

The Recommendations are summarized as follows.

- Recommendation 1** Develop Combined Noise Contours with Sea-Tac International Airport (Completed)
- Recommendation 2** The Airport is to work with the Appropriate Federal Agencies, Local Jurisdictions, Tenants, and Community to Implement a Public Instrument Approach Procedure over Elliot Bay to avoid Over-Flight of Residential Areas
- Recommendation 3** Implement Close-In Departure Procedure for North Departures
- Recommendation 4** Investigate the Viability of Undertaking a Part 161 Study for Stage 2 Jets and Maintain the Existing Curfew on Nighttime Engine Run-Ups
- Recommendation 5** Upgrade Flight Tracking and Noise Monitoring Program - Fly Quiet Program
- Recommendation 6** Conduct a Site Selection and Feasibility Study for Ground Run-Up Enclosure (GRE)
- Recommendation 7** Establish Building Design/Placement Standards to Reduce Off-Airport Noise Effects from Aircraft Movements on the Ground (In Progress)
- Recommendation 8** Provide a Variety of Sound Attenuation for Single-Family Residential, Schools and Public Buildings, Purchase of Avigation Easements and Sales Transaction Assistance in the 65 and 70 DNL Contours
- Recommendation 9** Investigate the Viability of the Voluntary Purchase of Homes within the 70 DNL Using Programs that are not Available Through Federal Programs (In Progress)
- Recommendation 10** Insulate Schools and Public Buildings

It is the intent of the Airport to implement future noise mitigation programs as quickly as possible. However, it must be remembered that this will depend very heavily on the availability of funds and resources, especially the availability of Federal funding.

**RECOMMENDATION 1—DEVELOP COMBINED NOISE CONTOURS  
WITH SEA-TAC INTERNATIONAL AIRPORT**

**ISSUE**

Recognize there are some residents which are not adversely impacted by either KCIA or Sea-Tac but are adversely impacted by the combined noise associated with both airports.

**NEW ACTION**

**This Action has been initiated and completed.**

**COMMENTS**

This Recommendation has been completed as combined contours were developed and presented to the Study committee.

**COST**

There is no cost associated with this Recommendation as it has been completed.

**RESPONSIBLE PARTIES**

No further action required.

**AIRPORT ACTION**

No further action required.

**TIME FRAME**

No further action required.

**RECOMMENDATION 2—AIRPORT IS TO WORK WITH THE APPROPRIATE FEDERAL AGENCIES, LOCAL JURISDICTIONS, TENANTS, AND COMMUNITY TO IMPLEMENT A PUBLIC INSTRUMENT APPROACH PROCEDURE OVER ELLIOT BAY TO AVOID OVER-FLIGHT OF RESIDENTIAL AREAS**

**ISSUE**

Reduce Aircraft Over Flights to Residential Areas North of the Airport.

**NEW ACTION**

Implement a public instrument approach procedure with an Elliott Bay ground track to avoid over flights of residential areas. New technology should be aggressively pursued with the FAA to implement such a procedure that would route approaching aircraft over the water instead of straight in over residential areas.

**COMMENTS**

The implementation of such a system for approaches from the north would enable aircraft to approach through the Bay and avoid over-flights of residential areas, especially Magnolia. This would have no effect on the size of the 65 DNL but it would provide substantial relief from single-event flyovers to these residential areas. This would be especially effective in reducing noise intrusion during sensitive nighttime hours.

**COST**

The cost for the Action is anticipated to be approximately \$1 Million dollars for the ground based equipment. It is anticipated that no additional airborne equipment would be required.

**RESPONSIBLE PARTIES**

The Airport is responsible for meeting with the FAA regarding instituting the program and procedure, (a KCIA pilot project at a minimum). A Formal Motion from County Council supporting program will be required, and the Airport will utilize a Technical Committee, including pilots and FBO's, to help move program forward.

The FAA is responsible for approving such a procedure, procuring the equipment and

implementing such a procedure. The operators are responsible for helping to implement the procedure when possible. The FAA would be responsible for completing the required environmental documentation.

