



# AGENDA

## Burien Airport Committee - Study Session

Tuesday, March 16, 2021 – 6:00 p.m.

Zoom Webinar

Public Access Link: <https://bit.ly/3fcykmg>

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**NOTE:** In accordance with [Governor Inslee's Healthy Washington - Roadmap to Recovery \(from January 8, 2021\)](#), the City is temporarily prohibited from holding in-person meetings. However, in an effort to encourage our community to continue to view and participate in public meetings, we request that you visit our website for more information regarding [Virtual Meeting Access](#). Please see the link to the [Zoom Webinar Meeting](#) in the header of the Agenda.

### 1. CALL TO ORDER

### 2. APPROVE MINUTES

- a) **Minutes from the February 16, 2021 Burien Airport Committee meeting to be approved at next regular meeting.** 3 - 5  
[February 16, 2021 BAC Draft Minutes](#)

### 3. BUSINESS AGENDA

- a) **Update from Congressman Adam Smith's Office on Smith's letter to FAA regarding Airplane Noise Mitigation Program for homes.** 7  
[Letter-Federal Representatives Urge FAA to Implement Airplane Noise Mitigation Program](#)
- b) **Update on selection of Burien Airport Committee members and StART Community Representatives (City Manager Wilson)**
- c) **Update on StART meeting held on February 24, 2021. (City Manager Wilson)** 9 - 31  
[1. StART Meeting Agenda 02.24.2021](#)  
[2. Presentation on StART Operating Procedures 02.24.2021](#)  
[3. FAA Neighborhood Env Survey January 2021](#)  
[4. StART Federal Policy Working Group Meeting Summary 02.01.2021](#)  
[5. StART Aviation Noise Working Group Meeting Summary 02.08.2021](#)
- d) **Discuss future meeting with El Centro de la Raza and Beacon Hill on King County**

**Climate Change. (Chair Aragon)**

- e) **Future discussion on Preparation for the SAMP process.**
- f) **Other items?**

**4. PUBLIC COMMENT**

There are three ways to provide public comment: Email (preferred) Text, or Online. Public comment shall be limited to two minutes per speaker.

1. **Email (preferred):** You can provide a public comment in advance by sending an email to [AirportCommittee@burienwa.gov](mailto:AirportCommittee@burienwa.gov). The Staff Liaison will read your comment aloud during the meeting. Cutoff for emails will be at 4:45 p.m. on the day of the meeting.
2. **Text:** Send a text to [AirportCommittee@burienwa.gov](mailto:AirportCommittee@burienwa.gov) (simply enter the email address in the "To:" line of the text) and the Staff Liaison will read your comment aloud during the meeting. Cutoff for emails will be at 4:45 p.m. on the day of the meeting.
3. **Online (Zoom):** If you are unable to provide public comment via email or text, and would still like to provide public comment during the meeting, you will need to login to the Zoom meeting that begins at approximately 6:00 p.m.

**5. ADJOURNMENT**

The next Burien Airport Committee meeting is scheduled for Tuesday, April 20, 2021 at 6:00 p.m. via Zoom webinar.

**COMMITTEE MEMBERS**

**Councilmember Sofia Aragon (Chair); Mayor Jimmy Matta;**

**Councilmember Kevin Schilling**

**Community representatives (selection in process)**

**Ex-Officio Member: Brian J. Wilson, City Manager**

**Staff Liaison: Lori Fleming, Rental Housing Inspection Program Coordinator, Phone: 206-248-5518, e-mail: [Lorif@burienwa.gov](mailto:Lorif@burienwa.gov)**



**MINUTES - Draft**  
**Burien Airport Committee**  
Tuesday, February 16, 2021  
Zoom Webinar

**1. CALL TO ORDER**

The meeting was called to order at 6:04 p.m. by Councilmember Aragon. Members and guests introduced themselves and provided comments on Burien Airport Committee activities, such as reviewing the relationship with the Port of Seattle, concerns of air quality, noise, health impacts, and environmental justice.

Members Present:

Councilmember Sofia Aragon, Chair  
Mayor Jimmy Matta  
Councilmember Kevin Schilling  
Jeff Harbaugh  
Javier Tordable  
Brian Wilson, Ex-Officio Member  
Lori Fleming, Staff Liaison

Guests Present:

Dave Kaplan  
JC Harris

**2. APPROVE MINUTES**

The minutes for the December 15, 2020 Burien Airport Committee (BAC) meeting were approved.

