

Airport Proposal

Introduction

The following discussion represents the Airport's recommendations for implementation of the King County International Airport/Boeing Field Noise Compatibility Program.

During the Study Advisory Committee (SAC) review of the consultant material and gathering of input from a series of community meetings, the Airport did not take a position on any of the options considered. This approach was intended to allow the community, particularly as represented on the Study Advisory Committee, to work together to develop as much consensus as possible on these difficult problems and limited solutions.

Since most of the SAC recommendations were consensus items and all were supported by a solid majority of the SAC (there were no recommendations marked with a chasm of opinion among the SAC), the Airport is pleased to transmit all but one of those recommendations as its own.

The only recommendation made by SAC that is not contained in the Airport program proposal is the recommendation to construct a noise wall. The explanation for this decision is reflected in the discussion of the recommended Ground Run-up Enclosure later in this chapter.

Airport planning staff and management are proud of the hard work done over the past two years by the SAC and thank them profoundly for their investment of time, energy and emotion during the time they worked so professionally and respectfully on these issues together.

Noise Exposure Map Contours

The aircraft-generated noise contours used to identify areas eligible for various mitigation programs are the Future Base Case Noise Contours. These contours represent the aircraft activity forecast for the next five years and include the assumption that the Airport Master Plan will be adopted, and the proposed runway shift implemented. Although there are several recommendations that will reduce the size of the noise contours if they are implemented, the Future Base Case contours reflect the largest number of structures eligible for noise mitigation programs, thus

providing various options to the largest number of people. The following table presents the number of people, the number of residential units and other noise sensitive structures within the King County International Airport Future Base Case noise contours, that will be the Future Noise Exposure Map.

Table 1
EXISTING LAND USE WITHIN FUTURE NOISE EXPOSURE MAP CONTOURS, 2006
King County International Airport FAR Part 150 Study

Land Use	DNL 55 Contour		DNL 60 Contour		DNL 65** Contour		DNL 70** Contour		DNL 75** Contour	
Residential*	NA	Ac	NA	Ac	459	Ac	66	Ac	0	Ac
People	50,807		15,594		4,255		672		0	
House. Units	20,490		6,484		1,882		328		0	
Schools	NA		NA		1		0		0	
Historical Sites	NA		NA		2		2		0	
Fire Stations	NA		NA		2		2		1	
Com/Retail	NA	Ac	NA	Ac	186	Ac	83	Ac	2	Ac
Manufacture	NA	Ac	NA	Ac	863	Ac	322	Ac	79	Ac
Other	NA	Ac	NA	Ac	1,357	Ac	689	Ac	418	Ac
Total	17,100	Ac	6,833	Ac	2,865	Ac	1,160	Ac	499	Ac

*Based on FAA Part 150 Land Use Compatibility Guidelines, residential land uses and schools are considered compatible with sound attenuation. Cleveland School is within the Future KCIA 65 DNL noise contour.

**It should also be noted that only those non-compatible land uses within the 65 and greater DNL contours are eligible for FAA funding participation.

The total figures for each contour are cumulative. The figures for the larger contours contain the area -within all smaller contours.

SOURCE: Aerial Photography, 2000 Census Data, Field Survey, BDC Analysis

The following recommendations are ordered in the priority established by the SAC: first make all of the feasible operational changes, to assure that operators are doing what they can to reduce noise, given the economic and regulatory environment; next, make as many airport facility changes as possible to abate noise impacts; and only then work on adjustments by residents (such as home insulation programs).

Operational Recommendations

RECOMMENDATION ONE: Develop combined noise contour with Sea-Tac Airport.

COMMENT: A combined noise contour will allow mitigation programs to be extended to residents who are impacted by both Sea-Tac Airport and KCIA but who would not be eligible for mitigation programs under either airport's contours alone.

Action:

- No action required, contours have been developed.

Timeframe:

- Completed.

Cost:

- No additional cost.
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RECOMMENDATION TWO: Implement a public instrument approach procedure with an Elliot Bay ground track to avoid over-flight of residential areas.

