## StART FACILITATOR’S MEETING SUMMARY

**October 28, 2020**  
5:00 pm – 7:00 pm Video Conference

<table>
<thead>
<tr>
<th>Participant</th>
<th>Interest Represented</th>
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<tbody>
<tr>
<td>Eric Zimmerman</td>
<td>Normandy Park</td>
<td>X Scott Kennedy</td>
<td>Alaska Airlines</td>
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<tr>
<td>Mark Hoppen</td>
<td>Normandy Park</td>
<td>X Matt Shelby (Alt)</td>
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<td>Jennifer Ferrer-Santa Ines</td>
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<td>Carl Cole</td>
<td>SeaTac</td>
<td>X Scott Ingham (Alt)</td>
<td>Delta Air Lines</td>
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<td>Kyle Moore (Alt)</td>
<td>SeaTac</td>
<td>- Shan Hoel</td>
<td>Air Cargo</td>
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<td>Robert Akhtar</td>
<td>SeaTac</td>
<td>- Justin Biassou</td>
<td>FAA</td>
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<tr>
<td>Tejvir Basra</td>
<td>SeaTac</td>
<td>- Lance Lyttle</td>
<td>Port of Seattle</td>
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<td>Michael Matthias</td>
<td>Des Moines</td>
<td>X Arlyn Purcell</td>
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<td>Brandon Miles</td>
<td>Tukwila</td>
<td>X Marco Milanese</td>
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<td>Erica Post</td>
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<td>X Eric Schinfeld</td>
<td>Port of Seattle</td>
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<td>Tod Bookless</td>
<td>Tukwila</td>
<td>- Tom Fagerstrom</td>
<td>Port of Seattle</td>
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<td>Bill Vadino</td>
<td>Federal Way</td>
<td>X Stan Shepherd</td>
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<td>Dave Berger</td>
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<td>Chris Hall</td>
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<tr>
<td>Brian Wilson</td>
<td>Burien</td>
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**Additional Participants:** Vince Mestre, Consultant  
**Facilitator:** Phyllis Shulman, Civic Alchemy  
**Note Taker:** Amanda Murphy, Amanda Gray Consulting

**Meeting Objectives:**
To provide an update on agenda items at the StART Federal Policy Working Group and the Aviation Noise Working Group October meetings. To present on and discuss the Port’s aircraft noise monitoring program.

**Welcome**
Lyttle welcomed participants. The cities of Des Moines, Burien and Federal Way have reinstated their membership on StART. Lyttle, welcomed back the cities and emphasized his interest in working together on shared priorities. He emphasized that he believes that even though there may be differences of opinion, that good work can still be accomplished together.
Recap of Federal Policy Working Group
Eric Schinfeld, Federal Government Relations Manager

Schinfeld provided a briefing on the October meeting of the StART Federal Policy Working Group (FP Working Group). Schinfeld provided background on the shared agenda and the impacts of COVID-19 on the advocacy work. He stated that now is a good time to reenergize the work. The FP Working Group came to agreement on two items:

1. An updated federal policy advocacy plan that now includes four new policy priorities.
2. Organizing virtual meetings with Congressional representatives and FAA leadership to replace the trip to Washington DC that had been originally planned for last March.

Schinfeld asked each city to identify participants for the virtual meetings. He will follow up with coordination and the development of talking points. He acknowledged the congressional representatives who have kept these issues a continuing priority for Congress. Schinfeld stated that these issues are non-partisan, but that legislation can be stalled by overall lack of legislative progress in Congress these days. A StART member suggested that leadership at the US Department of Transportation be included in the meetings.

Recap of Aviation Noise Working Group
Marco Milanese, Community Engagement Manager, Port of Seattle

Milanese provided a recap of the October Aviation Noise Working Group (AN Working Group). The AN Working Group discussed the following items:

- The winners of the 2020 Fly Quiet Award.
- Reviewed the latest data on the Late-Night Noise Limitation Program 2020 3rd Quarter Results showing that though late-night operations have dropped, the highest percentage of late night exceedances are related to cargo carriers.
- Reviewed the latest data on the Runway Use Agreement noting that in September there were only five late-night landings on the 3rd runway during the whole month.
- A presentation on SEA air cargo to better understand and determine how best to work with freight operators to reduce aviation noise. The presentation focused on freight cargo data including identification of freight carriers, their flight schedules, and aircraft type.
- Discussed the interest in engaging with FAA on NextGen procedures, engaging with airlines to understand future fleet plans, especially late night operators.