**3. BUSINESS AGENDA**

**a) Review purpose of the Burien Airport Committee.**

Burien Resolution No. 405 was reviewed, which lists the purpose and composition of the Burien Airport Committee. I

**b) Discuss Burien Airport Committee Chair selection for 2021.**

The Burien Airport Committee is the only Council Committee of the city and the Chair must be one of the three Council members. Councilmember Sofia Aragon expressed interest and was selected to be the Chair for 2021.

Burien Airport Committee  
February 16, 2021

**d) Update on SeaTac Airport Stakeholder Advisory Round Table (StART).**

City Manager Wilson provided an update on the StART Operating Procedures, which includes several changes to address cities concerns. Some of the changes include establishing a reporting relationship with the Highline Forum in order to include elected officials; formation of a Steering Committee to review meeting agendas; and a new facilitator (Brian Scott).

There are two StART working groups: 1.) Noise Work Group and 2.) Federal Policy Work Group. Some accomplishments of these work groups include having EVA Air change to a quieter airplane for a middle of the night flight, and reducing the use of the third runway during the night. In January 2021, only two landings were made on the third runway during late night.

An update was provided on the 2021 StART Priorities, which includes community engagement, aviation noise, air quality/health impacts, future of aviation mobility, and federal policy. It was noted that air cargo flights have increased dramatically, and they are the main air carriers that exceeded late night operation thresholds in fourth quarter 2020.

The Port of Seattle has drafted a letter to the Federal Aviation Administration (FAA) to respond to comments to a Neighborhood Environmental Survey (NES). The letter provides input into the next steps that should be undertaken based on the survey's results. The six StART cities may sign onto the letter too.

ACTION: City Manager Wilson will provide a copy of the draft letter to the Burien Airport Committee.

**e) Update on federal airport related legislation.**

Federal airport policy updates were provided including ASCENT (Aviation Sustainability Center) efforts on sustainable aviation fuels and cleaner, quieter airplanes.

**c) Updates on Councilmember activities regarding the airport.**

Councilmember Aragon mentioned airport concerns by Beacon Hill, and provided an update on a King County International Airport Master Plan presentation which included environmental and health injustice, and climate concerns. Data showed higher numbers of asthma, pre-term birth rates, cardiovascular, and other health issues around the airport. It was mentioned that looking at strategies used by other airports is helpful and may be useful for the Burien Climate Action Plan.

ACTION: Chair Aragon will provide a copy of the presentation to the Committee.

A suggested future educational presentation for the Committee was on sustainable aviation fuels.

Burien Airport Committee  
February 16, 2021

**4. PUBLIC COMMENT**

JC Harris – He is writing a book on the history of the airport. He recommends that the Committee focus on protecting the community.

**f) Discuss recruitment of Burien Airport Committee members and selection of StART representatives.**

The recruitment for Burien Airport Committee members is underway and already have interested applicants. The selection process for the two StART community representatives is also underway and Committee members Javier Tordable and Jeff Harbaugh indicated they would be interested.

**g) Discuss changing Burien Airport Committee monthly meeting date.**

No change to the monthly meeting date of the third Tuesday of each month at 6:00 p.m.

**h) Other items?**

None

**5. ADJOURNMENT**

Meeting was adjourned at 7:06 p.m.

The next Burien Airport Committee meeting is scheduled for Tuesday, March 16, 2021 at 6:00 p.m. via a Zoom webinar.



**Congress of the United States**  
**Washington, DC 20515**

February 22, 2021

The Honorable Stephen Dickson  
Administrator  
Federal Aviation Administration  
Office of the Administrator  
800 Independence Avenue, SW  
Washington, DC 20591

Dear Administrator Dickson:

We write to urge you to swiftly implement the provision included in the Fiscal Year 2021 Departments of Transportation, and Housing and Urban Development, and Related Agencies Appropriations Bill Report (FY21 House Report) regarding the Federal Aviation Administration's (FAA) sound insulation program.