COMMENT: The implementation of an alternative instrumentation system for approaches from the north would enable aircraft to approach over Elliott Bay and avoid over-flights of residential areas, especially Magnolia. This would have negligible effect on the size of the 65 DNL but it would provide substantial relief from single-event flyovers to the residential areas avoided by use of the alternative instrumentation approach and would be especially effective in reducing noise intrusion during nighttime hours.

Because the availability of such alternatives is currently limited, KCIA proposes to become a site for pilot program use of technology being tested by FAA.

Action:

- Meet with the FAA regarding instituting program, (KCIA pilot project at a minimum)
- Formal Motion from County Council supporting program
- Utilize a Technical Committee, including pilots and FBOs, to help move program forward by supporting the efforts made with FAA.

Timeframe:

- Can initiate the discussions and dialog with FAA concerning such an approach immediately upon submittal of the Noise Program to the FAA. Implementation of the approach will depend upon FAA developing and publishing such an approach, purchasing of equipment, aircraft instrumentation and testing. This is not contingent upon other Recommendations.

Cost:

- No additional Cost to initiate the discussion with FAA. Purchase and implementation of ground equipment could be close to \$1 million.
 - Appropriation in place if Transponder Landing System can be used.
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RECOMMENDATION THREE: Implement Close-in departure procedure for North departures.

COMMENT: This Recommendation would reduce the number of people within the 65 and greater DNL noise contours north of the Airport. The FAA has approved specific Close-in Noise Abatement Departure Procedures for all aircraft types over 75,000 pounds and each aircraft operator has such a procedure for their specific aircraft types. The Airport Sponsor can request that each operator utilize this particular procedure when departing north from King County International Airport. FAA has previously approved the procedures for specific aircraft types, but will require some airspace review to ensure safety.

Action:

- Prepare request for FAA Airspace review and continue dialog with the Agency to ensure timely completion of review.
- Write request letters to users to implement close-in departure procedure (voluntary) for each type of aircraft they fly. Work with the FBOs and pilots to explain the reasoning behind the request.
- Formal Motion from County Council

Timeframe:

- Can initiate immediately upon approval; approximately six months to fully implement after approval by the FAA. Airport users will have to notify pilots and modify procedure manuals.

Cost:

- No additional cost other than direct notification to users of the Airport and publication in Airman's Manuals. A Noise Abatement Brochure explaining the Recommendations will be prepared as part of the Part 150 Study implementation.
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RECOMMENDATION FOUR: Implement ban on Stage 2 jets at night.

COMMENT: This Recommendation can reduce the night impacts of noise levels associated with the louder, older Stage 2 business jet aircraft. These aircraft are most intrusive during the nighttime hours, and this Recommendation would result in eliminating their use during those hours. However, the implementation of this Recommendation would require an additional study to be prepared and approved by the FAA. FAA approval of Recommendation Four would result in the required additional study being eligible for Federal funding.

Action:

- Prepare FAR Part 161 Study
- Formal Motion from County Council
- Airport select consultant, prepare scope of work, submit grant application to the FAA
- Accept Grant from the FAA or prepare Study without FAA funding

Timeframe:

- FAA funding contingent upon approval of Recommendation in the Part 150 Study, approximately 9 months from submittal of Part 150 Study to approval. Consultant selection, scope preparation and grant application submittal would take approximately six months.
- Without FAA funding, can initiate process using County funding which will require a special appropriation
- Study preparation approximately two to three years

Cost:

- Approximately \$850,000 plus \$500,000 legal fees (based on experience of Naples, Florida)
 - FAA could grant 90% of Study costs, local share 10%
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RECOMMENDATION FIVE: Upgrade flight tracking and noise monitoring program (Fly Quiet Program) to achieve voluntary compliance and accountability with noise program. The Fly Quiet Program will consist of several distinct features: Operator Education Program, a Pilot's Incentive Program and Advanced Technology to Improve Noise Monitoring and Reporting.

COMMENT: This Recommendation includes upgrading the existing noise monitoring system to support voluntary Fly Quiet procedures, providing accountability in evaluating the success of the Program and conducting public outreach so that improvements can be made to the recommended noise abatement programs and procedures. The Fly Quiet Program advances the existing noise monitoring system from a reporting/investigative system into a compliance/reward monitoring system.

