



## **Seattle-Tacoma International Airport**

### **Part 150 Noise Compatibility Study Update**



## **February 24, 2010 Public Workshop Draft Report**

**March 17, 2010**



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## PROJECT OVERVIEW

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The Port of Seattle is participating in a Federal Aviation Regulation Part 150 Aircraft Noise and Land Use Compatibility Study. The goal of Sea-Tac Airport's Part 150 Study is to determine *where* noise impacts from the airport are experienced the most, as well as the *type* of noise people experience from the airport. Once these noise impacts have been analyzed and documented, the Part 150 Study goes on to develop and recommend actions that can lessen the effects of aircraft noise. Typical actions could include measures such as:

- Identification of technology that may help to improve aircraft noise reduction during landings and approaches.
- Improvements on the airfield itself that reduce noise (such as a “hush house” for engine maintenance run-ups).
- Sound insulation for residents in close proximity to the airport.
- Land use zoning that encourages compatible uses next to the airport.
- Property acquisitions that provide a buffer between the airport and the surrounding community.

This is the fourth Part 150 Study the Port of Seattle has engaged in; the first was conducted in 1985. As a result of previous Part 150 studies, the Port has invested over \$500 million in sound mitigation programs, which included additional acquisitions and sound insulation programs based on the new 3<sup>rd</sup> runway noise. Sea-Tac Airport is recognized today as having one of the most comprehensive aircraft noise reduction programs in the nation.

This Part 150 study represents the first time that the noise impacts from the new third runway, which opened for operation in late 2008, will be analyzed using actual data. Landrum and Brown, a national aviation consulting firm, is the lead consultant for the study. Norton-Arnold & Company, a Seattle-based firm, is a sub-consultant to Landrum and Brown and is supporting the public involvement process for the study.

### ***Workshop Overview***

The workshop was held on Wednesday February 24, 2010 from 5:00 to 7:30 p.m. at Mt. Rainier High School in Des Moines. Approximately 150 people attended the workshop, which was staffed by representatives of the Landrum & Brown consultant team and the Port of Seattle. The workshop agenda is included in Appendix A of this document.

This workshop was the first of six scheduled public workshops that will be held throughout the Part 150 Study. This workshop consisted of three main elements:

1. A **presentation** that described the Part 150 process -- areas expected to be studied, key elements of the Part 150 scope, study products, and opportunities for public input to the study;
2. **Small group facilitated discussions** to get input on the “scope” of the Part 150 Study -- concerns about noise, where that noise occurs, and ways to reduce, or lessen the impacts of, that noise.
3. A **“reporting out” session** to share the key points from each discussion group and to ask follow-up questions about the study.

The information gathered at this workshop will be used to guide the work of the Part 150 Consultant Team. The team will report the results of the first workshop at the second workshop which is anticipated to occur in May-June 2010.

### **Outreach and Advertising**

The Port of Seattle conducted a number of outreach activities and advertised the workshop in a variety of ways. Paid advertisements were placed in the *Highline Times* on February 12<sup>th</sup> and 19<sup>th</sup>, and in the *Seattle Times* on February 10<sup>th</sup>. There were also notices placed in the Port's newsletter, *Air Mail*, which is sent directly to homeowners in the airport communities and was received 3-4 weeks prior to the meeting date.

The workshop notice was also posted on several area blogs such as the B-town Blog. There were also a series of "constant contact" notices and reminders, an email alert system the Port of Seattle uses to keep the public informed about Port events, activities and projects. The "constant contact" notices and reminders were sent specifically to people who sign up to be on a Part 150/Noise e-mail notification list.

The dates were listed on both the Port web site and the external Part 150 specific web site. A few local news stations also announced the meeting as a result of a press release that went out about one week prior to the actual meeting. There was also a message on the noise hotline advertising the meeting. And lastly, two email messages were sent to elected officials, neighborhood groups, city councils, and citizen organizations throughout the greater Seattle area.

## PRESENTATION

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Rob Adams provided a 30 minute presentation on the Part 150 Study. The presentation was designed to accomplish three goals:

1. Provide a broad overview of the Part 150. This included an overview of the requirements for completing a Part 150 Study, as well as an understanding of what can and cannot be accomplished through the study. The major elements of a Part 150 Study, Noise Exposure Maps, Alternate Operating Procedures, and Public Outreach, were discussed to provide a basic understanding of the work that will be performed over the next two years.
2. Discuss this Part 150 Study at Sea-Tac. The goals of this study were presented, as well as the areas where major focus would occur. The important point was made that this study would look forward, not back when dealing with new technologies and the ability to make meaningful changes for the areas nearest the airport.
3. Highlight the major elements of the scope of work for the Part 150 Study. The main scope of work is complete, but there are a number of areas where the public has an opportunity to provide meaningful input into finalizing the scope of work. These areas include the overall focus of the concerns, the use of supplemental metrics, ways of presenting data, and the way in which outreach is conducted.

The presentation concluded with instructions for the audience to move to their designated breakout station to work with the facilitators on answering the questions. The complete presentation is included in Appendix B of this report.

## SMALL GROUP DISCUSSIONS

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Participants were divided into 15 randomly assigned discussion groups (based on a number printed on their agendas). All groups were facilitated by a staff member from the Port, Landrum and Brown, or Norton-Arnold & Company. The facilitators asked participants to respond to six questions and recorded responses on large flip charts. Participants were asked to answer these questions:

1. What are your concerns about noise from operations at Sea-Tac?
2. What information would be helpful for you to understand more about the noise you experience?
3. Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?
4. Are there areas where additional noise monitoring is needed and for what conditions? (maps that showed current monitor locations were provide at each table; participants placed adhesive dots in areas where they though additional monitors should be located)
5. Do you have any suggestions for ways to reduce noise where you live?
6. What is the best way to communicate with you about the Part 150 Study?

The discussion groups had approximately forty-five minutes to address the six questions. The summary below highlights the key areas from all the comments received from all discussion groups. The verbatim notes from each discussion group are provided in Appendix C of this report.

### ***Concerns About Noise***

Participants identified a number of concerns about noise from Sea-Tac operations. The majority of participants said that their concerns were related to operations on the third runway, and the high noise levels they have experienced ever since the runway opened in late 2008. While participants identified a number of concerns about noise the most prevalent concerns across all groups were:

1. **General concerns about noise:** Participants were specifically concerned about the impacts of noise on their physical and mental health. They have experienced loss of sleep, inability to have “peace and quiet” in their homes at any time in the day or night, have had to keep their windows closed during the summer, and can no longer enjoy being outside.
2. **Late night noise:** Participants frequently mentioned being disrupted by late night engine run-ups and by late night flights. They said that the late night flights are large, older cargo planes that are very loud; these flights takeoff at regular intervals throughout the night and early morning and are very hard to sleep through. This results in being awakened regularly throughout the night.
3. **Property values:** Participants were concerned that the noise from the third runway has negatively affected their property values and that they would either not be able to sell their homes or would have to sell them for a price far less than what they could have sold them before the third runway became operational.



4. **DNL criteria and boundaries:** Participants said that the 65 DNL criteria was too high and that it was an outdated level to use as a standard for mitigation. They also said that the boundaries used were far too arbitrary and did not take into account geographic or neighborhood boundaries.

### ***Information About Noise***

Participants identified a number of topics about which they would like more information.

1. **Procedures:** Participants said that they wanted more information about Sea-Tac's procedures for flight paths, night time operations, and run-up activity, what are allowed and when, and if there are fines for violating those procedures. They also wanted to know the procedures for developing the noise contour levels and how modeling and "real" noise were used to develop those levels.
2. **Noise program:** Participants said they'd like more information about the current noise program and what has been done to mitigate noise to date and how decisions have been made for specific mitigation actions. They said they would like more information about monitoring – where exactly are the monitors located, if they can get real-time noise information, and how locations are chosen. They also wanted to know if portable monitors could be used to measure third runway noise. Finally, they said that they'd like more basic information about what the 65 DNL level means and how it is generated
3. **Third runway operations:** Participants wanted more information about third runway operations, specifically about when it is used, how often, and how decisions are made about when to use it. They also wanted to know what types of planes – passenger, freight, older, quieter, etc. – use the runway.

### ***Concern About Individual or Multiple Aircraft***

Participants made a number of comments about the noise impacts of both single events and multiple aircraft. Both types of noise were cited as distressing. A number of people felt that single night time events were of the greatest concern, but others said it was difficult to compare the two because being woken up once in the middle of the night is an immediate impact and the noise related to multiple aircraft tend to cause long-term impacts, and the longer-term impacts are probably more severe.

### ***Additional Noise Monitoring***

Participants identified a number of locations that they think need additional monitors. The locations were marked on a map with sticky dots; participants by and large said that there needed to be more monitors to measure noise from the third runway, and that those monitors should be in the north/south alignment of the third runway and to the west of the third runway. It was noted that seasonal conditions should be compared and monitored, including weather and temperature variations, heavier loads during summer, and less foliage in winter. Participants also said that landforms should be considered when selecting monitor locations.

## ***Ways to Reduce Noise***

Participants suggested several ways to reduce noise, and a number of the suggestions related specifically to the third runway. The most-mentioned ideas were:

1. **Alter third runway operations:** Some participants said that the third runway should not be used at night between 10 p.m. and 6 a.m. Others suggested that only “quiet” airplanes should be allowed on the third runway at night and that the large freight airplanes should not be able to use it at night. It was also suggested that aircraft increase their altitude on approach and departures.
2. **Insulate homes:** Participants said that the Port should install new windows in homes affected by third runway operations; air conditioning was also mentioned as an effective mitigation measure since windows could not be opened in the summer. Most people felt that this type of mitigation should be offered in areas that experience noise levels below the 65 DNL level, and that the boundaries for this mitigation be determined by neighborhood and geographic borders. A number of people were concerned that they would have to wait a long time for this mitigation program to be implemented.
3. **Noise control:** Participants identified a number of measures that could be taken to reduce noise at or near the airport. These included building noise walls and berms, building a hush house, planting trees and other landscaping, raise fines for night time runups, and explore technological options.