Residences across our districts received sound insulation and other mitigation in the earliest phases of the FAA's noise mitigation program in the 1980s and 1990s. At the time, materials used for sound insulation were of lower quality than what is used today. Additionally, the installation in the early phases of the program was sometimes done without proper ventilation or attention to other structural concerns, leading to cases of mold or structural damage in certain homes.

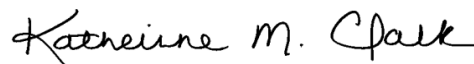
As you know, Airport Improvement Program (AIP) regulations bar airports from applying for federal funds for the same project more than one time, meaning that residences with failing sound insulation historically have not been entitled to repairs or replacements using AIP funds. The FY21 House Report importantly clarifies that AIP funds to repair or replace noise mitigation in homes with noise mitigation packages installed prior to 1993 is allowed. To ensure the airports can take advantage of this exemption, it is vital that the FAA quickly establish a process for airports to be reimbursed for repairing or replacing noise mitigation in homes that were installed prior to 1993.

We respectfully request the agency respond with the plan to implement the language from the FY21 House Report. We look forward to the agency's response.

Sincerely,



Adam Smith  
Member of Congress (WA-09)



Katherine Clark  
Member of Congress (MA-05)







# StART

## AGENDA

FEBRUARY 24, 2021; 5:00 PM – 7:00 PM  
VIA ZOOM VIDEOCONFERENCE

### Meeting Objectives:

Review StART’s revised operating procedures. Neighborhood Environmental Survey presentation by the FAA. Federal Policy Working Group and Aviation Noise Working Group update. *(Note: The facilitator will open the meeting at 4:45 pm for those who may want to test their technology and connection.)*

<u>Time</u>	<u>Item</u>	<u>Lead</u>	<u>Action</u>
5:00 pm	<b>Welcome</b> <ul style="list-style-type: none"> <li>○ Meeting Management</li> <li>○ Introductions</li> <li>○ Opening Comments</li> </ul>	Brian Scott, Facilitator, BDS All Lance Lyttle, StART Chair/SEA Managing Director	
5:10 pm	<b>StART’s Revised Operating Procedures</b>	Brian Scott, Facilitator, BDS	Information
5:20 pm	<b>Neighborhood Environmental Survey Results</b>	Donald Scata, Noise Division Manager, FAA/Sean Doyle, Senior Aviation Noise Policy & Research Specialist, FAA	Presentation, QA, Next Steps and Potential Actions
6:20 pm	<b>Federal Policy Working Group Update</b>	Eric Schinfeld, Federal Government Relations Senior Manager, Port of Seattle	Presentation, QA
6:30 pm	<b>Aviation Noise Working Group Update</b>	Tom Fagerstrom, Airport Noise Programs Coordinator	Presentation, QA
6:40 pm	<b>Public Comment</b>	Public	
6:55 pm	<b>Wrap Up + Next Steps</b>	Lance Lyttle, StART Chair/SEA Manager	
7:00 pm	<b>Adjourn</b>		

NEXT MEETING: APRIL 28, 2021- TENTATIVELY 5:00 PM - 7:00 PM VIA ZOOM VIDEOCONFERENCE





# Revised StART Operating Procedures

# StART Steering Committee

- A Steering Committee will be established to provide support, guidance, and strategic direction for StART. A Steering Committee will be established to provide support, guidance, and strategic direction for StART.
- Membership of the Steering Committee will include the Chair, primary non-elected city representatives, and airline representatives.
- Agenda topics
- Potential presenters
- External communications/promotions
- Annual Report
- Facilitator feedback

# Reporting Structure with Highline Forum

StART shall have a formal relationship structure with the Highline Forum.

- Regular updates
- Opportunity for input
- Consideration of StART recommendations
- Annual report

# Adherence to Operating Procedures

It is the responsibility of each member to adhere to the Operating Procedures including the Commitment from Members and Alternates Code of Conduct

Each city or body will be responsible for ensuring adherence from their appointed members and alternates and will work with the facilitator to resolve any conflicts or issues related to non-adherence by their members and alternates.

# Addressing SAMP

Membership on StART does not preclude StART members from participating fully in any airport-related environmental review processes at the state or federal level.

# Recording Meetings

Meetings will not be officially audio or video-recorded.