Flight track and other operational changes are difficult to achieve without sufficient data to analyze compliance with best flight procedures for noise abatement. Introduction of interactive flight tracking system equipment for use at community meetings and as part of an operator education program are important technological features of this Recommendation. An improved aircraft identification system is critical to track operators who do not fly the preferred procedures.

Action:

- Define program objectives and evaluation measures, timelines, equipment specifications, and potential technical services required to accomplish program objectives.
- Procure equipment and software for enhanced noise incident and flight track monitoring. This includes converting existing portable monitors and computer hardware, update software and Web capabilities.

- Analyze strategic sites for new permanent monitors that are located to validate the accuracy of noise modeling and also placed in various communities to assess accountability of noise abatement procedures.
- Utilize Technical Resource Working Group to assist refining flight procedures to compliment Fly Quiet Program.
- Engage pilots in discussion and training about best flight practices and methods to encourage pilots adopting Fly Quiet flight procedures such as increase use of Charted Visual Path, use of close-in departure procedure, avoidance of residential areas, etc.
- Obtain FAA Airspace review of voluntary procedures
- Promote incentives for pilot compliance with voluntary procedures
- Produce Fly Quiet program collateral materials and manuals for distribution to pilots and FBOs
- Publish Fly Quiet Program elements in Airman's Manual, Web site, etc.
- Use data to engage pilot involvement (ongoing).
- Conduct public outreach about Fly Quiet Program implementation to neighborhood communities.

Timeframe:

- Approximately one year to acquire equipment and become operational.
- Voluntary procedures can be implemented immediately upon approval and design of the program.
- FAA airspace review could take approximately 7 months
- Produce collateral materials and add to Web site upon development of the Program through the Technical Resource Working Group. Fly Quiet Program development could take approximately six months to accomplish using the Working Group.
- Publish Fly Quiet flight procedures in Airman's Manual, which takes approximately four months

Cost:

- Total cost would range from \$150,000 to \$400,000.
- The minimum estimate for consultant time and equipment includes: conversion of four portable monitors to permanent monitors at \$19,000 each; interactive public presentation/education software and projector at \$10,000; \$6,000 for printed operator education materials; \$24,000 for design and development of virtual pilot information materials for Web site; compatibility conversion of Sea-Tac software at \$6000; replacement of obsolete flight recorder, ancillary software and hardware, installation and training at \$20,000; development of Web pages with capacity for publication of Noise Office TAMIS reports on Web site at \$4,400.

RECOMMENDATION SIX: Maintain existing curfew on nighttime engine run-ups.

COMMENT: The Airport has an existing nighttime curfew for engine run-ups. This reduces the ground generated noise intrusion to nearby residences during critical

nighttime hours. It is recommended that the curfew be maintained as it is currently written.

A minority of SAC Members has recommended the Airport use engine specifications as an alternative approach to this night curfew. Under this proposal, run-ups would be allowed by aircraft with engines whose specifications describe noise levels below a certain level. However, the Airport is not currently equipped to enforce this variable approach to a curfew. This could be investigated and reconsidered in the Airport's next Part 150 Study.

Action:

- No Action required

Timeframe:

- In place currently

Cost:

- No additional cost

Facility Recommendations

The following Recommendations are intended to reduce ground generated noise intrusion to noise sensitive uses through the appropriate and creative use of on-airport facilities or buildings.

RECOMMENDATION SEVEN: Conduct site selection and feasibility study for Ground Run-up Enclosure (GRE).

COMMENT: The SAC evaluated the noise reduction potential associated with a Ground Run-up Enclosure and determined that significant noise reduction could be achieved through the use of such a facility. The amount of reduction is dependent upon the number and type of run-ups conducted on the Airport. Because the Boeing Company provides the largest group of aircraft of the most homogeneous type, the number and type of run-ups that could be effectively mitigated varies with the specific aircraft program that the Boeing Company is undertaking. Based on the existing uses on Airport property, it is difficult to determine a feasible site for such a facility at this time. Therefore, it is recommended that a more detailed site selection and feasibility study be undertaken.