***AIRPORT ACTION***

The Airport will seek a Motion from the County Council supporting the Recommendation, continue to meet with and support the FAA in approving and implementing the procedure and working with both based and transient pilots to use the procedure after it is implemented.

***TIME FRAME***

The Airport can initiate the discussions and dialog with FAA concerning such an approach immediately upon approval by 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.

**RECOMMENDATION 3—IMPLEMENT CLOSE-IN DEPARTURE  
PROCEDURE FOR NORTH DEPARTURES**

**ISSUE**

Reduce the Size of the 65 DNL Noise Contour Over Residential Areas North of the Airport.

**NEW ACTION**

Implement the close-in departure procedure for northern departures.

**COMMENTS**

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 the specific aircraft, but will require some airspace review to ensure safety.

**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.

**RESPONSIBLE PARTIES**

The Airport is responsible for notifying the operators to use the close-in departure procedure and to work with the pilots and FBO's to explain the reasoning behind the request. The FAA is responsible for approving this Recommendation and making an airspace review to ensure safety concerning the procedure. A Formal Motion from County Council supporting this procedure will be requested. The operators are responsible for helping to implement the procedure when possible.

**AIRPORT ACTION**

The Airport will seek a Motion from the County Council supporting the Recommendation, 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 FBO's and pilots to explain the reasoning behind the request.

***TIME FRAME***

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

**RECOMMENDATION 4—INVESTIGATE THE VIABILITY OF UNDERTAKING A PART 161 STUDY FOR STAGE 2 JETS AND MAINTAIN THE EXISTING CURFEW ON NIGHTTIME ENGINE RUN-UPS**

**ISSUE**

Reduce noise impacts from loud jets.

**NEW ACTION**

This Action will investigate the viability of a Part 161 Study to prohibit the use of Stage 2 jets at the Airport while concurrently maintaining the existing ban during the nighttime hours (10:00 pm to 7:00 am).

**COMMENTS**

If the undertaking of a Part 161 Study ban on Stage 2 jets is approved, this Action will reduce the number of residents within the 65 DNL noise contour and will remove significant noise intrusion during the most noise sensitive time. This Action will reduce the 65 DNL noise contour over the area that is directly north and south of the Airport and will reduce loud single events for residents all around the Airport. Figure S4 on the following page illustrates the Future Noise Contour with and without the Stage 2 Ban in an attempt to visually indicate the incremental benefit this Recommendation has to the overall noise environment. Please refer to Table F1, as it indicates that there would be less people inside the 65 or greater DNL if this Recommendation is implemented.

It is recognized that such a restriction cannot be implemented without completing a FAR Part 161 Study. The Airport is requesting approval for such a study so that AIP funding may be made available.

**COST**

The cost to prepare such a Study is estimated to be in the range of \$850,000-1,500,000 including legal fees.

**RESPONSIBLE PARTIES**

The Airport is responsible for preparing such a Study through the use of consultants. The Airport would select the consultants, prepare the scope and application and accept FAA funding, if available. A Formal Motion from the County Council would be required. The FAA is responsible for approving the