- If any participants in StART including members of the public wish to audio or video-record a meeting, they are required to notify the facilitator prior to beginning recording.
- Any recordings of StART meetings made by participants in StART, including members of the public, are not considered official or necessarily accurate recordings of the meeting.



# Membership

Any StART member can volunteer to serve on a working group.

Members shall be appointed for a two (2) year term.

Term begins on the date their appointing body notifies the facilitator and the chair of their intention to serve.

# Questions



**SEA**

Seattle-Tacoma  
International  
Airport

Operated by the  
Port of Seattle

FlySEA.org



# Federal Aviation Administration Neighborhood Environmental Survey



January 2021

The Federal Aviation Administration (FAA) undertook a multi-year research effort to quantify the impacts of aircraft noise exposure on communities around commercial service airports in the United States. The goal of the research was to provide an updated and nationally representative curve showing the relationship between aircraft noise exposure and community annoyance for the US. HMMH conducted the study for the FAA, with Westat, Inc. providing statistical support.

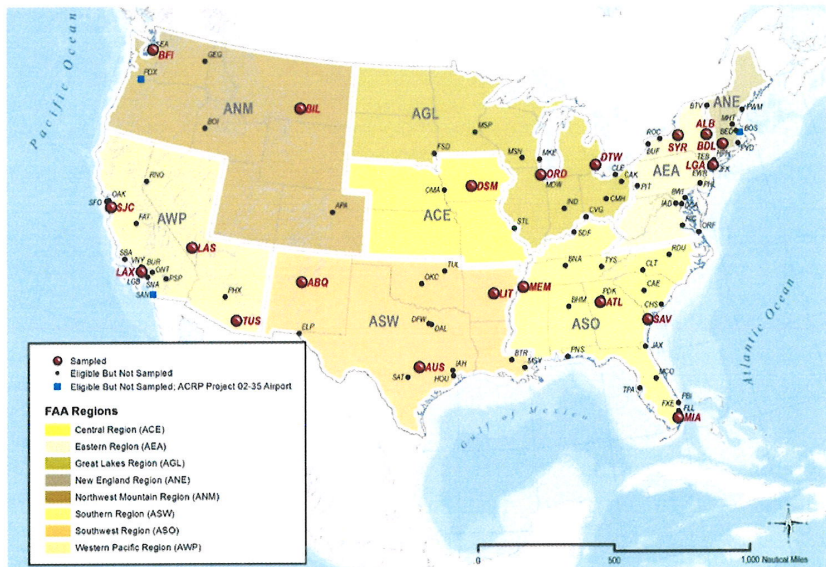
**The Neighborhood Environmental Survey (NES) Report is available here:**  
[www.faa.gov/regulations\\_policies/policy\\_guidance/noise/survey](http://www.faa.gov/regulations_policies/policy_guidance/noise/survey)

The survey included 10,000 people near 20 airports across the US — See Section 3 of NES Report for airport selection criteria.

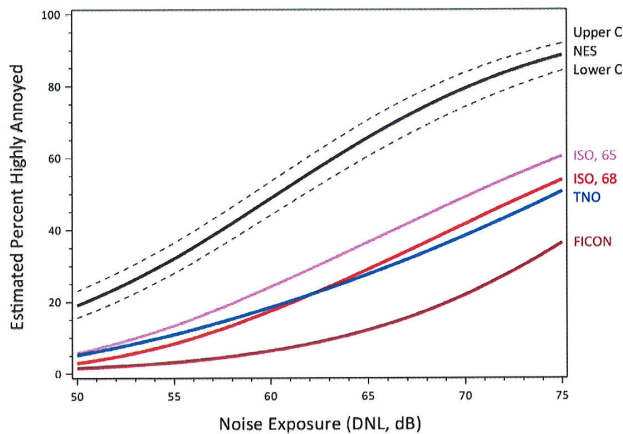
- The survey began in 2015 and was provided in English and Spanish — See Appendix A of NES Report
- The survey asked the respondent how much they were annoyed by aircraft noise and given the choices of: Not at all, Slightly, Moderately, Very, or Extremely
- If they answered “very” or “extremely”, they were classified as being “highly annoyed”
- A follow-up phone survey, which included 2,000 responses, may provide additional direction for further research

Day-Night Average Sound Level (DNL) was modeled with the FAA’s Integrated Noise Model (INM) — See Section 7 of NES Report.