If a Ground Run-up Enclosure is sited and constructed, this facility would be more effective in mitigating noise impacts than a noise wall would; therefore, this Recommendation replaces the noise wall recommendation made by SAC.

Action:

- Draft Request for Proposals
- Hire consultant to conduct study
- Submit Grant application to FAA for funding (90%)

Timeframe:

- Approximately 9-12 months to complete the study after consultant has been selected

Cost:

- Approximately \$100,000
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RECOMMENDATION EIGHT: Establish building design/placement standards to reduce off-airport noise effects from aircraft movements on the ground.

COMMENT: Proper placement and design of future landside facilities can be useful in reducing ground generated noise intrusion to adjacent residences. Proper acoustical treatment and placement of buildings can act as barriers to sound transmission, and such considerations should be incorporated, if feasible, in future landside development.

Action:

- Develop Request for Proposals
- Hire consultant to develop building/placement standards to reduce off-airport noise
- Identify design and noise standards for new or remodeled construction

Timeframe:

- Approximately 6-9 months to complete the study after consultant selection

Cost:

- Approximately \$80,000
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Land Use/Administrative Recommendations

The following Recommendations do not reduce the size of the noise contours but are intended to address the noise sensitive uses that would remain within the noise contours.

RECOMMENDATION NINE A: Provide a variety of options for people living in the 65 and 70 DNL KCIA contours, including purchase of avigation (noise) easements, sound attenuation and sales transaction assistance.

COMMENT: Even if all feasible noise abatement measures are implemented, there will still be residences within the significant noise contours associated with aircraft operations occurring at the Airport. As such, there are several land use options that can be offered to residents in an effort to reduce inside noise levels or provide some type of relief. The following options are intended to be voluntary at the option of the homeowner.

Action:

- Prepare Request for Proposals to provide technical assistance and implement the avigation easement, sound attenuation and sales transaction assistance programs
- Prepare FAA Grant application
- Hire consultant
- Create policy and procedures manual and obtain FAA approval
- Develop priority system as it applies to actual structures
- Notify eligible homeowners of options
- Implement programs

Timeframe:

- After FAA approval, program could start in 2004

Costs:

- If all eligible structures take advantage of programs, could be \$56 million for all housing units within the 65 and greater contours. If just the 70 DNL contour is attenuated, then projected costs are \$10 million (2001 dollars)
- FAA funding eligibility of \$5 million per year
- Budget one new (FTE) employee to manage program

Recommendation Nine B: Provide variety of options for people living in the 65 and 70 DNL combined KCIA/Sea-Tac contours including purchase of avigation (noise) easements, sound attenuation and sales transaction assistance.

COMMENT: The Study Committee recommended that sound attenuation of single-family residences (FAA definition of 4-plex or smaller) and schools are a shared first priority, with multi-family attenuation second. These are the same options presented for the KCIA noise contours but would be extended to include residents living in the combined contours that are not within either the KCIA or Sea-Tac individual contours. This Recommendation would provide relief to those residents that are not currently eligible under existing noise programs or existing FAA Policy. The intent of this Recommendation is to implement within the KCIA contours first and then address those noise sensitive uses within the Combined Contours. This would ensure that the residents closest to the airport, in the loudest noise contours, would be provided assistance first.

Action:

- Meet with FAA and Port of Seattle representatives to develop criteria, guidelines and standards for implementing the avigation easement, sound attenuation and sales transaction assistance programs in the combined contours
- Work with FAA and Port of Seattle representatives to design program
- Adoption of Intergovernmental Agreement between County and Port of Seattle
- Meet with FAA to determine funding ratio for such properties and which airport would be the Sponsor of the funds

- Utilize KCIA and Port of Seattle consultant services to implement and perform the combined work
- Create policy and procedures manual for implementation of the programs
- Develop a priority system addressing the loudest contours first
- Notify eligible homeowners of options
- Implement programs

Timeframe:

- After FAA approval, program could start in early 2004

Costs:

- If all eligible structures in the combined contours take advantage of program, cost could be \$67 million
- FAA funding limitations unknown, funding ratio unknown. The Port of Seattle receives FAA funding for such programs on an 80 percent/20 percent ratio, with the Port being responsible for 20 percent of the overall project cost and 80 percent being eligible for FAA participation. King County International Airport is eligible to receive such funds based on a 90 percent/10 percent ratio, with the County being responsible for 10 percent and 90 percent being eligible for FAA participation. The FAA has no policy addressing how to provide funds for homes affected by noise contours generated from two separate airports with different funding ratios. Additionally, the FAA would have to rule on which airport actually received the funds and was therefore responsible for the sound attenuation program. In addition, security issues may impact funding.