Noise Comment Monthly Reports
Tom Fagerstrom, Airport Noise Programs Coordinator, Port of Seattle

Fagerstrom provided an overview of the Noise Comment Monthly Report for September. The report shows monthly totals and trends for noise comments and complaints by household, zip code, and city. The report shows the type of comment/complaint and the method in which it was received. The most
common complaint is “noise annoyance” and the most common method of reporting is through the third-party web application called Airnoise. Information is also shown through a heat map by zip code which shows where the intensity of complaints originate. In September, the most complaints registered were from Vashon. A suggestion was made to also report the data on number of complaints via flight paths. Monthly reports are posted on the [website](#).

### SEA Aircraft Noise Monitoring Program

**Vince Mestre, Consultant**  
**Stan Shepherd, Manager Airport Noise Programs, Port of Seattle**  
**Tom Fagerstrom, Airport Noise Programs Coordinator, Port of Seattle**

**Overview of Noise Monitoring Systems**  
Mestre discussed the history of noise monitoring systems, system design, equipment and components, best practices, and how the data can and cannot be used. Mestre identified technical considerations for site selection, samples of technical reports, and compared noise monitoring versus noise modeling. He discussed the importance of flight track analysis data. This data provides the location of aircraft to maximize flight tracking accuracy. Flight tracking systems identify location, flight, speed, and altitude of each aircraft. Mestre pointed out that as aircraft have gotten quieter, their noise levels can be closer to other ambient noise in the community. When ambient noise is high it is more difficult for noise monitors to differentiate aircraft noise. Due to the difficulty of separating ambient noise from aircraft noise, noise modeling provides the best estimate of aircraft noise. Mestre’s presentation can be found [here](#).

### SEA Permanent Noise Monitors

Shepherd and Fagerstrom’s presentation can be found [here](#).

Shepherd presented information on the SEA permanent monitoring system including the number of monitors, their location, and how the permanent noise monitors connect to the flight tracking system. He shared examples of what data the noise monitoring system collects and how that data is utilized. Highlights of the presentation include:

**Permanent Monitoring System**
- 24 permanent monitors located in close-in communities surrounding SEA, or in locations generally north and south of the runways near a departure or arrival flight path
- Aircraft noise event data is gathered and shared on a monthly basis via the Port’s Noise Programs website.

**Flight Tracking System**
- Record of all flights that occurred at SEA
- Same radar data feed the FAA uses
- Historic record of flight details, including the altitude, aircraft type, location, speed, and airline
- Flight tracks are correlated with likely noise events
- Non-correlated noise is identified as community noise
Noise Monitoring Data
- The purpose of SEA’s noise monitoring system is to identify aircraft overflights and correlate probable noise events. The metrics supplied by the Port are:
  - SEL – sound exposure level: metric represents all the acoustic energy in an individual noise event as if that event had occurred within a one second time period
  - LEQ – equivalent continuous sound level: measures the average acoustic energy over a period of time to take the cumulative effect of multiple noise events

Noise Monitor Data Utilization
- Providing aircraft noise event information to the public along with aircraft type, airline, flight number and time/date.
- Monitoring noise levels for the Fly Quiet and Late Night Noise Limitations programs. FAA does not use data from noise monitors as the basis for determining the sound insulation boundary area. FAA mandates that only noise modeling be used.
- Noise monitors do not provide as accurate depiction of annual DNL compared to modeling.
- Noise monitors are not used as the basis for flight path changes.