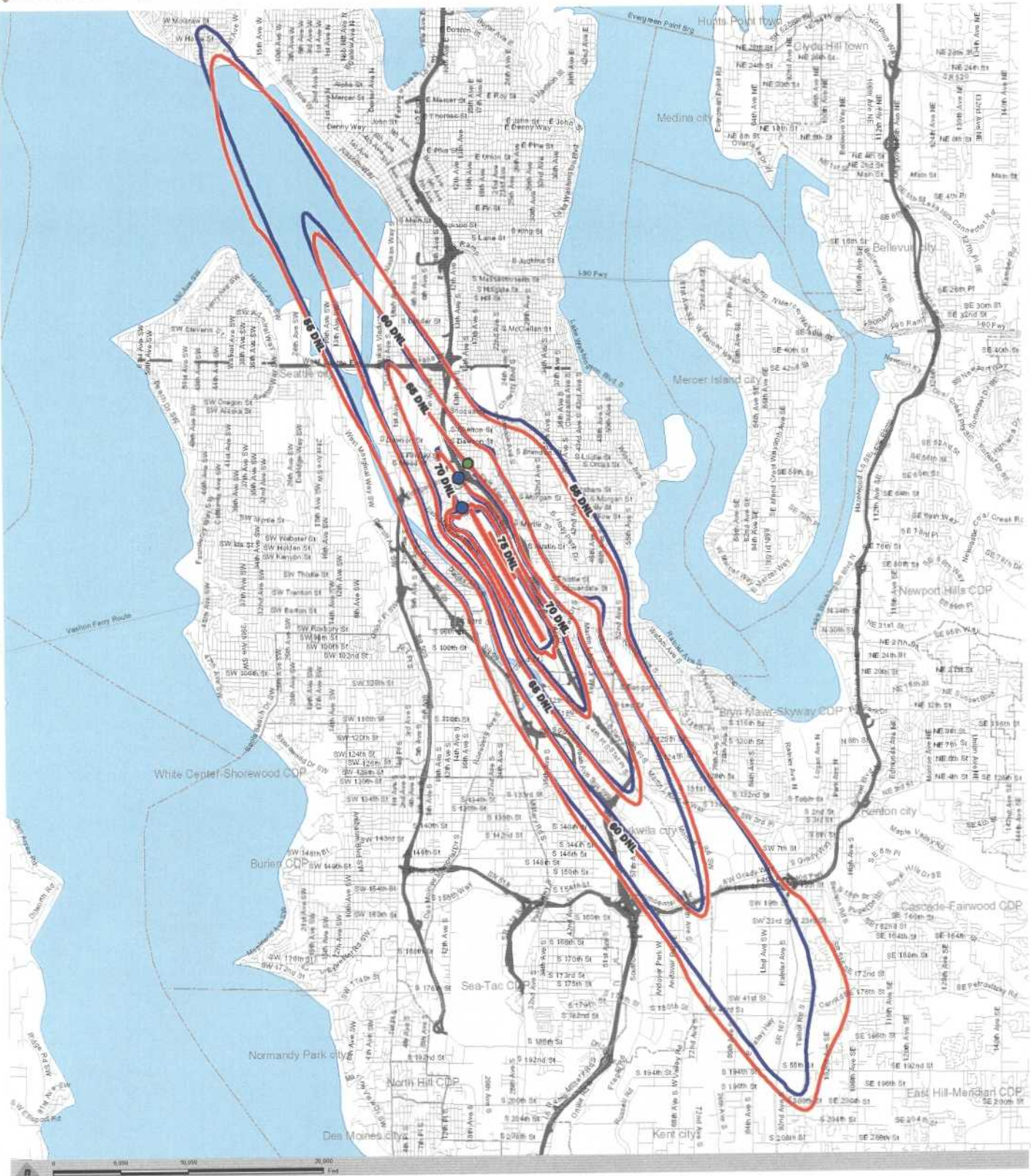


Figure S4 Future 2008 Base Case and Total Restriction of Stage 2 Operations DNL Contours

- 2008 Base Case Noise Contours
- Ban Stage 2 DNL Contours
- Historical Landmark
- School

# King County

**INTERNATIONAL AIRPORT/Boeing Field**  
**FAR Part 150 Study**



Recommendation and providing funding, if such funding is available and the number of people removed from the contour is significant.

***AIRPORT ACTION***

The Airport will select consultants to prepare such a Study and submit an application to the FAA upon approval of the Recommendation by the FAA.

***TIME FRAME***

The consultant could be selected, scope prepared and an application submitted within six months of approval of the Recommendation by the FAA. The Study itself will take approximately two to three years to complete. Implementation of the restriction will take approximately six to nine months after approval of the Study.

**RECOMMENDATION 5—UPDATE FLIGHT TRACKING AND NOISE MONITORING PROGRAM (FLY QUIET PROGRAM)**

**ISSUE**

Verification of Noise Abatement Program and Flight Track Adherence.