## ***Ways to Communicate With the Public***

Participants said that they would like to be informed about opportunities to participate through more grassroots notices at grocery stores and libraries. They also suggested radio and TV, advertising in *Highline Times* and other local newspapers, the B-Town Blog, and through the Port web site and email. They also said that they would like the opportunity to interact with FAA staff at the public meetings and with experts that they engage with in the small discussion groups. Finally, they said that they would like to have comments responded to on-line prior to upcoming meetings.

## REPORTING OUT

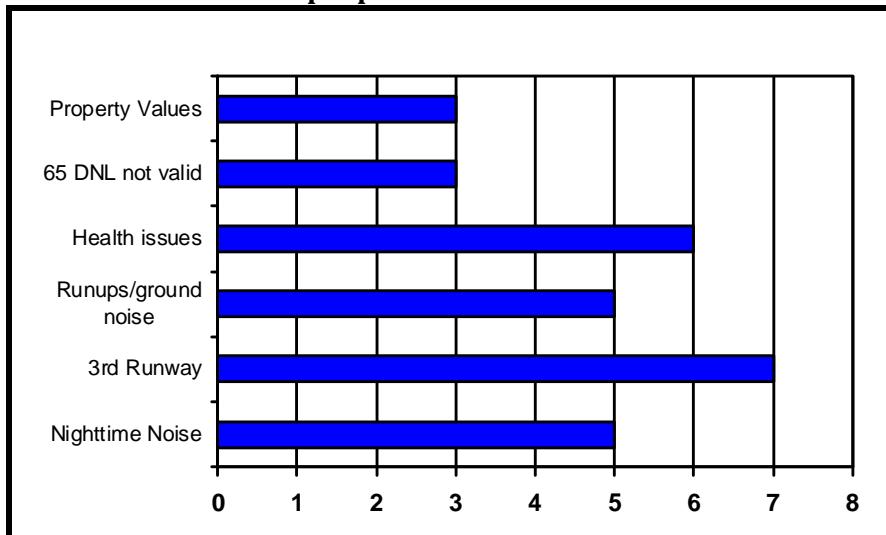
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After the small group discussion sessions all participants re-convened to listen to summaries of each group's discussion; the facilitators presented the summaries in the following areas:

- The issues people are most concerned about
- Ideas for reducing noise
- Single event versus multiple event noise

The highlights from each group were compiled and shown on a large projector screen, visible below. After all facilitators provided their summaries, Margaret Norton-Arnold facilitated a question and answer session with all participants for about a half hour. A transcript of this session is included in Appendix D of this report.

**These were the issues people were most concerned about:**

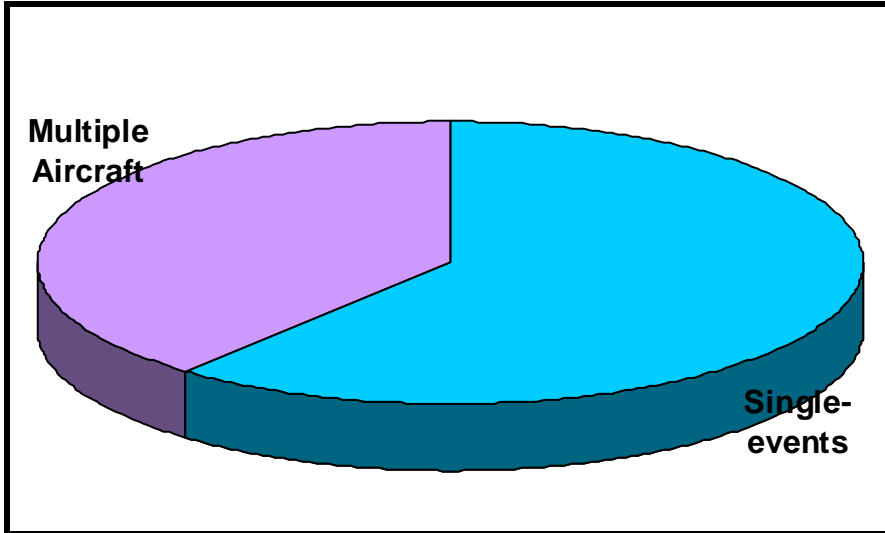


In summary, these were the participants' **ideas for reducing noise**:

- Deal with runups
- New ways to fund mitigation outside 65 DNL
- Better community planning effort
- Increase altitudes on arrival
- Curfews on flights
- Noise berms/vegetation - plant more trees
- Buyout or sales assistance
- Sound insulation
- Move airport
- Implement noise abatement procedures
- Insulation by homeowners
- Quieter aircraft at night
- Hush house

- Home sound reduction improvements the Port can make
- Share more information about new technology
- New monitors for 3rd runway
- Transparency about 3rd runway
- Flight scheduling during nighttime hours
- Better advertising of outreach events
- Place tax on nighttime passengers
- Look at taxiway exits
- Allowing data collected to be shared with Port/airlines
- Insulating to 55 DNL

**Ratio of comments regarding single event noise vs. multiple aircraft:**



## APPENDIX A - WORKSHOP AGENDA

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### SEATTLE-TACOMA INTERNATIONAL AIRPORT PART 150 NOISE COMPATIBILITY STUDY UPDATE

Public Workshop #1 – Scoping the Part 150

February 24, 2010

5:00-7:30 p.m.

Mt. Rainier High School Auditorium

--Meeting Agenda--

5:00 p.m. **Doors Open**

*--Sign in and review poster boards*

5:15 p.m. **Welcome – Let's Get Started!**

*--Margaret Norton-Arnold, Meeting Emcee*

**Thank You for Coming -- Introductions**

*--Stan Shepherd, Project Manager, Port of Seattle*

**An Introduction to the Part 150 Study Process and  
Expectations for this Study**

*--Rob Adams, Project Manager, Landrum and Brown*

- Overview of a Part 150 Study
- Expectations for the Seattle- Tacoma Part 150 Study
- Key elements of the Part 150 Scope
- Opportunities for your input into the Part 150 Study
- Your task tonight: Assist in scoping the Part 150

**Break into Discussion Groups**

*--Facilitator Led Discussions*

You can assist the Part 150 Team to address the issues that are most important to you. Please answer the following questions:

- What are your concerns about noise from operations at Sea-Tac? *Please be as specific as possible.*
- What information would be helpful for you to understand more about the noise you experience?
- Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?
- Are there areas where additional noise monitoring is needed and for what conditions?
- Do you have any suggestions for ways to reduce noise where you live?
- What is the best way to communicate with you about the Part 150 Study?

**Bringing us back together: What did we hear in the groups?**

*--Facilitators share what they heard in the small groups*

**7:00 p.m. Next Steps and Adjourn**  
*-- Margaret Norton-Arnold, Meeting Emcee*

# APPENDIX B – WORKSHOP PRESENTATION

SEA Part 150 Noise Compatibility Study

## Project Kick-Off Meeting

Public Workshop 1


Seattle Tacoma International Airport



SEA Part 150 Noise Compatibility Study

## Agenda

- Welcome and Introductions
- Overview of a Part 150 Study
- Expectations for this Part 150 Study
- Key Elements of the Part 150 Scope
- Opportunities for Your Input in the Study
- Breakout Session: Assist in Scoping the Study
- Summary of Breakout
- Q&A



SEA Part 150 Noise Compatibility Study

## Welcome and Introductions

- **Port of Seattle**
  - Owns and operates the airport
  - Sponsor of the Part 150 Study
  - Main contact: **Stan Shepherd**
- **Consultant Team**
  - Landrum & Brown will lead the Part 150 Study
    - 60 years of aviation planning
    - Experts in aircraft noise and land use planning
  - Margaret Horton-Arnold and Synergy Consultants will support L&B
  - Main contact: **Rob Adams**




SEA Part 150 Noise Compatibility Study

## Overview of a Part 150

- **Part 150 Studies are Planning Studies**
  - The focus of Part 150 is to address *noise* and *land use* incompatibilities
  - Identify noise and land use incompatibilities that exist today and in the future
  - Develop solutions that may reduce noise impacts
  - Educate the public about the airport and activity that occurs at the airport
- **Part 150 Studies must Follow FAA Guidelines**
  - FAA has established Part 150 guidelines
  - Airports must follow those guidelines to obtain funding for the study and implementation of the study's recommendations


**What most concerns you about aircraft noise at Sea-Tac Airport?**



SEA Part 150 Noise Compatibility Study

## Overview of a Part 150

- **Part 150 Studies can:**
  - Recommend operational changes that have community benefits without shifting noise, such as runway use procedures and use of navigation technology
  - Recommend constructing noise berms/wall or hush houses
  - Make the Port eligible for Federal grant money to implement recommendations
    - Funding is not guaranteed
    - Limited to areas within the 65 DNL noise contour
- **Part 150 Studies cannot:**
  - Recommend closing an airport or runway, or implementing mandatory restrictions on aircraft
  - Recommend levying fines for not following procedures
  - Limit access to the airport based on size, type, or noise created by aircraft




SEA Part 150 Noise Compatibility Study

## Overview of a Part 150

### Important Facts about Part 150 Studies

- Part 150 Studies are required to use the Day-Night Average Sound Level (DNL)
  - 24-Hour average
  - Penalty for nighttime (10 p.m.-6:59 a.m.) flights (x10)
- National standard for Federal agencies addressing transportation noise
- FAA uses 65 DNL to identify areas impacted by aircraft noise
- FAA will only implement procedures that show a meaningful benefit for areas within 65 DNL
- FAA will not fund mitigation outside 65 DNL




SEA Part 150 Noise Compatibility Study

### Overview of a Part 150

**Important Facts about Part 150 Studies**

- ❑ FAA has established land use compatibility guidelines for identifying aircraft noise impacts
- ❑ Below 65 DNL is compatible with all uses
- ❑ Noise-sensitive uses are considered non-compatible at or above 65 DNL
  - Residential
  - Schools
  - Churches
  - Hospitals
  - Nursing homes
  - Daycare facilities where licensed education occurs




SEA Part 150 Noise Compatibility Study

### Expectations for this Part 150

**Previous Part 150 Studies at Sea-Tac**

- ❑ Last study completed in 2002 (third for Sea-Tac)