SEA Temporary Noise Monitors
Fagerstrom presented information on the Port’s new Temporary Noise Monitoring Program. He stated that SEA recently acquired two portable monitors. Fagerstrom reviewed the Program’s procedures including site selection criteria, deployment status, and data utilization. Highlights of the presentation include:

SEA’s Temporary Noise Monitoring Program Procedures
- Portable noise monitoring will be considered if requested through a local jurisdiction such as a city council or city administrator.
- A standardized report will be provided to the requesting jurisdiction consisting of the following information: SEL, LEQ, and the number and type of aircraft noise events correlated.

Site Selection Criteria
- Distance from permanent monitoring sites – preferably not within 2 miles
- Proximity to established flight paths and airfield noise
- Availability of electric power
- Site accessibility for Port and vendor staff
- Site security
- Acoustically feasible
- Consideration of neighborhood equity and diversity

Deployment Status – First Monitor
- Received requests for monitor placement from the cities of Burien, Federal Way, and Normandy Park.
- Using the placement criteria, Burien was selected for the first placement, but they deferred to a later date.
• Federal Way accepted placement at the Nautilus Elementary School for two months. The monitor was installed in October for preliminary testing.
• The temporary monitor will be located next in Normandy Park.

_Deployment Status – Second Monitor_
• Port Commission directed placement of monitor on Vashon Island for 12 months.
• Port staff currently are working on an access agreement.
• Monitor will be used for shorter terms for other municipalities once the 12 month period on Vashon ends.

Additional information based on questions and comments included:
• The Port does not have current plans to utilize emission monitors, but are continuing to utilize the Puget Sound Clear Air Agency air emissions data.
• Recommendation that the Port partner with the University of Washington on their air quality study.
• Port staff are currently considering a request to move the permanent noise monitor from Sacajawea Elementary School to Nautilus Elementary School.

_Public Comment_
Compiled public comments are included as Appendix A.

Next Meeting:
December 9, 2020- 5:00 pm – 7:00 pm
Location: video conference
Appendix A
Summary of Public Comments

Public Comment

Anne Kroeker (oral and written comments):

- Stated that she thought she had heard earlier at the meeting that the aircraft noise is not coming from NextGen, but she thought that it was due to NextGen. Commented that due to how the noise monitors work she is not sure that the noise monitors are a wise investment.
- Mentioned two reports. One is from the Euro parliament on the impact of noise on cities. Stated that the report stated that noise can lead to negative public health impacts as well as socio-economic impacts. The second report states that aviation noise may affect dementia risk over time.
- Requested that the work of StART include diversity and equity in its strategies and include diversity and equity when the Port decides the placement of temporary noise monitors.

The following are references to the studies:

Impact of aircraft noise pollution on residents of large cities:

Abstract:
This study, provided by the Policy Department for Citizens' Rights and Constitutional Affairs at the request of the Committee on Petitions, aims to provide a clear and simple overview to the non-expert reader, on the Impact of aircrafts noise pollution on residents of large cities, as well as to give recommendations addressed to the most relevant actors. Noise is one of the most important problems linked to aviation. It can lead to health issues, as well as to negative social and economic effects. Examples of health issues produced by aviation are sleep disturbance, community annoyance, cardiovascular disease, and mental health problems.

Community noise may affect dementia risk:
https://www.sciencedaily.com/releases/2020/10/201021085106.htm

Summary:
Results from a new study support emerging evidence suggesting that noise may influence individuals' risk of developing dementia later in life.
Bernadine Lund (Federal Way) (oral and written comments):

START meeting 10-28-2020, Public Comment, Bernadine Lund, resident of Federal Way
Hello, everyone,

I want to say thank you to the PoS Noise Monitoring staff the noise presentations and for agreeing to set up a Temporary Noise Monitor at Sacajawea Grade School here in Federal way. I look forward to being able to see and compare the data to Noise Monitor #22. I have one request for the reports – please do not use the word annoyance unless the DNL is below 45 (I find the use of the word very annoying). As reported in the 2018 WHO Noise Report, DNL levels above 45 are a health risk, and most of the residents do not agree with the FAA that the DBL has to be below 65 to just be annoying.

