StART FACILITATOR’S MEETING SUMMARY
February 10, 2020; 5:30 pm – 7:30 pm
Seattle-Tacoma International Conference Center, Room 4A Conference Room
17801 International Blvd. (Directions)

<table>
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<tr>
<th>Attende</th>
<th>Interest Represented</th>
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<tbody>
<tr>
<td>Eric Zimmerman</td>
<td>Normandy Park</td>
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<td>Robert Akhtar</td>
<td>SeaTac</td>
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<td>Tim Toerber</td>
<td>Port of Seattle</td>
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<td>Jennifer Kester</td>
<td>SeaTac</td>
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<td>Scott Ingham</td>
<td>Delta Air Lines</td>
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<td>Tom Fagerstrom</td>
<td>Port of Seattle</td>
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<td>Marco Milanese</td>
<td>Port of Seattle</td>
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<td>Stan Shepherd</td>
<td>Port of Seattle</td>
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<td>Justin Biassou</td>
<td>FAA</td>
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<td>Vince Mestre</td>
<td>L&amp;B</td>
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Additional Participants: Steve Alverson, ESA, (phone), Brad Nicholas (phone) Lance Lyttle, Port of Seattle
Facilitator: Phyllis Shulman, Civic Alchemy
Note Taker: Amanda Murphy, Amanda Gray Consulting

Meeting Objectives:
To provide an update on and discuss the Ground Noise Analysis. To review and discuss additional analysis completed as part of the Noise Abatement Departure Profiles Study. To review the Late Night Noise Limitation Program 4th Quarter Results. To provide an update on StART reengagement of cities.

Meeting Summary

Update on Ground Noise Analysis
Brad Nicholas, Consultant, HMMH

Nicholas provided an update on the initial steps for the analysis. The update included:
- The first phase of the study is data collection – to establish the facts, noise source and noise impacts. A year’s data was provided by the Port including a log of every operation, its time of day, type of aircraft, and runway used and a log of engine maintenance run-ups.
• In process of completing preliminary analysis with two points of focus: (1) tracking aircraft movement on the airfield; (2) and a survey of air carriers that includes identifying procedures in use when aircraft are on the ground and the activities and location of those activities. The survey is being reviewed and finalized with Port.

• Analyzing the stated policy and use of reverse thrust by airline and aircraft type.

• In process of developing a draft noise measurement protocol – where to do ground noise monitoring.

• Once protocol is complete will monitor noise, keep and analyze aircraft activity logs from consultant staff on the ground and identify noise sources and levels in a range of locations.

Nicholas mentioned that the timeline for completing the work is by the end of 2020. He expects to have preliminary findings in the summer. Once data collection is complete there will be opportunities for StART participants to discuss areas of concerns and possible remedies. Next steps include sharing the survey questions with StART Working Group members and discussing monitoring location criteria at the March StART Aviation Noise Working Group meeting.

Additional Analysis - Noise Abatement Departure Profiles (NADP) Study

Steve Alverson, Consultant, ESA

The Working Group and the Port requested additional analysis be completed as part of the Noise Abatement Departure Profiles Study. This additional analysis included evaluating the impacts of Close-In and Distant NADPs for a Boeing 777 as compared to a Boeing 737 aircraft. Alverson reviewed the details of the additional analysis and shared conclusions and recommendations that included:

• Boeing 777 aircraft appear to provide similar proportional benefits of noise reduction as the 737 utilizing a Distant NADP.

• Based on the B737 and B777 NADP analysis results, ESA recommends that the Port of Seattle request all aircraft operators implement the Distant NADP (or its ICAO equivalent) at SEA.

• The Port’s implementation process may benefit from direct meetings with the airlines.

• The Port should track and report on airline adoption and use of the Distant NADP.

• The Port should evaluate and report on the change in aircraft noise exposure levels over time due to the Distant NADP.

Working Group participants asked a number of questions. Based on these questions Alverson provided some additional information including:

• Most domestic airlines are already utilizing the Distant NADP. The Port is trying to get information to determine how many are currently using the Close-In NADP. The airport in Anchorage has reported a reduction in noise when more airlines began consistently using the NADPs.

• Finer grain analysis of whether there are any close in residential areas that could be negatively impacted needs to occur. There may be few to none that would see an increase in noise. Regardless, the analysis is needed before any final recommendation is made.

• What may be perceived as noise from reverse thrust in Normandy Park may be noise related to aircraft departures.

• Farther out communities will benefit from noise reduction associated with a Distant NADP.

• The Ground Noise Analysis may provide additional options for noise reduction for communities close to the airport.
Late-Night Noise Limitation Program 4th Quarter Results
Tom Fagerstrom and Tim Toerber, Port of Seattle

Fagerstrom and Toerber provided an update on the Late-Night Noise Limitation Program 4th quarter results and shared outcomes from their outreach to airlines about the program. Fagerstrom shared data showing the airlines that exceeded noise thresholds as well as those that operated during the late-night hours with no noise exceedances in the 4th quarter. At the top of the noise exceedance list was Eva Air, FedEx Express and China Airlines Cargo. The results are being shared with all of the airlines. Overall late night operations dropped when compared to the 3rd quarter, but this is mostly due to seasonal demand. Fagerstrom reviewed specific information about many of the airlines and reviewed responses from outreach to the airlines who had the most exceedances.

1. EVA Air:
   - Operates two Boeing 777 departures to Taipei per night
   - Meaningful dialogue with them has resulted in them agreeing to change one of the two late-night flights to a quieter Boeing 787 in May 2020
   - They shared that this presents many operational challenges to EVA including fewer seats, loss of cargo revenue, and lack of interchangeable crews, but that they wanted to be respectful of the communities
   - Continued outreach and communication between the Port and EVA Air will continue

Eric Zimmerman stated that Normandy Park will want to send a letter of appreciation. He encouraged other communities to do the same.

2. FedEx Express:
   - Typically operates the MD-11 during late night hours
   - Also operates the B777, 767, 757, A300 throughout the day
   - Communications between the Port and FedEx Express have been positive
   - Mid to long-term fleet plans include retiring the MD-11
   - Port will continue to communicate and encourage them to operate newer aircraft in Seattle early in their fleet plans

3. China Airlines Cargo:
   - Operates Boeing 747-400 during late night hours 3-4 times per week to Taipei
   - B747 is the only aircraft in the fleet, so it is not feasible to switch to a different aircraft
   - They discussed scheduling challenges, but remain open to continuation of communication

Fagerstrom shared details about communication with some of the other airlines including:
   - Air Transport International: positive interest in the data
   - Korean Air Cargo: information about the Program has reached high levels in the company
   - Alaska Airlines and Delta Air Lines: both wanted more information about their exceedances; good dialog
   - Cathy Pacific: interested in the data
   - Horizon: interested in the data
Update on StART Reengagement
Marco Milanese, Port of Seattle

Milanese provided an update on the status of reengagement with the three self-suspended cities. Mayors from the three cities met with Port representatives in December and then Lance Lyttle met with city representatives from all six cities in January. Discussions were productive and encouraging.

Future Meeting Date/Times:
Next Meeting: March 9, 2020, 5:30pm - 7:30pm, Seattle-Tacoma International Conference Center, Room 4A Conference Room