Recommendation	Status
Change ground run-up regulations	<b>Increased fines up to \$8,000</b>
Develop a Fly Quiet program	<b>Completed</b>
Continue School Insulation program	<b>Underway</b>
Additional sound insulation 70 DNL	<b>Completed</b>
Mobile home park acquisition 70 DNL	<b>Completed</b>
Acquire residential parcels at the ends of 3rd runway	<b>Completed</b>
Prepare Hush House feasibility siting study	<b>Initial study completed</b>




SEA Part 150 Noise Compatibility Study

### Expectations for this Part 150

**Goals for this Part 150 Study**

- ❑ Look forward, not back
  - Focus the Part 150 on issues related to the 3<sup>rd</sup> runway
  - Look for opportunities that have not been thought of or that new technology will allow
  - Engage the public in a new way
- ❑ Conduct the Study in an open and engaging way
  - Communicate often with the public about the Study
  - Be up front and honest about what can and cannot be addressed in the Part 150 Study
  - Develop better ways to gather and communicate information about the Part 150 Study
- ❑ Complete the Part 150 Study in two years (2011)



SEA Part 150 Noise Compatibility Study

### Key Elements of the Part 150 Scope

- ❑ **Noise Exposure Maps (NEMs)**
- ❑ **Alternative Operating Procedures**
- ❑ **Public Involvement**



SEA Part 150 Noise Compatibility Study

### Key Elements of the Part 150 Scope

**Developing Noise Exposure Maps**

- ❑ Noise Exposure Maps are the official noise maps for the airport
- ❑ Required to prepare existing (2009/2010) and five-year future (2016)
- ❑ Required to show noise using DNL contours and 65 DNL as the threshold for impacts
  - We are able to use other ways of showing noise exposure (*supplemental metrics*)
  - The FAA will **not** change flight procedures or fund mitigation based on supplemental metrics

**What other ways of describing noise would be helpful to you?**

SEA Part 150 Noise Compatibility Study

### Key Elements of the Part 150 Scope

**Developing Noise Exposure Maps (NEMs)**

- ❑ Required to use the Integrated Noise Model
  - We will use the Port's 25 permanent noise monitoring terminals to help explain or understand conditions
  - Short-term measurements will be taken at a **few** additional locations
    - Purpose will be to gather specific information for locations not already covered by one of the 25 sites
  - The FAA will **not** allow measured data to be substituted for INM contours when developing maps
  - The FAA will **not** change flight procedures or fund mitigation based on measured data

**What areas should noise monitoring be conducted and for what conditions?**



SEA Part 150 Noise Compatibility Study

### Key Elements of the Part 150 Scope

#### Developing Noise Exposure Maps (NEMs)

- The Part 150 Study will collect and create a tremendous amount of information
  - Input data – activity statistics by aircraft types, engine types, time of day, peak hour, by runway, etc.
  - Output data – noise levels at specific locations, use of loudest aircraft, number of flights over certain areas, etc.

**What data would you find useful and be most interested in seeing?**

SEA Part 150 Noise Compatibility Study

### Key Elements of the Part 150 Scope

#### Developing Alternate Operating Procedures

- We will look at the following
  - Where aircraft fly when landing/taking off
  - Which runway aircraft use when landing/taking off
  - Procedures/technology pilots can use to more accurately fly the existing procedures
  - Procedures for ground activity such as taxiing, engine run-ups, etc.
  - Construction of noise berms/walls and hush houses

**What suggestions do you have for reducing noise in your community?**

SEA Part 150 Noise Compatibility Study

### Key Elements of the Part 150 Scope

#### Opportunities for Your Input into the Study

- The Part 150 Study will offer the following:
  - Six Public Workshops with breakout sessions and Public Hearing after the Draft Part 150
  - Periodic updates to the Highline Forum
  - Special Presentations – The Port and the consultant team will attend other community group meetings
  - Project Website – [www.airportsites.net/sea-part150](http://www.airportsites.net/sea-part150)
  - Air Mail newsletter will include Part 150 Study updates
  - Port's Constant Contact email service – *Part 150 topic*
  - Comments can be sent anytime during the study to: [SEAPart150-comments@landrum-brown.com](mailto:SEAPart150-comments@landrum-brown.com)

**What is the best way to communicate with you about the Part 150 Study?**

SEA Part 150 Noise Compatibility Study

### Breakout Sessions

#### Assist in Scoping the Study

- Provide input on the following:
  1. What are your specific concerns about aircraft noise at Sea-Tac Airport?
  2. What ways of describing noise would be most useful for you?
  3. What areas should noise monitoring be conducted and for what conditions?
  4. What types of data would you find most useful?
  5. What suggestions do you have for reducing noise in your community?
  6. What is the best way to communicate with you about the Part 150 Study?

SEA Part 150 Noise Compatibility Study

### Next Steps

- Begin data collection for activity at the airport
- Review all of the suggestions made at tonight's meeting for inclusion in the Part 150 Study
- Next Public Workshop
  - May/June 2010
  - Report back on how we will incorporate your suggestions into the Part 150 Study
  - Discuss the data collection process
  - Continue to seek your direct input

SEA Part 150 Noise Compatibility Study

### Questions/Answers

## APPENDIX C - SMALL GROUP DISCUSSION NOTES

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### **Group 1**

Facilitator: Chuck Lang, Landrum and Brown

#### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- People in group
  - 6 from Des Moines
  - 2 from Normandy Park
  - 2 from Blvd Park
  - 1 from Burien
- 3<sup>rd</sup> runway overused
- Usage not distributed evenly among all 3 runways
- Runups late night
- Runway usage change when one is not in operation
- Cargo 4:00AM-5:30AM – Seems heaviest at that time
- Normandy Park especially at 5:30AM
- Sunday morning 7:00 AM bad time in general
- Highline Schools insulated – rest of adjacent neighborhood?
- Fleet change
- Hush houses built and totally completed?
- Rattling and breakage – who could be held accountable?
- Old houses insulated differently – re-insulation?
- 2:00 AM runups most frequent and annoying in Burien
- Runup locations changed since third runway built?
- Des Moines 3<sup>rd</sup> runway usage at 4:00 AM
- Jet fuel smell in houses and offices
- Any monitoring of pollutants on an ongoing basis?
- New runway noise seems much different than what was there before
- Cargo fleet most disturbing to the group. Alaska, FedEx, foreign carriers
- Current sound insulation sufficient to deal with increased noise on 3<sup>rd</sup> runway?

#### **2) What information would be helpful for you to understand more about the noise you experience?**

- Meetings notice improved – community papers and citizen groups CASE
- Not enough notices
- Emails to all on mailing list with airport
- Better communication of new issues and major events
- Timing of meeting 6:00 or 6:30
- Better after work or on weekends
- Noise office call response time and definite callbacks

**3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Quality of life
- More reported single event

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Add more monitors in southwest
- Monitor locations – have they changed since 3<sup>rd</sup> runway built? – Port staffer answer was no.
- Flights over houses not over flown before
- Monitoring in parks
- New runway noise showing up in monitoring?

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Trees along ILS
- Specific corridors
- Increase nighttime fines?
- Paine Field underused
- Restrict runways and change operations to minimize noise using all 3 - type of aircraft, time of day, and which runway to use
- Maybe update/re-do insulation in those areas with more noise because of 3<sup>rd</sup> runway
- Fix “holes” in sound insulation program
- One side of the street insulated but not the other?
- Use center runway more – less taxi time

## **Group 2**

Facilitator: Christian Valdes, Landrum & Brown

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Criteria for Sound Insulation Program is old and should be reevaluated.
- There is no citizen participation on the Part 150 committee.
- Proper 3<sup>rd</sup> runway noise evaluation now that it's being fully utilized.
- Air Quality.
- Soot in backyard.
- New flight paths relative to 3<sup>rd</sup> runway were not evaluated.
- There is no baseline effect to sideline noise because there are no NMT's east or west of the airport.
- Terrain around the airport was not properly evaluated.
- Nighttime 3<sup>rd</sup> runway flights.
- Summer impact on areas south of the airport.
- Run-up and back blast vibration.
- The area of noise impact has increased due to the new runway.
- Concerned about the proper use of runways.
- Concerned that citizens have to make a choice between fresh air (windows open) and loud noise versus no fresh air (windows closed) and quiet.
- Concern that the Part 150 is stalling the sound insulation program.
- Concerned that there are no responses to web complaints.

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Put everything (all information) on the website
- Changes in mitigation
- Quick data upload – raw noise data

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Group had concerns for both types of noise, but single event noise was more annoying.

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Where new impact can be measured relative to the 3<sup>rd</sup> runway.
- On North Hill, an area southwest of the airport that is on terrain higher than the airport.

### **5) Do you have any suggestions for ways to reduce noise where you live?**

- Increase altitude of aircraft on approach and departures
- Move airport
- Better city planning – plant trees or noise buffering structures
- Sound walls
- Better Regional Transportation Planning to spread flight to other airports.
- No more airport expansion
- Expand Sound Insulation Area
- Increase user fees to fund noise mitigation programs

- Explore other methods to gain funding to mitigate noise outside the 65 DNL
- Airport curfew

### ***Group 3***

Facilitator: Jon M. Woodward, Landrum & Brown

#### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- All participants agreed that they were bothered by the loudness of both arrivals and departures, but that departures were louder and arrivals seemed to last longer in many cases.
- One participant expressed a concern about the discriminatory culture of noise as it applies throughout the community, meaning that there are distinctions between the mitigation given to different levels of noise effect.
- Several participants were concerned about the effects of aircraft noise on physical and emotional health in the communities affected.
- Several participants expressed concern about the effects of late night or early morning flights in disturbing their ability to sleep.
- One participant noted the difference between indoor noise in the winter and summer when windows were closed or open.
- Several participants expressed concern about vibration and low noise rumble (characterized as low-frequency noise) both near and at some distance from the airport.
- Participants west of the airport noted that since the construction of the new runway, there has been a huge increase in ground noise as aircraft taxi to and from the new pavement. This happens particularly as they taxi to the terminal after arrival when the engines are aimed to the west and aircraft are waiting to cross the active departure runway.
- One participant noted that she was concerned about particulate residue from aircraft operations and the effect of that on her health and property value.