On a separate topic, I wanted to mention to the START members that the PoS is preparing its 2021-2025 budget and is planning to spend about $3.3 billion on capital investments. The Port is also considering a recommendation to increase the Port District tax levy by 3% for 2021, which would bring in about $78 million. This spending is proposed while the Port also estimates the it will take to 2025 to reach the 2019 (the pre-Covid) flight levels. See the summary table for number of flights for 2019 and for Jan-Sept for 2020 so you can see the drop in number of flights this year.

At the PoS Commissioners meeting yesterday I asked that they use 0.1% of the $33 billion (or $33 million) in 2021 to provide air purifiers to local homes and schools, including ongoing money for replacement air filters every 6 months. This cost falls well within the $78 million from one year of the tax levy. I also asked them to move forward on replacing or updating the Port sound mitigation packages that have failed and to provide new ones as requested. The local residents should not have to wait while the Port has the tax levy money to provide this work.

I asked the Port to take this step to protect the health of local residents. It is very important to me to keep the health of the local residents from deteriorating due to aircraft emissions and noise, and more important than improving the experience of travelers going through the airport. I hope that it is more important to you too.
### Noise Monitor Sites

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<th>Site</th>
<th>Number of Flights Measured by PS6 Noise Monitors Jan-Dec 2019</th>
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<td>2019</td>
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<td>C Island School, Seattle</td>
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<tr>
<td>Maple Leaf Reservoir, Seattle</td>
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<td>Mountlake Terrace, Seattle</td>
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<td>Mountlake Terrace, Seattle</td>
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<tr>
<td>Stony Point St, Seattle</td>
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1. Count of SEL measures used to estimate count of flights; there may be small percentage (5%) of the counts that are due to noise other than aircraft.
2. Location of noise monitors in relation to airport. See Noise Monitor Locations map.
### Number of Flights Measured by PoS Noise Monitors
#### 2020 Jan-Sept

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<tr>
<th>Noise Monitors</th>
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<th>Fed</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
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<th>Dec</th>
<th>2020 Total</th>
<th>2020 Ave Flights/ Month</th>
<th>2020 Ave Flights/ Day</th>
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<td>108</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin Lakes Eley, 42 Pl SE, FW #25</td>
<td>374</td>
<td>356</td>
<td>236</td>
<td>67</td>
<td>83</td>
<td>188</td>
<td>115</td>
<td>103</td>
<td>95</td>
<td>1,617</td>
<td>180</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodmont Eley, 16 Ave S, Des M #28</td>
<td>13,862</td>
<td>13,375</td>
<td>11,157</td>
<td>3,765</td>
<td>4,231</td>
<td>6,331</td>
<td>8,157</td>
<td>9,836</td>
<td>9,026</td>
<td>79,740</td>
<td>8,860</td>
<td>295</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Comments
1. Count of SEL measures used to estimate count of flights.
2. See Noise Monitor Map for location of noise monitors.

**Data Notes** - see outlined boxes in table
May - Aug: No data for Monitor #9 from May 1 - Aug 7, 98 continuous days; data for Aug represents 24 days. Summary data based on 5 months with data, Jan-April and Sept.
David Goebel (Vashon Fair Skies) (Oral and Written Comments):

- Commented that the algorithm measure of noise monitoring is important and is not shown in the data. Stated that it is not just the noise level but the number of these noise level events. For example, with noise monitor #12 – it registered 77 events; however, there were more than 500 events that didn’t meet the noise threshold. While each noise event was small, there was A LOT of them which adds up.

The following written testimony was submitted with additional detail:

Vashon Island Fair Skies
PO Box 1250
Vashon, WA 98070

http://www.vifs.org
info@vifs.org
(206)682-8638

Dedicated to restoring the pre-NextGen dispersed arrival paths and more optimized profile descents at Seattle/Tacoma International Airport that had been in place since the introduction of commercial aviation to the Puget Sound region, many decades ago.
Due to this distribution of arrival runways, in Southflow monitor #12 correlates many fewer overflight events than monitor #11. For example, in December 2019:

<table>
<thead>
<tr>
<th>Site</th>
<th>Runway (Southflow)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16L</td>
</tr>
<tr>
<td>SEA11</td>
<td>2344</td>
</tr>
<tr>
<td>SEA12</td>
<td>4750</td>
</tr>
</tbody>
</table>

The flight correlation data has a variety of anomalies, including not just missed overflights, but single overflight events registering multiple correlations, and no, not go arounds. In this latter case the spurious correlations are a few seconds apart and have much lower intensity, combined with being few in number, mean they don’t have a significant impact on the results, but do complicate the analysis process. In other cases, the wrong flight can be identified when there are parallel arrivals. These don’t make a net change in LEQ, but again complicate analysis when trying to account for every single arrival.