**NEW ACTION**

It is recommended that the Airport upgrade the existing noise monitoring system, including flight track monitoring, to monitor noise levels and compliance with the noise abatement measures. **This Action has been initiated and is currently in progress.**

**COMMENTS**

This Recommendation includes upgrading the existing noise monitoring system to include flight track monitoring, which will be used to formulate voluntary Fly Quiet procedures, provide accountability in evaluating the success of the Program and provided information so that improvements can be made to the recommended noise abatement programs and procedures. Flight track and other operational changes are difficult to achieve without sufficient data to indicate problems with existing procedures, and this is the method to best gather defensible data.

The type of equipment and capabilities will be determined through the use of the Technical Committee and Airport Staff/Management. This may include additional monitors and computer hardware, updated software and Web capabilities. There is one permanent monitor in Beacon Hill and more will be required.

The Fly Quiet Program not only entails monitoring equipment, it includes (as described on page G.11 of the primary document) the production and distribution of a Fly Quiet brochure (currently 10,000 have been disseminated to pilots and the community), the printing of boards for pilots lounges and flight schools, a pilot resource working group that is highly interested in fly quiet procedures and education, plus printed materials for the new West Vashon Departure if it comes to fruition.

A committee could help identify the potential noise monitoring sites and review the specifications for the system. This process takes approximately two years to complete. The noise monitoring sites must be owned or long-term leased by the Airport, be secure and have electrical power/telephone access.

### ***COST***

It is estimated that consultant and equipment installation, approximately \$125,000-400,000. This includes conversion of portable monitors to permanent monitors (\$13,000 each), Fly Quiet Program compliance at \$43,000, compatibility with Sea-Tac software conversion at \$6,000, new digital recorder, PC server and software, installation and training at \$20,000, and annual maintenance at \$49,000. Additional new monitors may bring the cost up to around \$400,000, including consultants time. Preparation and Printing of materials/website, \$21,000.

### ***RESPONSIBLE PARTIES***

The Airport is responsible for hiring the consultant, identifying the sites, developing the specifications, budgeting for the equipment and installing the equipment through a contractor. The Airport is responsible utilizing the Technical Committee to help refine and compliment Fly Quiet Program, for engaging pilots in discussion and training about practices and encourage change; such as increase use of Charted Visual Path, Close-in departure, avoidance of residential areas, etc. and to promote incentives for pilot compliance. The Airport will produce materials and manuals for distribution to pilots and FBO's. The FAA is responsible for assisting the Airport with funding if such funding is available.

### ***AIRPORT ACTION***

The Airport will budget for monitoring, hire the consultant, prepare specifications and initiate the process as soon as possible. They will apply for Federal funds for the permanent system when such funds become available.

### ***TIME FRAME***

It will take approximately one year to acquire the equipment and become operational,

voluntary procedures can be implemented immediately, FAA airspace review could take approximately 7 –9 months, Fly Quiet Program development could take approximately 6 months to accomplish. Publication procedures in Airman's Manual could take approximately 4 months.

**RECOMMENDATION 6—CONDUCT A SITE SELECTION AND  
FEASIBILITY STUDY FOR GROUND RUN-UP  
ENCLOSURE (GRE)**

**ISSUE**

Reduce Noise Associated with Ground Run-Up/Maintenance Activities.

**NEW ACTION**

This Action is to conduct a site selection and feasibility study for a Ground Run-up Enclosure (GRE). **This Action has been initiated and is currently in progress.**

**COMMENTS**

The Study Advisory Committee evaluated the noise reduction potential associated with a Ground Run-up Enclosure and determined that 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, with the majority of those associated with the Boeing Company. The number and type of run-ups vary 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.

**COST**

This Action is estimated to cost approximately \$100,000.

**RESPONSIBLE PARTIES**

The Airport is responsible for preparing the Request for Proposals (RFP), hiring the consultant and submitting a grant application to the FAA. The FAA is responsible for providing funding, if it is available.

**AIRPORT ACTION**

The Airport will prepare the RFP, hire the consultant, submit the grant application and manage the study.

**TIME FRAME**

This Action can be implemented as soon as the FAA has approved the Recommendation. It will take approximately 9-12 months to complete the study after consultant selection.