#### **2) What information would be helpful for you to understand more about the noise you experience?**

Participants requested the following information to aid them in better understanding the study data and results:

- What longitudinal studies are available on the health effects of aircraft noise on individuals?
- What longitudinal studies are available on the health effects of aircraft emissions on individuals?
- When will mitigation be expanded to cover areas impacted by the third runway?
- One participant would like to see maps of flight tracks (actual track plots from radar) that show their location prior to the construction of the third runway and their location now.
- What are the noise level changes after/before construction of the third runway?
- Participants would like to see the effects of ground noise, runway noise, ramp noise, run-up noise, distinct from flight noise, but also included within the overall noise contours.
- Several participants expressed interest in seeing a low-frequency C-weighted set of noise contours.

**3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Participants agreed that generally, the individual noise events that occur at night, particularly by freight operators, and those of international carriers as being most disconcerting.
- They generally agreed that all noise at night was problematic.
- They got into a discussion about DNL vs. single event noise levels and asked for a graph or other visual material that would show the single event levels of a specific sample period and the DNL that resulted from those single events.

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Participants suggested additional measurements should be taken at several locations. These included:
  - Newly annexed areas of Burien or in unincorporated King County west of current Sites 11 and 13 to better capture effects of turns by smaller aircraft and the addition of new runway.
  - West of the airport in Burien and Normandy Park to capture the effects of the new runway and its associated substantial increase in ground noise and vibration (low-frequency noise).
  - South of the airport in Des Moines, west of current Site 20 on the shoreline to better capture arrivals to and departures from the new runway.
  - The south end of Mercer Island with provisions for low frequency noise measurement.
- Additionally, participants who resided near the airport requested that air quality and aircraft emissions data be measured.

**5) Do you have any suggestions for ways to reduce noise where you live?**

- One participant advocated the removal of all jet traffic from Sea-Tac, Boeing Field and Renton to Paine Field, restricting the three facilities to propeller aircraft only.
- One participant advocated that after the repairs and reconstruction of the older runways are completed, that the new, third runway be limited to arrivals only.
- One participant complained that she was not included in the mitigation area, while several of her near neighbors were. She believed that to be unfair and advocated for an expansion of the mitigation boundaries.
- Several participants, particularly those who lived near the airport on the north and those to the west, advocated the construction of a noise wall along the west airport boundary or the construction of a hush house for run-ups.
- One participant from the west of the airport advocated doing something to speed up the runway crossings from the new runway so that the area is not exposed to long periods of ground noise from taxiing aircraft moving to the terminal.

**6) What is the best way to communicate with you about the Part 150 Study?**

- Participants were requested to provide e-mail addresses on their comment sheets and evaluation forms if they wanted to be added to the e-mail list. No one suggested other forms of communication that had not been used in advertising the meeting.
- Participants were asked to include in their evaluations their thoughts about the effectiveness of the breakout group discussion process in comparison to previous group meetings and express a preference for the more effective style of participation.

- One participant suggested that there be a familiarization process for individuals who had not previously been exposed to the noise study process around Sea-Tac. Such program or process should include a historical account of the previous efforts such as the remedy program, how contours have changed, and what led to some homes in neighborhoods being mitigated and others not.

#### **Other Issues**

- After completion of the discussion of the six agenda items, a general discussion evolved leading to three questions that were not assignable to the items above.
- First, there was skepticism among all participants that the new runway is being used in a manner that is different from what was disclosed prior to its construction. The participants asked “What is the real plan for use of the third Runway?”
- Second, the issue of future growth of the airport arose with the question “Is there a fourth runway in the plans?”
- Third, one participant argued that in a recent land swap, the Port of Seattle had gained ownership of Boeing Field, and asked “What will happen at Boeing Field now that the Port owns it? Will the commuter airplanes be moved there?”

#### **Other Questions and Issues to Address**

- What’s the real plan for 16R / 34L?
- Is there a 4th Runway under consideration?



## **Group 4**

Facilitator: Vince Mestre, Landrum & Brown

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- There were several key points made by members of the group. These included statements to fact that aircraft are now overhead where they were not before, people cannot open their windows due to noise (and the commenter has sound insulation provided by the Port - near S 129<sup>th</sup> and 10<sup>th</sup> Ave S and is on a hill).
- Another commenter on Maury Island stated that noise was not a problem prior to April 1, 2009. But on that date all things changed. [Facilitator note that during the discussion Maury Island and Vashon Island were used interchangeably but refer to the participants' location on Maury Island). The stated concerns were number of flights, loud flights, night flights and for both arrivals and departures. In particular they pointed out (there were 2 people from this area and possibly were from the same home) that the south flow downwind leg is closer to Maury Island than it was prior to the April 1 date. South flow departures turn earlier now and overfly Maury Island instead of the area where monitor 25 is located.
- Another commenter near monitor 3 was very adamant that the Port should allow Alaska Airlines to fly the procedure they want to fly. The commenter was referring to an RNAV procedure over Elliott Bay.
- Several members of the group agreed that their quality of life had deteriorated.
- A commenter in Des Moines near monitor 20 commented that the 3<sup>rd</sup> runway results in flights now over their house (departures and arrivals).
- The group expressed concern that property values have decreased and commenters cited homes at 207<sup>th</sup> and 13<sup>th</sup> S and 129<sup>th</sup> and 10<sup>th</sup> Ave S.
- One commenter was concerned that in watching flights on the airports flight tracking websites that flights were being shown at 300 to 500 ft above their home but no noise event was shown for monitor 17. They expressed concern that monitor 17 was not working and should be checked out.
- Other commenters stated that their homes were insulated in 1992 and 1998 and that the insulation is now worthless. The group agreed that a major comment they want to make is that the insulation done in the past should be re-evaluated for effectiveness.
- Another commenter is under the new 3<sup>rd</sup> runway (northside) and wants to be bought out.
- Statements were made that the Puget Sound needs 2 more airports to relieve SeaTac.
- Commenter at 13<sup>th</sup> and 228<sup>th</sup> is impacted by arrivals to 3<sup>rd</sup> runway particularly in afternoon and early evening. It is one plane after another.
- The commenters on Maury Island stated that they can now hear takeoff and landing noise on the runway which they did not hear before.

### **2) What information would be helpful for you to understand more about the noise you experience?**

- All participants universally believe they are exposed to noise levels over 65 DNL.
- The discussion focused on number of operations and why was the 3<sup>rd</sup> runway used so much. Comments included the number of operations, the frequency of aircraft flights, the number of heavy aircraft, and flights 24 hours a day.

- There was a strong feeling that flight tracks have changed, in particular departures are flying further west and arrivals have moved east.
- Night cargo was cited as an issue - in particular the loud peak single event noise and the number of operations.
- Commenters noted that during center runway construction, departures on the new runway should climb and turn towards the center runway and get back to where they were.

*Note that at this point we jumped to question 5 because that is where the conversation was leading.*

### **5) Do you have any suggestions for ways to reduce noise where you live?**

- Buy me out. Implement a seller's assistance program. They emphasized fair market value. They wanted to highlight this solution.
- The group as a whole wants air-conditioning to be supplied as part of the remedy program (facilitator note: the context of this discussion appeared to be a desire to implement this retroactively for homes already insulated).
- For 3<sup>rd</sup> runway departures implement a climbing turn towards center runway.
- Make the arrival glideslope higher. For south flow arrivals implement overwater procedures over Elliott Bay.
- Make sure all noise monitors are working.
- Do some monitoring on Vashon Island (Maury)
- One commenter stated that a hush house is a waste of money (facilitator confirmed they are referring to a GRE).
- If a GRE is built, incorporate a way to capture fumes
  - Comments were made that they want to see the health effects of air pollution addressed
- The group emphasized the moving the south flow downwind tracks away from Vashon Island (to where they were).
- Accelerate implementation of RNP program
- Fine airlines for excessive noise
- Reduce property taxes
- When using 3<sup>rd</sup> runway, move flow to where old tracks were. The group emphasized this and stated this applies to arrivals and departures.
- Heavy aircraft should use eastern most runway.
- Put commuters on old runways, don't put them on new runway.
- One commenter wanted an online method to communicate to noise advisory staff. Further discussion led to the conclusion that they were looking for a noise blog where all could share comments.
- One commenter wanted to favor north flow during calm winds or when winds were light enough to permit operating with a tailwind. Upon discussion the group as a whole did not support this option and it was decided to cross it out.
- Fly over old buyout area.
- There was considerable discussion of runway use and the group recommended using the 2 easterly runways for approaches and departures should be on the 2 easterly runways. When it was pointed out that this is conflicting guidance, the group suggested that the 3<sup>rd</sup> runway be closed at night (10p.m. to 7a.m.)

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- One couple wanted monitoring done on Maury Island. Another wanted all monitors, and number 17 in particular, to be checked to determine if they are operating properly. The group focused on the monitoring in the 'wheels down' area (facilitator note: it appears they are referring to residential areas to the side of the runways). Another commenter suggested 128<sup>th</sup> and 12<sup>th</sup> and mentioned Cleveland High School and Concord Elementary.

**Question 2 & Question 3: Metrics and single versus multiple flights**

- The group was unanimous: 'everything but DNL.' This was in response to the facilitator list of alternative single event noise metrics and number of flights.
- Upon further discussion the group focused on 'dB by aircraft flight,' and frequency of flight and track location.

## ***Group 5***

Facilitator: Stan Eshelman, Landrum & Brown

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Some participants lived west of the airport. They expressed concern that noise had increased there because of the removal of trees which provided some buffer to the airport noise, including ground noise. They mentioned specifically that noise traveled down to them from the built up topography for the third runway.
- One resident living south of the airport expressed concern about overflights from the third runway. He indicated being misled by the Port to believe the runway would be used only in poor weather conditions.
- A participant south of the airport indicated he could not go to bed until 1:00 AM because of an extremely loud overflight from SEA which occurs regularly at that time.
- Residents northwest of the airport on 146<sup>th</sup> St. indicated noise was extremely loud in their area, and that they could not open windows. They indicated that most houses in their area had been acquired by the Port, but not theirs.
- One participant indicated being unhappy with the windows they received as part of the “Port Package”.
- Another participant indicated unhappiness with the responsiveness of the Port to questions and complaints. He indicated that he had called the Port about an issue and was promised he would be called back, but never was.
- Other concerns from the group included:
  - Noise being worse in the summer
  - Concern for children’s’ health, hearing loss, asthma
  - Smell of jet fuel, and dust
  - Run-up noise
  - Slowness of process to mitigate impacts

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Detailed information for activity at night
- Detailed information on run-up activity
- Detailed summaries of complaint data: number of calls/complaints, geographical information on where complaints come from.
- Information on the properties which have been purchased and mitigated in the past, including the justifications.
- Also information as soon as possible on the properties being purchased and mitigated for this Part 150.