Picking a random day in December 2019 with a small number of anomalies, Thursday December 5th, an analysis of the aggregate impact of the overflight events intentionally excluded from monitor #12’s LEQ result was undertaken. This day also had zero 16C arrivals, which are always relatively small in number, but having it zero makes the analysis easier.

On Dec 5th monitor #12 had 77 correlations (74 16L and 3 16R). In addition to the three 16R arrivals that were correlated **there were 532 16R arrivals which were intentionally excluded**. Each of these excluded 16R arrivals had much lower intensity than the 16L ones as measured by monitor #12. In order to approximate the noise level that each of these excluded 16R arrivals would have been on monitor #12, I used the 33 arrivals on December 5th that were correlated by both monitors 11 & 12 to judge what the noise intensity likely would have been. In these joint 16R correlations, the SELs (Sound Exposure Level) on monitor #12 were approximately 9 dB lower than the same overflight measured by monitor #11.

This is an approximation as I have a day job. A rigorous analysis would use a method called “Floating Threshold” to investigate every overflight event individually using the raw Time History data from the noise monitor. I would contend the approximation of using these 74 joint 16R correlations as a Rosetta Stone of sorts is sufficiently accurate.

**Taking into account these 532 excluded 16R arrivals on Dec 5th, the LEQ for monitor #12 on that day goes from ~53.4 dB to ~56.7 dB, which is about a doubling of intensity**.

I do recognize that FAA regulation 14 CFR Appendix A to Part 150 - Noise Exposure Maps: Part C - Mathematical Descriptions, Sec. A150.205(d) regarding the integration envelope for the Sound Exposure Level says:

“The time interval should be sufficiently large that it encompasses all the significant sound of a designated event. The requisite integral may be approximated with sufficient accuracy by integrating LA(t) over the time interval during which LA(t) lies within 10 decibels of its maximum value, before and after the maximum occurs.”

So, you “should” include all significant events but “may” exclude those without a 10dB swing. Even using this standard, as shown by my earlier produced video, overflight events with > 10dB swings are still excluded. I didn’t study how many events were incorrectly excluded using the above “may” rule. It’s entirely possible that sticking with the “may” rule and performing a Floating Threshold analysis would have resulted in a very similar LEQ deficit. I would ask StART to please have the Port’s noise consultant, Vince Mestre, look at and comment on the specific numbers in this note, and not just generally comment on the nature of noise monitoring in the abstract.

Thank you,

David Goebel

President, Vashon Island Fair Skies

*The specific word “intensity” here is intentional and important as it has an explicit mathematical meaning.*
Councilmember JC Harris (Des Moines) (oral comments):

- Commented that in a prior meeting, there was discussion on the failure of some sound mitigation projects. Pointed out that these failures were for very specific homes which had been insulated in the first round of noise mitigation projects. These specific failures (about 170 homes) have specific problems that need to be addressed. Stated it is important to not characterize these homeowners as whiners or their mitigation projects as failures.

Ryan Crompton (Des Moines) (written comments):
I live under the flight path in Des Moines and while the current turndown in aviation has temporarily reduced the noise overhead I know it won’t last. That being said I would like the committee to continue to work with the FAA, airlines and the Port of Seattle to find ways to reduce the impact on me and my neighbors. From being involved with this effort in the past I still think that there is a lot that the FAA can do with regards to changing the glideslope and looking at moving the flight paths such that they spend more time over the water or highways (99 and I-15) instead of neighborhoods.

I just don’t want this effort to lose steam because of the coronavirus. Those of us who live under the flight path are still struggling and hoping that solutions can be found that take into account our health and safety.

Sincerely,

Ryan