**RECOMMENDATION 7—ESTABLISH BUILDING DESIGN/PLACEMENT STANDARDS TO REDUCE OFF-AIRPORT NOISE EFFECTS FROM AIRCRAFT MOVEMENTS ON THE GROUND**

**ISSUE**

Reduce noise ground generated noise impacts to residents.

**NEW ACTION**

This New Action is to identify standards for building placement and design to act as barriers to reduce the effects of ground generated noise to adjacent residences.

**COMMENTS**

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 can act as barriers to sound transmission, and such considerations should be incorporated, if feasible, in future landside development.

**COST**

The cost to prepare the study is approximately \$80,000.

**RESPONSIBLE PARTIES**

The Airport is responsible for developing the RFP, hiring consultants to develop the standards and for adopting such standards for building design and placement.

**AIRPORT ACTION**

The Airport would develop the RFP and hire the consultant as soon as funds are available. Funds will be budgeted as soon as possible.

**TIME FRAME**

This Action can be initiated immediately, the study will take approximately 9 months from consultant selection and is not dependent upon any other Action.

**RECOMMENDATION 8—PROVIDE A VARIETY OF SOUND  
ATTENUATION FOR SINGLE-FAMILY  
RESIDENTIAL, SCHOOLS AND PUBLIC  
BUILDINGS, PURCHASE OF AVIGATION  
EASEMENTS AND SALES TRANSACTION  
ASSISTANCE IN THE 65 AND 70 DNL  
CONTOURS**

**ISSUE**

Reduction of noise sensitive land uses within the Airport environs.

**NEW ACTION**

It is recommended that the Airport sound attenuate, on a voluntary basis, those single-family houses and multi-family structures within the 65 and 70 KCIA noise contours, which are economically feasible to attenuate. As an option, the Airport would offer Sales Assistance to homeowners wishing to sell their homes but are not able to do so due to proximity to the Airport. This would be a voluntary Action available to homeowners subsequent to sound attenuation of their homes. A third option would be the voluntary purchase of an avigation easement from those homeowners who do not want to take advantage of either the sound attenuation or sales assistance programs. Those properties within the Noise Mitigation Boundary that are eligible for participation can be seen in the following figures S5 through S9.

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.

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, which 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.