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Initially, 2 participants indicated that single events were more concerning, and 2 indicated cumulative exposure was more concerning. After some discussion among the group, the general consensus was that both were concerning, and it was difficult to choose one instead of the other.

#### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

Three participants placed stickers on the map and indicated reasons for their proposed placement.

- One participant wanted a monitor west of the airport to account for sideline noise from the airport, which has increased because of the removal of trees.
- One participant wanted a monitor south of the airport to capture night time noise, especially that from the 3<sup>rd</sup> runway.
- One participant wanted a monitor near their residence northwest of the airport because of its close proximity to SEA, and its lack of representation by the permanent monitors.

#### **5) Do you have any suggestions for ways to reduce noise where you live?**

- Use of a hush house for run-ups.
- Use of the original 2 runways only at night, except during inclement weather
- Replacement of trees or construction of some other barrier to noise west of the airport.
- More acquisition of homes for noise reasons
- More soundproofing of homes
- Using steeper gradient takeoffs and landings.
- The idea of potential re-routing flights near the airport was discussed, but the prevailing opinion was that such an action would only lead to shifting noise over someone else.

#### **6) What is the best way to communicate with you about the Part 150 Study?**

The group indicated that they generally liked the approach of this public meeting as far as the breakout groups. Additionally there were 3 suggestions regarding communication as follows:

- More issues of *Airmail*. One every 2-3 months as needed.
- More FAA representation at public meeting. More opportunity for interaction between the FAA and the public.
- Opportunity for public participation in the advisory committees, or at least the ability to attend.

## **Group 6**

Facilitator: Mary Vigilante, Synergy Consultants

This group was attended by 10 individuals, all but two had been regular attendees at past Part 150 Study meetings. Two specific individuals wished to dominate the discussion and allowed little time for the new citizens to voice comments.

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Communities/citizens wish to know how will Sea-Tac expand in the future?
- A desire to have the Washington State Study of the future of Sea-Tac and air travel needs for the region included in this Part 150 Study. Specifically, what level of activity/fleet mix and how will Sea-Tac accommodate activity and the associated noise.
- Problems were the same as those considered in the 2002 study, as nothing has been done to address the problem.
- Concerns that promises were made in the past that the Port is not complying with – promises to not have a 2<sup>nd</sup> runway, promise on the 4 Post Plan, and promises concerning how the 3<sup>rd</sup> runway was to operate
- Concern in Federal Way (2 residents) – Since 3<sup>rd</sup> Runway, a lot more noise; daytime and nighttime; and aircraft are much lower on approach as well as departure
- Citizens are noticing that planes fly further to the west and lower – Daytime and nighttime.
- In Beverly Park – notice the commuter aircraft and helicopters
- Questioned why the 3<sup>rd</sup> runway was being used so frequently and why aircraft are turning sooner than called for in the 4 Post Plan.
- Concerns that citizens can smell jet fuel when there is an overflight

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Citizens questioned what specifically will be done to focus on the 3<sup>rd</sup> runway? Not clear how the new runway will be factored into the study.
- Runway use – specifically the 3<sup>rd</sup> runway use plans. Will the use continue? What will be done?
- Information on airline compliance with promised procedures, specifically the 4 Post Plan and 3<sup>rd</sup> runway, as well as noise abatement procedures
- Who is flying at night (which airline/purpose and aircraft types)? – both on landing and takeoff
- Lack of confidence in the INM. How will measurements help contours? Citizens noted that FAA will not allow changes in the noise curves, so they don't understand how sound level measurements actually are used to alter the contours.
- Will overlapping BFI and SEA operations be reflected in the contours and will mitigation be offered to areas of overlapping?
- Suggested that the nighttime weighting be increased
- Suggested that the DNL not be used
- Seems like flights are flying slower and climbing slower
- Information concerning the runway use – both landing and takeoffs, with the specific aircraft types using the runways during the daytime and nighttime

**3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Citizens noted that the frequency of overflight is a big issue
- Suggested working with the airlines to achieve procedures that achieve greater noise abatement
- Procedures to address both the arrivals and departures are needed

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- See map
- The citizens identified several locations, all with green dots

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Compliance with the 4 Post Plan
- Go as far north and south as the 4 Post Plan called for before turning
- Is FAA complying with the use of the 3<sup>rd</sup> runway?
- Why are they using the shortest runway for the most flights, with the biggest aircraft
- Ground noise near Angle Lake is a problem (suggest by someone from another group)
- Produce monies for the local cities
- Shorewood is experiencing much more noise than in the past
- Need to better understand what can be done and what can't be done and why
- Suggestions:
  - Get airport out of the area if nothing can be done
  - Shut down runway
  - What would conditions be at forecast activity levels (those of the Aviation Planning Council)
  - Use other airports (Paine Field) or develop a supplemental airport
  - Equitably distribute noise effects
  - Develop a noise wall, earth berm, or deflector on west side

Before the group disassembled to return to the workshop, a summary review was prepared for their concurrence. They were asked to identify the two key points for each question.

The following note those:

- Noise reduction should be achieved through noise abatement
- Look at why aircraft are further west
- Port has made past promises so why should they be believed
- Significant noise has not been addressed in the past
- Don't use averaging – use a range by time of day (high and low)
- Real data on runway use is needed – consider separate maps for each runway
- Flight frequency is the key concern – not limited to a specific time of day
- How data is being used must be explained
- Noise abatement through operational procedures. If that doesn't work:
  - Move airport
  - Minimize use of the 3<sup>rd</sup> runway
  - Community representatives should be used in the study to provide input. Consider a person from each area

## **Group 7**

Facilitator: Chris Hoffman, Norton-Arnold & Company

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Health, loss of sleep
- Affect on property values and prospects for selling my house
- Concerned that mitigation will take a long time – 2 years
- Money spent on studies could be spent on mitigation
- Don't want noise level boundaries to go right through homes and neighborhoods; logical geographic boundaries need to be considered
- Large, noisy planes late at night
- Can't get any peace at home
- Concerned that Port employees living in the area received preferential treatment in the past regarding insulation

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Would like to find out what the noise levels are at my house
- What is the current noise program?
- What are the exact locations of the noise monitors?
- How much will this study cost?
- How much area does each monitor cover?
- Why are there noise monitors in Medina?
- What percentage of planes that use Sea-Tac are newer, quieter planes?
- How fast are airlines converting to these models?
- How was 2010 noise model projected?

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Any planes that use the 3<sup>rd</sup> runway
- 3<sup>rd</sup> runway use is the biggest issue
- What is the current noise program?
- Why does 3<sup>rd</sup> runway need to be used between 8 p.m. and 8 a.m.?
- Individual take offs late at night of large freight planes at approximately 1:45, 2:30, and 4 a.m.
- Woken up every hour
- Operations at all hours of the day and night
- Would like to know how weather affects noise and how it will be accounted for in this study; it's noisier when it is foggy
- I wake up even when I wear earplugs
- Boeing Field traffic should not be diverted to Sea-Tac

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

- The group identified several gaps in monitoring coverage and placed dots on the map in areas where they thought new monitors should be placed. Most of the areas identified



were due north and due south of the 3<sup>rd</sup> runway. The group thought that the current monitors did not adequately cover the 3<sup>rd</sup> runway.

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Allow only quiet planes to fly between 10 p.m. and 6 a.m.
- Planes should fly over the sound and industrial areas to the maximum extent possible during landing and take offs.
- Big cargo plane should use Boeing Field, especially at night
- New windows and insulation
- Change flight patterns to go over unpopulated areas
- Allow homeowners to do their own mitigation and then get reimbursed by the Port later; this would save money
- Don't allow loud, older planes at night
- Put air conditioning in houses
- Port is responsible for the noise and knew the 3<sup>rd</sup> runway would create more noise; clearly noise mitigation should have been done before the 3<sup>rd</sup> runway was built.
- Boundaries have to acknowledge neighborhoods and be logical; they should not follow arbitrary lines.

**6) What is the best way to communicate with you about the Part 150 Study?**

- The group did not have any additional suggestions about ways to communicate with them.

## **Group 8**

Facilitator: Abby Barnes

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Vibrations from planes taking off
- Vibrations, extremely loud - disrupt wildlife – Lake Burien area
- Extremely loud – unpredictable
- Roaring at 3:00 – 3:30 am; for extended period of time (10 mins)
- There is no hush house
- Concerns of devalue of property
- Problem with 65 DNL – poor criteria
- NASA trying to establish new noise metric
- FAA not acceptable authority to govern study requirements
- According to FAA DNL = “widespread complaint or single threat of legal action”
- Increase noise with increase use of 3<sup>rd</sup> runway
- Thrust reverser too loud
- Simultaneously parallel landings increase noise
- Should implement modern technology
- Concerns this could lead to a class action lawsuit
- Hear noise now – before did not – Normandy Park

### **2) What information would be helpful for you to understand more about the noise you experience?**

- We know what we hear
- Would like to know physical addresses of monitoring locations
- Who is the ultimate decision maker?
- Would like to know more about noise reflection off Lake Burien, Puget Sound or any large water body

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Both
- When experiencing noise it doesn't matter
- Can't enjoy the outdoors
- Jet fuel smells can occur
- FedEx planes are the worse
- Concerns over long term health issues with exposure to fuel residues
- Alteration of wildlife (i.e. Eagles) in Seahurst and Lake Burien areas

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

- North side of Lake Burien noise reflection off water
- Should have mobile noise monitoring unit
- Need a monitoring location in Normandy Park and 3-Tree Point
- Need a monitoring location at Seahurst Park