Recommendation Ten: Insulate schools and public buildings in the KCIA and combined contours. Sound attenuation of schools and single-family residences (FAA definition of 4-plex or smaller) are a shared first priority, with multi-family attenuation second after schools and single-family residences have been attenuated. Sleeping portions of fire stations are last priority.

COMMENT: This Recommendation is similar to the previous Recommendation that addressed these uses and structures within the KCIA contours only. This Recommendation applies to the combined contours. Subsequent to the completion of these programs inside the KCIA contours, then they should be extended to the combined contours. This Recommendation raises the same funding issues as the sound attenuation of residences within the combined contours.

Action:

- Meet with FAA, schools and Port of Seattle representatives to develop criteria, guidelines and standards for implementing the programs in the combined contours
- Work with FAA and Port of Seattle representatives to identify program boundaries

- Formal Resolution and Intergovernmental Agreement between County, Port of Seattle, jurisdictions and schools
- Meet with FAA to determine funding ratio for such properties and which airport would be the Sponsor of the funds
- Hire consultant or utilize experienced Port of Seattle personnel to manage and perform the work
- Create policy and procedures manual for implementation of the programs
- Develop a priority system addressing loudest contours first
- Notify jurisdictions of eligible structures
- Implement programs

Timeframe:

- After FAA approval, program could start in 2005 or 2006, after all work within the KCIA contours has been completed. This is also consistent with the timeframe that the school district has identified for its remodeling efforts.

Costs:

- If all eligible structures take advantage of program, could be \$20 million
- FAA funding limitations unknown, funding ratio unknown. The Port of Seattle receives FAA funding for such programs on an 80 percent/20 percent ratio, with the Port being responsible for 20 percent of the overall project cost and 80 percent being eligible for FAA participation. King County International Airport is eligible to receive such funds based on a 90 percent/10 percent ratio, with the County being responsible for 10 percent and 90 percent being eligible for FAA participation. The FAA has no policy addressing how to provide funds for homes affected by noise contours generated from two separate airports with different funding ratios. Additionally, the FAA would have to rule on which airport should receive the funds and hold responsibility for the sound attenuation program. Security issues could impact funding.
- If KCIA only, funding of 90% by FAA and 10% by County

Recommendation Eleven: Investigate alternatives for voluntary purchase of homes within the 70 DNL contour using programs that are not available through the federal government.

COMMENT: All of the recommended programs and procedural changes within the 65 DNL contour and greater will leave areas of residential use inside the 70 DNL contour. Given the normal requirement that homes be brought up to building codes at the time of insulating, it's possible that some of the older homes cannot be sufficiently mitigated at a typical cost to reduce the noise levels to a range compatible with residential use under FAA guidelines (i.e., attain a level of no more than 45 dB inside the home). A mandatory purchase program applied to entire neighborhoods would require residents to leave who are not troubled by the noise level and do not

wish to live in other areas of the City. A voluntary program funded by the FAA could lead to degradation of the remaining neighborhoods because FAA funding requires either maintaining the purchased site in a cleared, unused state or changing the land use, both of which lead to neighborhood deterioration. On the other hand, it was felt that some relief should be provided to those who currently reside in an area of such high noise levels, if the residents would like relief that would not lead to neighborhood deterioration.

Action:

- Prepare Request for Proposals for a consultant to evaluate possible programs to achieve an acceptable voluntary purchase program.
- Hire consultant
- Work with affected City to develop guidelines for alternative uses of land
- Create policy and procedures manual for such a program
- Develop priority system as it applies to actual structures
- Notify eligible homeowners of options
- Implement programs

Timeframe:

- Approximately 12-18 months to complete the study

Costs:

- Approximately \$50,000 for the study