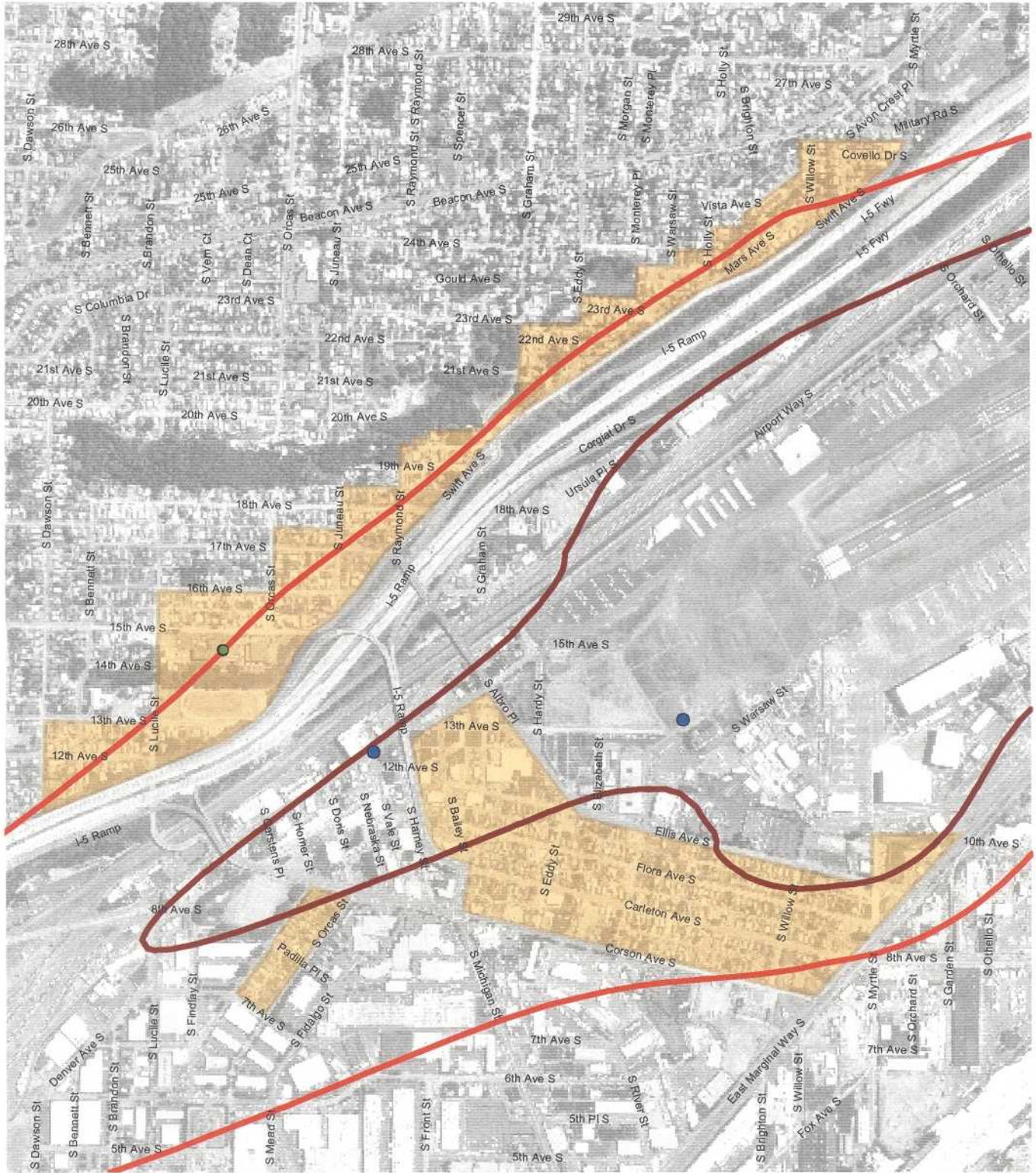


Figure S6 Noise Mitigation Boundary Detail Area 1  
 Indicating Eligible Properties (Future 2008 Noise Contour)

- Noise Mitigation Boundary
- 65 DNL Noise Contour
- 70 DNL Noise Contour
- Historical Landmark
- School