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Home improvements to reduce noise
- Only use 3<sup>rd</sup> runway only when critical and during business hours only
- Adopt wide area augmentation system in order to reduce use of 3<sup>rd</sup> runway
- Tree/vegetation buffer area
- Build wall to reflect sound
- Allow more planes into surrounding airports
- Increase noise abatement
- Buy back property
- Hush house for run-ups
- Independent entity determine DNL

**6) What is the best way to communicate with you about the Part 150 Study?**

- Emails
- Timely update of website
- Publish in local/community newsletters
- B-Town blog

**Summary for end of workshop**

- 65 DNL Level – not good criteria/outdated
- Lack of modern technology increases use of 3<sup>rd</sup> runway
- All noise bothersome – neither single nor multiple worse than other
- Hush house
- Home noise insulation improvements

## **Group 9**

Facilitator: Shanon Kearney, Norton-Arnold & Company

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Time of engine run-ups
- Direction of run-ups as related to take off noise for residents west of airport in Burien and northwest of the airport
- Not knowing the difference between run-up noise and take off noise and therefore, not being able to offer technical solutions to address the problem
- Timing of takeoffs and landings between runways 2 & 3 for residents that live in between the two runways in SeaTac
- Landings on the 3<sup>rd</sup> runway are a problem for:
  - Those living west of it in Burien
  - Those living south and southwest of it; especially residents of North Hill in Burien
  - Sounds echo off hills
- Break up of TV images because of noise or satellite interference?
- Concern about environmental pollutants: since seeing black soot like material on patio furniture
- Insulation used in last Port package is no longer functional now that 3<sup>rd</sup> runway is in use

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Need to better understand to types of noise we are hearing
  - Planes from Sea-Tac or from Boeing Field
  - Port should share the website address that explains about plane noises in real time
  - Helpful to have a webpage dedicated to clarifying Boeing Field noises versus Sea-Tac airplane sounds
  - Sounds echo off hills
- Provide an FAQ about what works for noise mitigation
- Share information about how noise monitoring locations are chosen and whether there is data sharing with Boeing Field/King County Airport

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- More concerned with exposure to multiple aircraft over time and the effects
  - Aircraft shakes drywall loose (resident lives between the runways 2 & 3 in SeaTac)

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Need a baseline for monitoring that covers a predictable north – south axis and an east – west axis
- Right now the distribution of monitoring stations looks random
- Want to know if landforms were taken into consideration when choosing monitoring stations
- Consider ‘pockets’ and valleys not just street alignments

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Landscaped berms to mitigate the sound of engine run-ups
- Improved insulation since last Port package
- Stop using the 3<sup>rd</sup> runway or use it only for emergencies as originally promised
- Use the 3<sup>rd</sup> runway only during working hours
- Build a hush house
- Create a space that simulates artificial wind to regulate and buffer the sound of aircraft engines
- Better Port packages
- Allow past Port package recipients to be eligible for a new Port package
- Use any new noise abatement strategies
- Use newer quieter planes at Sea-Tac

## **Group 10**

Facilitator: Lisa Fitzhugh

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Sunday morning run-ups, those that happen at 7a.m. and earlier. They are extended at times and really disrupt a quiet weekend rest time.
- DNL contour is getting smaller now because there are fewer noisy aircraft, so we have concerns that even less will be possible for people who are still close but no longer fall within that contour.
- Nighttime (12-2a.m.) run-ups have increased in the last year. They can last 5-10 minutes, be very disruptive, and seem to be a different kind of noise, more vibrational. The quality of the noise also changes with the weather. When it is cloudy or the barometric pressure is low, the impact can be more intense.
- Early morning pre-flight warm-ups (run-ups) between 6 and 6:30, quality of noise is difference and much more physically disturbing. Reverberates in the heart area. Acts as unexpected alarm several times a week.
- 7-10p.m. usually has loud physical vibrations in the house, likening it to being at a rock concert where it shakes inside your body. Has impacts to your core.
- Late afternoon/early evening will often have loud interruptions when outside, have to go inside immediately to continue conversations, have any interactions. Can be intermittent.
- The 3<sup>rd</sup> runway has caused much more new and frequent disruptions. There is not nearly enough information about what the schedule will be with its use, when there will be heavier traffic times.
- Concerns about the physical pollution, the dust that accumulates on cars and decks, windows that seems to come from the jet fuel particulate. What is it and is it dangerous for our health?
- Concerns about the heavy flight pattern on North Flow days. During the a.m. and p.m. commuter hours. Flights can come every 2 minutes, outside of that it is usually every 6 minutes. Flights are also cutting corners on these arrivals, and changes the quality and impact of the noise.
- Flights outside of curfew hours, between 5 and 7a.m. are very problematic because of the sleep disruption.
- At higher elevations around the airport, the noise can be even more intense. Especially on low pressure days. With low barometric pressure, the vibrational impact is much more intense.
- Why are they insulating only half a house? With the 3<sup>rd</sup> runway there needs to be more complete insulation projects supported. Several examples were cited of this half-and-half insulation.
- 3<sup>rd</sup> runway is causing planes to arrive at below tree levels, and the vortex caused by the planes is topping and bending the trees under the incoming planes.

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Will there be a more consistent schedule with the 3<sup>rd</sup> runway?

- With the 3<sup>rd</sup> runway, will the airport be increasing its capacity overall and by how much? What's the plan?
- Will the 3<sup>rd</sup> runway cause changes to airport procedures to take advantage of the new capacity?
- What is the protocol for run-ups and who is accountable for monitoring them and when/how they happen? Can these protocols be changed and made more restrictive?
- Can the penalties for "out of curfew" run-ups be higher? Are they now high enough to stop them?
- Who allows these short-cuts in the flight plans?
- If you file a complaint, can there be callbacks so you know it hasn't gone into a black hole?
- What are the health effects of high decibel levels?
- Who is doing recording of the decibel levels? And is it enough of an outside/oversight role to be accountable?
- How do we align actual experiences of noise that happens intermittently with the average reporting that does not account for singular events?
- Can we measure the debris from the airplanes, or its jet fuel? Is it related to the noise issue?
- What will new technologies do to effect flight planning, schedules, etc. and will they be reviewed as part of this study?
- Can we site additional monitors in other areas, especially those more directly impacted by the 3<sup>rd</sup> runway? Can we have portable monitors for documenting impacts at other sites?
- Does DNL take elevation into account given higher elevations will cause greater noise impacts?
- Is the Port interested in gathering data outside of the 65 DNL contour in order to address impacts that are essentially adjacent?
- Why is Sea-Tac's impact radius smaller than other airports? Seems that SeaTac attributes a much smaller radius of impact than other cities' airports.
- Why are planes dumping their fuel as they arrive? Is it fuel or other material? What are the environmental impacts? How often does this happen?
- Which airlines do these run-ups and why are they happening at 1am?

**3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Multiple aircraft exposure and singular event are equally impactful.

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Yes, there should be more monitors much closer to the airport site.
- There should be more monitors near the 3<sup>rd</sup> runway. Just west of it. Need representation of impacted areas on that western edge.

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Condemnation process for houses near airport should be fuller in scope.
- Build noise walls on western side above the 3<sup>rd</sup> runway wall.
- Use the 3<sup>rd</sup> runway the way they said they would at the beginning of the process.
- Offer a lifetime supply of earplugs
- Follow-existing flight plan procedures

- Raise fines for run-ups. Create more alternatives to fines to stop the practice.
- Increase information and transparency about all of it. Provide better access to noise monitoring information.
- Build a hush house for planes.
- Explore and use new technologies to reduce frequency of flight plan impacts.



## ***Group 11***

Facilitator: Kristin Anderson, Norton-Arnold & Company

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Flying debris is an issue, airplanes create a sort of wake in the air and tosses things around the yard, rips limbs from trees. This is a safety issue.
- Run ups at night (quiet hours) last as long as ½ hour.
- Property damage from jet wash.
- Permanent hearing damage.
- Lack of hush house for multi-billion dollar operations
- Asthma and lung related issues
- Property values
- Time of day operations occur (during core sleep hours)
- Vibrations
- Unable to use/enjoy yards
- Summertime is worse because of open windows
- Impacts to pets
- Model does not account for variations in temperatures and how that affects sound travel
- Pollution from planes physically lands on houses, cars, yards.
- Increase in brain cancer

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Port should be more upfront about actual 3<sup>rd</sup> runway operations
- Is Port committed to trying to mitigate noise?
- Was last DNL study based on real or projected noise?
- Is current DNL study base on real or projected noise?
- High temperatures and heavy loads of summertime operations increase noise (Does model/plan consider this?)

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Single nighttime event is horrific
- Depends on the type of airplane and its noise level

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Need noise monitor in Normandy Park
- Monitor for low cloud cover
- Winter run ups and take off noise is louder due to leaf loss on trees
- High temperatures and heavy loads of summertime operations increase noise (Does model/plan consider this?)
- Need a monitor between 12<sup>th</sup> and Sunset Park (128<sup>th</sup> & 136<sup>th</sup>)

### **5) Do you have any suggestions for ways to reduce noise where you live?**

- Hush house or deflectors for noise
- Orient run ups north/south not east/west

- Limit freight airlines to mid-daytime hours only (11a.m.-2p.m.)
- Add east/west runway
- No run ups during night time hours
- Move some of Sea-Tac operations to other airports
- Investigate quiet EPR {reduced power} departure profile
- Move our houses
- Set up Local Citizen Oversight Committee to work with Port Commissioners
- Port should use large lobby funds to change federal regulations about nighttime operations (limit those operations)
- Shut down the 3<sup>rd</sup> runway
- Plant patches of thick conifer trees along west and east edge of airport
- Build noise fence on eastern edge to replace removed trees
- Only use 3<sup>rd</sup> runway when absolutely necessary or in bad weather
- Continuous descent profile
- Move large airplane operations to other runways
- Nighttime pricing (fees for airlines) to encourage scheduling during daytime hours
- Actively encourage minimum reverse thrust on landings

**6) What is the best way to communicate with you about the Part 150 Study?**

- Website
- Specific mailers
- Brief emails with no attachments

**Miscellaneous comments**

- Would like to know more about 65 DNL
  - Basis for its calculation
  - Period it is averaged over
  - Any consideration of peak values
- Would be interested in seeing data from noise monitors (raw or in report form)

## ***Group 12***

Facilitator: Sarah Brace, Norton-Arnold & Company

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

Key issues

1. Quiet hours are not in effect.
2. Citizen trust in the Port of Seattle is lost.

Notes

- Engine run-up noise.
- The SeaTac traffic noise led to a neighbor moving away because she couldn't continue her profession of piano lessons at her home – too loud
- Property values have declined
- 4 Post Plan not operating properly
- The existing contours don't match up with reality on the ground.
- Consensus that the Port lied to citizens. Promises were not met:
  - Enforced quiet hours
  - Opportunities for citizen input in the 3<sup>rd</sup> runway plan
  - Citizen monitoring data is not welcomed or used
  - Citizen representation on the advisory committee is not happening
- Runway usage not actually accurate to predictions – much more activity.
- Late hours – large cargo flights at night.

