
1601 Lind Avenue SW
Renton, Washington 98055-4056

Dear Sarah:

This is to thank Dennis, John, and yourself for meeting with us on September 24. The meeting was very productive and clarified issues related to the current update of the Port of Seattle's contours and NCP. For the record, I would like to confirm here our understanding of a number of points discussed at the meeting.

1. The Port will continue using the version 3.9 INM for this update.

2. The Port will be producing two NEMs: 1990 and 1996.

3. We do not need to include an examination of alternatives in the NCP as outlined in the Part 150, but will include in appendices the alternatives that were considered by the Noise Mediation Committee.

4. It is the airport's choice as to which year NEM to use for program eligibility and funding (1990 or 1996).

5. Because the future NEM reflects 1996 operational data, the 1996 forecast must be approved prior to the Port's generation of contours for that year.

6. In general, it is an FAA policy to fund only those programs within the 65 Ldn. The FAA considers policies related to homes that have fallen out of that contour to be an internal Port matter. The Port and FAA have agreed to discuss this issue further when the maps are available.

7. The Port's noise insulation program boundaries are based on the year 2000 contours developed in 1984/85. The FAA does not take issue with this policy.

Seattle-Tacoma
International Airport
PO Box 68727
Seattle, WA 98168 U.S.A.
TELEX 703433
FAX (206) 431-5912

8. As we discussed, the Port currently has a number of projects underway, including the Part 150 update, that are causing public concern and confusion over expansion of the airport. This has necessitated a reevaluation of the schedule in order to ensure that the Technical Review Committee and interested members of the general public be given more time to review and comment on the project. The FAA and Port agreed to work together to ensure that controversy is minimized and that the work continues as smoothly as possible. To assist in concluding the study as quickly as possible, consideration will be given to submitting the NEMs for approval prior to the NCP if it appears likely that public interest in the NCP amendments is greater than anticipated and will most likely require additional time.

9. The MLS and taxiway work will be reflected in 1996 contours, as well as the mediated programs.

Please let me know if there is any item with which you disagree or any significant information that has been left out of this list. Based on the meeting and on a reevaluation of the schedule and products, the Port will be needing more consultant time, which may entail requests for further funding from the FAA. I will keep you apprised of this.

As for the schedule, I am working on a new one, which I will provide to you as soon as possible and which will be shared with the TRC. I anticipate that we can finish the NEM with two more TRC meetings, three at the most. We are aiming for completion of committee work on the NEMs by December.

Again, thank you for your help on this project.

Sincerely,

Diane

Diane Summerhays
Planning Program Manager

0342X

US Department
of Transportation

**Federal Aviation
Administration**

Seattle Airports District Office
[illegible] Lind Avenue, S.W.
Renton, WA 98055-4056

December 2, 1991

RECEIVED
DEC 03 1991
NOISE ABATEMENT
OFFICE

Ms. Diane Summerhays
Seattle-Tacoma International Airport
P.O. Box 68727
Seattle, Washington 98168

Dear Ms. Summerhays:

This letter responds to your letters dated October 11, 1991 and November 27, 1991 regarding the Part 150 update. We reviewed your fleet mix predictions and forecasts for 1996 and agree that they are reasonable. Forecasts consistent with the Revised Flight Plan Study Forecasts and that comply with the 1990 Noise Mediated Agreement are acceptable to us.

We need to clarify one point made in the September 24 meeting. Section 150.21 of Part 150 states that five copies of the noise exposure map may be submitted to the Regional Director after consultation, which identifies each noncompatible land use in each area depicted on the map as of the date of submission. We recognize that the consultation and development processes are often lengthy and it is not possible to develop a map and submit it in the same calendar year. Therefore the date of submission may be a calendar year after the date of the map.

Based on the schedule we have discussed, we are anticipating receiving the maps in calendar year 1992. We understand that current year map will be based on 1990 operational data. We recommend that it be designated as a 1991 map. This is possible if the map can be accompanied by evidence that the 1990 and 1991 noise exposures were essentially the same. If the current year map is 1991, then it is appropriate that the five year map be based on 1996 forecast data.

If you have any questions, please call me 227-2661.

Sincerely,

Sarah P. Dalton
Sarah P. Dalton
Planner, Puget Sound