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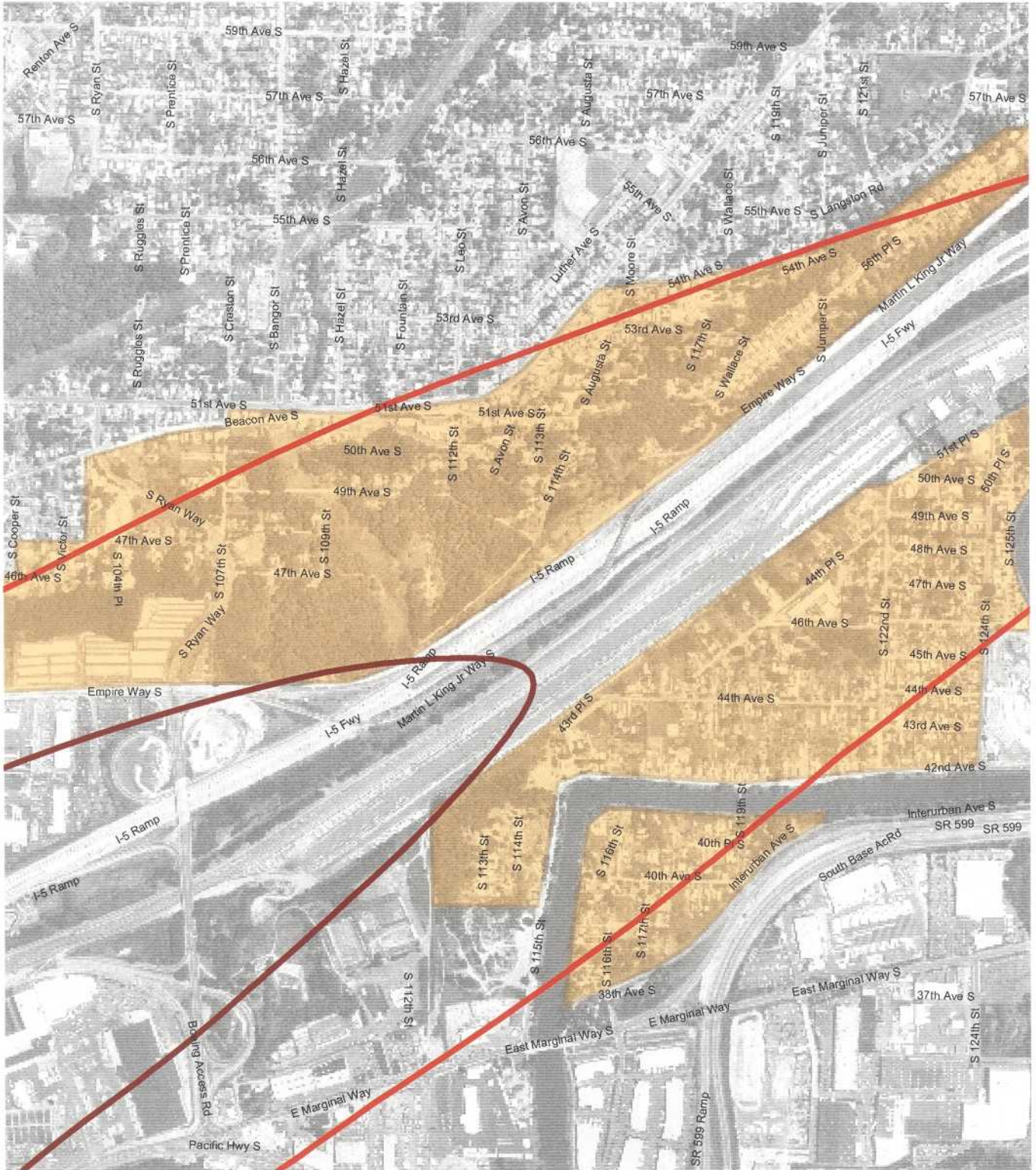


Figure S8 Noise Mitigation Boundary Detail Area 3  
 Indicating Eligible Properties (Future 2008 Noise Contour)

-  Noise Mitigation Boundary
-  65 DNL Noise Contour
-  70 DNL Noise Contour



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## **COMMENTS**

This Action would allow those homeowners within the 65 and 70 DNL noise contours to receive sound attenuation for their homes to reduce the inside noise levels to 45 dB or below. The Federal Aviation Administration guidelines consider sound attenuated houses within the 65 DNL contour compatible if sound attenuation achieves 25 dB reduction and homes inside the 70 DNL if they receive 30 dB reduction. This Action would convert non-compatible uses to compatible uses and would reduce the noise intrusion to those residents who decide to take advantage of this offer. The Airport would receive a noise easement in return for the sound attenuation.

A Pilot Program could be developed so that a "Standard Package" for such attenuation would then be identified for both the 65 and 70 contours and utilized to sound attenuate houses within the same noise contours in approximately the same location. If attenuation is found to be economically unfeasible or if other circumstances exist, the Airport would determine if purchase of noise easements only would be more desirable.

The Sales Assistance Program would allow those residents within the 65 and 70 DNL who determine that sound attenuation is not desirable to sell their houses. The Program is intended to provide those residents within the contours an opportunity to sell their homes at fair market value. The Program is designed so that the homeowner places the home on the market at fair market value. If the home does not sell within the average time limit that homes in the immediate area sell, then the selling price is reduced a certain percentage and it is placed on the market again. This process is continued until the home sells. The Airport makes up the difference between the original sales price and the actual sales prices. Prior to closing, an aviation easement is placed on the property, and this is only available to homeowners after they have received sound attenuation. This assures that future

purchasers would have sound attenuation and be considered compatible.

The Avigation Easement Purchase Program would allow those homeowners with the 65 and 70 DNL contours to sell an avigation easement to the Airport, which would grant to the Airport the right for aircraft to fly over their home and generate noise. The easement would be attached to the property and would be binding on subsequent purchasers. This Action will be offered at the same time as sound attenuation. These programs are all contingent upon the availability of Federal funds. Additionally, Cleveland High School, which is within the 65 DNL contour is also recommended for sound attenuation.