### **2) What information would be helpful for you to understand more about the noise you experience?**

Key Issues

1. Citizens don't need more information -- they experience the noise all day/night. They don't need technical information to explain what they already know.

Notes

- To us, noise is noise – how does the Port define 'noise'?
- What does the "65" number mean? How is it generated?

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

Key Issues

1. Both individual and multiple flights are a noise problem.

Notes

- Both individual and multiple flights are noisy
- House shakes with individual aircraft
- Heavy cargo flights at night are low and loud
- Concentrated traffic periods are challenging – don't know when they'll happen. Depends on weather, day of the week, time of day.
- Just want to have the 10p.m.-6a.m. quiet hours enforced.

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

Key Issues

1. Need to ensure that citizen data is used in the study.
2. There's plenty of data out there – make it available to all citizens.

## Notes

- We don't know if there is enough monitoring – we aren't technical experts
- Citizen group (RCAA) has sampled areas and identified where monitoring is lacking.
- Individuals have collected data but been told it's not going to be used.
- Need to be provided with templates, forms, etc. so that citizen monitoring data can be used and will be accepted in the plan. Many other organizations use citizen science data.
- Make data available to all
- Some monitors are not operational – flaw in the data collection. Are these being checked?

## **5) Do you have any suggestions for ways to reduce noise where you live?**

### Key Issues

1. Use citizen data to help pinpoint high noise areas.
2. Engage the public throughout the process. Let them know how the information collected will be used. Citizens want to feel like they are part of the process and can affect some change.
3. Coordinate flights with other airports in the area so that numerous flights aren't going overhead at once.

### Notes

- Airport is already antiquated given regional growth in the area. Need to move the airport.
- Confine noise to specific times between (10p.m. and 6a.m.) and enforce quiet hours.
- Utilize concrete buffers, vegetation, berms to contain noise.
- Reassemble citizen group “4 Post Plan”
- Provide more outreach on noise mitigation options.
- Need a coordinated plan with other airports in the region (Boeing and Paine Field) to synchronized and manage flight noise.
- Why is there additional noise over White Center – lots of helicopters, high-flying smaller jets, etc. Not just SeaTac noise there.
- Port should be obligated to purchase properties that are adversely affected by SeaTac airport traffic.
- Need more publicity about the public meeting. Was not advertised broadly enough.
- Continuity between meetings would be helpful:
  - Later start time for public meetings
  - See results and outcomes at each meeting
  - Learn what the information will be used for
- Investigate technologies that would use only 2 runways at a time. Need to explore state-of-the-art technology.
- No new taxes to improve airport and SeaTac traffic.
- Need to better understand the impact the noise has on an airport that is created on top of infill and also happens to be in a seismic area. Will the noise exacerbate any failures of the fill during a seismic event?

## **Group 13**

Facilitator: Rob Adams, Landrum & Brown

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Jet fuel smell (204<sup>th</sup> & 10<sup>th</sup> Ave. S)
  - **Planes are too low (204<sup>th</sup> & 10<sup>th</sup> Ave. S)**
  - Can't open windows in the summer due to noise (140<sup>th</sup> & 9<sup>th</sup> Place S)
  - Windows and doors installed by Port are failing (140<sup>th</sup> & 9<sup>th</sup> Place S)
  - We want to open windows (140<sup>th</sup> & 9<sup>th</sup> Place S)
  - Fuel dumping that occurs over our houses (140<sup>th</sup> & 9<sup>th</sup> Place S)
  - Noise affects property values (140<sup>th</sup> & 9<sup>th</sup> Place S)
  - Neighbors across the street have sound insulation and we do not (8<sup>th</sup> Ave. S & 122<sup>nd</sup>)
  - General noise from the airport/aircraft (190<sup>th</sup> & 39<sup>th</sup>)
  - **Nighttime and early morning noise. General roar of the noise during these time periods (southwest of airport)**
  - North flow is unbearable (Burien)
    - Vibrations
    - Nighttime period
  - Construction on runways in summer was disruptive
- Bold represents the two most commonly held from this group**

### **2) What information would be helpful for you to understand more about the noise you experience?**

- Less use of 3<sup>rd</sup> runway
- Noise walls on airport/in Des Moines along 8<sup>th</sup> Avenue
- Quieter airplanes
- **Install air conditioning/ventilation system in older homes**
  - Update electrical system handle system
- Updating noise studies
- **Revisit boundaries for sound insulation**
- Move quicker to take down homes that have been purchased
- Raise altitude of aircraft when landing
- Reduce property taxes
- Buyout programs or sales assistance programs

### **3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- 9-3 multiple/overall noise

### **4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Takeoffs in north flow
- Capture Boeing Field operations as well
- Southwest of airport
- General – at sound insulated homes to see if noise still exists
  - During different operating conditions (north flow/south flow)

**5) Do you have any suggestions for ways to reduce noise where you live?**

- Actual decibel ratings of aircraft at different locations
- Information about fines that are or can be levied
- Effect of jet fuel on people, pets, environment near the airport
- Comparison of noise levels over time (1980, 1990, 2000, now)
- Information about quiet engine technology
- Clear understanding about how the 3<sup>rd</sup> runway would be used from previous studies versus how it is being used today
- Analysis of property values near the airport versus not near the airport
- Does vibration effect older foundations?

**6) What is the best way to communicate with you about the Part 150 Study?**

- Get Port staff to hold/participate directly with people
- Better advertising of meetings
  - Mailers to people in the sound insulation area
  - Constant Contact

## **Group 14**

Facilitator: Margaret Norton-Arnold, Norton-Arnold & Company

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Sleep deprivation is a real worry. I am awakened by planes early in the morning, and then it is very difficult to get back to sleep. The 5:15 a.m. take-offs are really difficult to cope with.
- I am concerned about the long-term health effects of the noise. A fire hose will do a fast and effective job of eroding a stone wall. A garden hose will be slower and less effective, but it will eventually erode that same wall. I feel like I am living with the garden hose eroding away my health.
- Specific addresses where noise impacts are the loudest: Southwest flights over White Center close to midnight; 12th Ave S & 124th; 9th Ave S & 122nd ; 1st Ave South & 178th – (are we hearing runups?); on the south end of Mercer Island we get a “bounce” reverberation off of the water; 12246 – 12th Ave South – right under 3rd runway; at 144th & 16th – there has been a definite increase in noise.
- There has been a huge shift in the noise from the east to the west ever since the 3<sup>rd</sup> runway opened up.
- I live close to the east runway, and the noise at my house has definitely gone down since the new runway opened.
- Some pilots land and they are so eager to get into the first taxiway and off of the runway to discharge their passengers that they slam on their breaks and that is really noisy. Why do they need to do that? They can use their breaks more gradually and then take their passengers over to drop them off.
- Sometimes the planes create a “vortex” like whistling wind. It rattles the plates in our house and makes the trees move.
- Usually everything happens at a constant dull roar of around 65-68 DNL, but the other night at 9:15 there was a very loud roar. This was unusual and disturbing.
- We get a double whammy where we live – a bounce back from the retaining wall. We have measured this up to 95 decibels.
- I lived through the Viet Nam war, and this is like living in a war zone again (impacts from the 3<sup>rd</sup> runway). Except this is worse because at least the Viet Nam war ended.
- I live close to the east runway, and the situation has improved for me. But some mornings I smell fuel. Are the airlines dumping fuel?

### **2) What information would be helpful for you to understand more about the noise you experience?**

- How are the noise models tested and calibrated? How do we know that we can trust that information?
- Is the 3<sup>rd</sup> runway operating at full capacity? It seems like the traffic counts are way down from where they were projected to be. What is the actual need for the third runway at this point?
- How will the Port manage future increase in flights? Is there a set limit of airline traffic that the Port will manage to? What is that? What are the plans for the future?
- What are the “rules” that airline pilots have to abide by? What happens when they don’t follow the rules.

- Really? A FedEx flight at 2 a.m. qualifies them for the Fly Quiet program? How can that be?
- What leverage does the Port of Seattle have over pilots, airlines, and the FAA?
- How will the Port ultimately value a reduction in noise? What are the cost benefits that are accrued?

**3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Both of these are bad – we can't say that one is worse than the other.

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- Noise monitors should be located at:
  - Beacon hill
  - Leschi
  - Columbia city
  - Shorewood (north Burien)
  - North of #3 – county line
  - Kenmore?
  - 145<sup>th</sup> Roosevelt
  - Pacific Highway 240<sup>th</sup> – 270<sup>th</sup>
  - Burien Towne Square (much more rumbling noise)
- Check out what is going on around Lake Burien. The water there seems to exacerbate the noise. There seem to be a lot of helicopters in that area.
- There should be a noise monitor in South Park – that is hit by all directions; Boeing Field and Sea-Tac.

**5) Do you have any suggestions for ways to reduce noise where you live?**

- What is the timeline to build the hush house? That was included in the last Part 150 – what happened to that recommendation?
- There should be noise absorbing walls at the north and south end of the third runway. And build them with baffles – not art!
- Could noise absorbing pavement be installed on the runways and taxiways?
- Build berms on the sides of the airport.
- Could there be a way to distribute noise absorptions techniques on many surfaces/buildings? Rather than concentrating all of the noise absorption in one area – spread it out to several smaller areas and structures. Install on existing buildings?
- Are we fully limited by the 65 DNL? Some areas are very close to that, and they deserve insulation also. Don't set arbitrary lines/standards.
- The Port needs to fully own its sound insulation program. Right now too much of the management is left up to the discretion of the contractors.
- Reward the airlines that reduce noise and penalize those that don't reduce noise.
- Charge a \$200 passenger fee per person for everyone departing Seattle between 11p.m. – 6a.m.
- Figure out ways to “share the pain” of the airport. Yes, it is needed by the region, but everyone should have to bear the burden of its operations, not just those who live closest to it.
- Do a better job of distributing flights between the east and west runways. Don't just shift everything over to the 3<sup>rd</sup> runway.



- Provide more of a feedback loop directly to the airlines. I have evidence, for example, of noise levels hitting 80-90 decibels inside a living room. If the president of Alaska Airlines knew about that wouldn't he be more inclined to try to fly quieter?
- The Port should be requiring airlines to use the quietest jet engine technology available – the new generation of airplane technology.
- Require airlines to follow the 4 Post Plan.
- Slice & dice noise by the source and the time of day, and customize noise remediation to fit these specific needs -- “here's what we can do” to solve this particular problem.
- Investigate sound remedies for individuals/homeowners. Is there Bose Technology available for inside of homes, for example, to help cut the noise?
- Remediate for noise from both Sea-Tac and Boeing field – direct and indirect impacts. Those are cumulative over time.

## **Group 15**

Facilitator: Victoria Evans, Port of Seattle

### **1) What are your concerns about noise from operations at Sea-Tac – please be as specific as possible.**

- Concerns about the scope of work:
  - Relies on bad data
  - Doesn't really address public concerns, views, and ideas
  - No community involvement committee either on the TRC committee or as a separate community/citizen committee.
  - It is too short in range, only going to 2016
  - It doesn't address single noise events
  - It only uses the DNL and not other non-DNL measures
  - It doesn't address health concerns
- Why are we doing this if the FAA isn't going to make any changes?
- Health concerns
  - Air
  - Soil
  - The impact of fuel on air and soil
  - Impact of sleep disruption
  - Damage to yard greenery – trees and bushes and other plants
- We keep hearing that noise is going down, decreasing, but really it is increasing
  - Changes in the terrain due to new construction and changes in our communities
  - Neighborhood construction of tall fences now funnel the noise to different areas and creating different noise impacts
  - Changes in noise due to the 1<sup>st</sup> runway reconstruction/extension
  - The north end noise barrier wall moves/bounces noise
- We want to know what it takes to change flight procedures.
  - Even if the airport and the community agree on procedure changes we still have to overcome the resistance of the FAA. We want to know how and what is required to successfully make those changes.
- There is concern over mixed data/inconsistent data
  - Request for a independent analysis “audit” of the noise data
- Why can't we (Sea-Tac) employ the same restrictions and remedy efforts as other airports do?
  - For example, night restrictions.
- Where does the money from penalties go? Can't that be used for additional mitigation?
- Concerns about the lack of compensation for the devaluation of our houses and properties due to aircraft noise. The formula does not offer fair compensation for our losses.
- Landslides – we are concerned that the additional vibrations from the aircraft create greater propensity for landslides.
- What happened to the 4 Post Plan?
- There was concern expressed over the FAA tower and language barriers in international flights. Cited was a past situation with a Russian Cargo plane that almost crashed. It was reported that part of the problem was the language barrier in the control tower between the pilots and the controllers. It was suggested that some focus needs to be placed on the issue of multicultural language barriers.

**2) What information would be helpful for you to understand more about the noise you experience?**

- How are we supposed to answer this when we aren't experts?
- The Port is not very proactive:
  - Toward helping us understand the complexity of the noise program, the relationship between the FAA and the Port, and the noise problem so we can articulate our questions in a way that get answered.
  - They aren't proactive in answering the questions we do ask. The time it takes from our asking to a response is too long.
- We would like to know the parameters and assumptions behind the noise models and noise remedies.
  - For example, the insulation assumptions
  - How to pick a contractor
- We want to know how the Port works with the FAA and Airlines to reduce noise.
- We want to know why Sea-Tac is exempt from doing the things other airports are doing in terms of restrictions and noise remedies.
- We want to know:
  - If the Port is profit driven, profit making
  - Why the landing fee can't be increased to cover more mitigation work

*They want to understand the business model*

**3) Are you more concerned about noise from individual aircraft or about exposure to multiple aircraft over time?**

- Single events:
  - The constant breaking sound when the planes are preparing to land. This is a sudden noise – it's a single event but it is also consistent.
  - When they abort the quiet approach. This is extremely loud and sudden. This is one of the important single events.
- Consistent Noise:
  - No explanation needed

**4) Are there areas where additional noise monitoring is needed and for what conditions?**

- The lack of Noise Monitors in our neighborhoods
- The desire for permanent monitors not temporary monitors.
- Locations/areas noted:
  - 18003 4<sup>th</sup> Ave S, Burien
  - 204 & 10<sup>th</sup>, Des Moines
  - Mar Vista School, 19800 Marine View Dr SW, Normandy Park

**5) Do you have any suggestions for ways to reduce noise where you live?**

- We want the Port to guarantee the windows and insulation. We want to know how the individual contractors are selected because they seem to go out of business shortly after doing the work.
- Remove or insulate with some kind of sound absorbing material tall fences that bounce noise or displace place noise. Consider insulating/applying sound absorbing conditioning to rooftops and driveways.
- Stop night flights. Add curfews and penalties.
- Hush house

- One of the noise problems is aircraft not following run-up procedures. This needs to stop or penalties applied.
- Plans coming in very low, too low on the south end of the third runway.
- When planes are near or at the legal weight limit they are extra noisy and it increases our concern about accidents. Either mandate changes in the capacity weight, or apply greater fees or penalties to those individual planes. The money needs to be directly applied to general public noise reduction or mitigation efforts.
- Either build a noise barrier that runs the length of the third runway and/or insulate with sound absorbing material.
- Stop using the safety area at the ends of the runway as part of the runway.

**6) What is the best way to communicate with you about the Part 150 Study?**

- Use more grassroots notices such as posting flyers or posters in grocery stores and at libraries. Not everyone uses the internet.
- Use the radio and TV like channel 28 of Des Moines.
- Use the Highline Times and other local newspapers.
- And also use the Port web-site and email.
- Use postcards to keep us informed.
- Communicate more on topics that will help us understand how to frame our questions and understand the problem.
- Respond to comments from the meetings on-line PRIOR to the final report. Be proactive in communicating with us.
- Add experts as part of the breakout sessions that we can engage with questions. One designated for each group.
- Insulate to the 55 DNL for consistent noise
- Insulate to the 60 DNL for single event noise

## APPENDIX D – WORKSHOP Q&A SESSION

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**Q1. Transparency and accountability: what group is taking accessible information and making the information available? What is happening with the sound/noise data collection? All information needs to be collected and made available.**

A. We are the firm that has been hired to collect the information from ports data as well as all other data collection. Our responsibility is to collect the data and ensure that it is analyzed for this process.

**Q2. Why a two year study? Spend half an hour in folks' homes and you'll see why this is an issue. Why wasn't there a mitigation plan in place before the runway was put in place? Needs haven't been addressed. What guarantees do we have that our needs will be addressed? What about previous studies?**

A. A combination of things explains why this process takes time. We will perform a lot of technical analysis (e.g. 5-year projections, models and other technical data collection) that will take time. Second, we've undertaken a large, public outreach effort as part of this study -- special presentations, briefing to commissions. This process takes time, valuable time. If we can ID something that can be implemented now, we won't wait until the end of the 150 Study to start – we'll try to move those forward sooner.

**Q3. Is there is a program in effect for educating pilots about noise abatement?**

A. A program is in place for pilots that informs them about flight traffic. A flight monitoring system is also in place tracking all flights. If a plane is outside a noise abatement corridor, the FAA will be contacted to find out why that airline was outside the noise abatement corridor. Airlines will be notified if they are flying outside the boundaries too often.

**Q4. Land use planners are the majority of the Technical Review Committee. Land use planners won't address noise abatement. How are you going to reconstitute your technical review committee so that they can effectively address our problems?**

A: The TRC includes airline representatives, pilots, FAA representatives, Port aviation divisions, planners, County and WA DOT staff and others. The group has the flexibility to bring in experts.

**Q5. One general comment: the greater Puget Sound area needs at least 2 more airports and it needs them now. 2<sup>nd</sup> comment: For immediate mediation to those in the "wheels down areas" – offer them air conditioning systems.**

A. No comment

**Q6. Is there something that can be done to monitor at our houses?**

A. The Part 150 study will be collecting additional noise measurements at a small number of locations and for areas or conditions where there is not one of the Port's 25 permanent sites. No program exists for house-by-house or site-specific areas.

**Q7. Where is all the funding coming from for all the testing, activities you are doing? Taxes? Private funding? Those funds could be used for central air conditioning for our homes.**

A. Vast majority of funding is coming through FAA via a grant process (~80% of the funding). For the airport to become more eligible for additional funding, need to go through these processes to secure the funding for things such as air conditioning.

**Q8. Most of us are here for the noise. We pay for insulating our homes NOW and have the program reimburse us after the 2-year study.**

A. No comment

**Q9. Clarification around a bullet in the powerpoint presentation: “the FAA will not change flight plans based on supplemental information”. What does this mean?**

A. For implementing a new procedure (runway use), you have to show benefits within the 65 DNL. The FAA will now allow us to change procedure.

[Follow up comment from public- “this is extremely concerning”.]

**Q10. Simultaneous parallel landings – how were these landings approved?**

A. Focus of this study is: what are the issues with the third runway?

**Q11. The 150 study is going to be an exercise in futility. 65 DNL contour line may shift so that it will fall within the 1998 line which may result in NO CHANGE . What must be done to change the 65 DNL number to reflect more current conditions?**

A. The FAA and Congress established the 150 Study process and set the 65 DNL parameter. Don't want to raise expectations that this study will end the noise. This is a mature program and an airport that is well established. Are there easy answers? No. We will look at opportunities that have not been looked at in the past such as new technologies. Also want to provide the information that you want – data, analysis, etc. Can't promise that it will lead to change.