### ***COST***

The cost to implement this Action is estimated to be approximately \$70 Million if all eligible structures take advantage of the programs. It is estimated to be approximately \$12 Million for the 70 DNL contour only. FAA funding anticipated at approximately \$5 Million per year, the maximum allowable.

### ***RESPONSIBLE PARTIES***

The Airport is responsible for preparing an RFP for consultant selection, preparing and submitting the FAA Grant Application, hiring the consultant, developing the priority system and priority manual, notifying eligible homeowners of options and implementing the program. The FAA is responsible for helping fund the programs if funds are available.

### ***AIRPORT ACTION***

The Airport will prepare an RFP for consultant selection, prepare and submit the FAA Grant Application, hire the consultant, develop the priority system and priority manual, notify eligible homeowners of options and implement the program upon receiving funding. The Airport will budget its funds to match the Federal grant, and hire approximately one more employee to manage the Program.

### ***TIME FRAME***

This Action is slated for implementation in approximately 2007, upon FAA approval and funding.

**RECOMMENDATION 9—INVESTIGATE THE VIABILITY OF THE VOLUNTARY PURCHASE OF HOMES WITHIN THE 70 DNL USING PROGRAMS THAT ARE NOT AVAILABLE THROUGH FEDERAL PROGRAMS**

**ISSUE**

Reduction of noise sensitive land uses within the Airport environs.

**NEW ACTION**

This Action will investigate alternative funding sources which are not available through federal programming channels for the voluntary purchase of those homes within the 70 DNL noise contour. **This Action has been initiated and is currently in progress.**

**COMMENTS**

This Action will provide funding assistance from sources other than the Federal Government for allowance of the airport to voluntarily purchase those individuals whose homes are within the 70 DNL noise contour. Once available monies have been procured, this Action will reduce the number of individuals affected by noise

**COST**

The cost to implement this Action is minimal and part of the normal planning process.

**RESPONSIBLE PARTIES**

The Airport is responsible for working with various funding agencies – local jurisdictions, state agencies – to determine which resources are available and plausible for this recommendation.

**AIRPORT ACTION**

The Airport will investigate all possible options available to aid in helping finance the voluntary purchase of those homes within the 70 DNL noise contour.

**TIME FRAME**

This Action can be implemented immediately, as it is not contingent on other programming recommendations.

## **RECOMMENDATION 10—INSULATE SCHOOLS AND PUBLIC BUILDINGS**

### **ISSUE**

Reduction of noise sensitive land uses within the Airport Environs.

### **NEW ACTION**

This Action is to insulate schools and public buildings in the following order of priorities in the KCIA 65 and 70 DNL contours. Sound attenuate schools as a first priority (shared with single-family structures as outlined previously), with sleeping portions of fire stations (after multi-family structures) as the last priority.

### **COMMENTS**

This Action will allow those schools and public buildings to receive sound attenuation based on the FAA guidelines to achieve attenuation for schools (Cleveland High) and sleeping portions of fire stations (#53, 4202 S. 115<sup>th</sup> St, Tukwila, WA, and #27, 1000 S. Myrtle, Seattle, WA). This Action would convert non-compatible uses to compatible uses and would reduce the noise intrusion to those facilities deciding to take advantage of this offer. The Airport would receive a noise easement in return for the sound attenuation.

### **COST**

The cost to implement this Action is approximately \$10 Million.

### **RESPONSIBLE PARTIES**

The Airport is responsible for preparing an RFP for consultant selection, preparing and submitting the FAA Grant Application, hiring the consultant, developing the priority system and priority manual, notifying eligible homeowners of options and implementing the program. The FAA is responsible for helping fund the programs if funds are available.

### **AIRPORT ACTION**

The Airport will meet with representatives of the school and fire stations to discuss the project and process, submit application for funds, hire the consultant and develop policy and procedures manual, and implement the program.

***TIME FRAME***

This Action is anticipated to start in approximately 2005/6, depending upon the availability of funds.