- Flight track data from 2012-2013



Map of Airports Eligible for the Survey and Sampled Airports (Figure 3-1 of NES Report)



National Dose-Response Curve (NES), with 95 Percent Confidence Intervals (CI) on Annoyance for a given DNL. TNO, FICON and ISO Curves with Constants 65 and 68 are Shown Below the National Curve. (Figure 8-4 of NES report)

NES results show more people are “highly annoyed” at a given noise exposure level compared to historical data — See Section 8 of NES Report.

- ~66% of respondents were highly annoyed at 65 DNL
- ~20% of respondents were highly annoyed at 50 DNL

The full text of the NES report, including a detailed description of the methodology and findings, as well as additional background material to help inform readers, is available at: [www.faa.gov/go/aviationnoise](http://www.faa.gov/go/aviationnoise)

The final technical report is available at: <https://www.airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/>

**Federal Register Notice:** [federalregister.gov/d/2021-00564](http://federalregister.gov/d/2021-00564)

Comment on this notice using Docket Number FAA-2021-0037 at [www.regulations.gov](http://www.regulations.gov) by March 15, 2021.

Email questions to: [NoiseResearchFRN@faa.gov](mailto:NoiseResearchFRN@faa.gov).

[www.hmmh.com](http://www.hmmh.com)



2722

Federal Register / Vol. 86, No. 8 / Wednesday, January 13, 2021 / Notices

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration**

[Docket No. FAA-2020-1157]

**Agency Information Collection  
Activities: Requests for Comments;  
Clearance of a Renewed Approval of  
Information Collection: Commercial  
Space Transportation Licensing  
Regulations**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice and request for comments.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995, FAA invites public comments about our intention to request the Office of Management and Budget (OMB) approval to renew an information collection. The information will determine if applicant proposals for conducting commercial space launches can be accomplished according to regulations issued by the Office of the Associate Administrator for Commercial Space Transportation.

**DATES:** Written comments should be submitted by March 15, 2021.

**ADDRESSES:** Please send written comments:

*By Electronic Docket:*  
[www.regulations.gov](http://www.regulations.gov) (Enter docket number into search field).

*By mail:* Charles Huet, 800 Independence Avenue SW, Room 331, Washington, DC, 20591.

*By fax:* 202-267-5463.

**FOR FURTHER INFORMATION CONTACT:** Charles Huet by email at: [Charles.huet@faa.gov](mailto:Charles.huet@faa.gov); phone: 202-267-7427.

**SUPPLEMENTARY INFORMATION:**

*Public Comments Invited:* You are asked to comment on any aspect of this information collection, including (a) Whether the proposed collection of information is necessary for FAA's performance; (b) the accuracy of the estimated burden; (c) ways for FAA to enhance the quality, utility and clarity of the information collection; and (d) ways that the burden could be minimized without reducing the quality of the collected information. The agency will summarize and/or include your comments in the request for OMB's clearance of this information collection.

*OMB Control Number:* 2120-0608.

*Title:* Commercial Space Transportation Licensing Regulations.

*Form Numbers:* FAA Form 8800-1.

*Type of Review:* Renewal of an information collection.

*Background:* The Commercial Space Launch Act of 1984, 49 U.S.C. App.

§§ 2601-2623, as recodified at 49 U.S.C. Subtitle IX, Ch. 701—Commercial Space Launch Activities, 49 U.S.C. 70101-70119 (1994), requires certain data be provided in applying for a license to conduct commercial space launch activities. These data are required to demonstrate to the Federal Aviation Administration (FAA), Associate Administrator for Commercial Space Transportation (AST), that a license applicant's proposed activities meet applicable public safety, national security, and foreign policy interests of the United States.

*Respondents:* Approximately 17 space launch applicants renewing applications.

*Frequency:* Information is collected on occasion.

*Estimated Average Burden per Response:* 163 hours.

*Estimated Total Annual Burden:* 2,779 hours.

Issued in Washington, DC.

**Kelvin Coleman,**

*Deputy Associate Administrator, Commercial Space Transportation, Federal Aviation Administration.*

[FR Doc. 2021-00480 Filed 1-12-21; 8:45 am]

**BILLING CODE 4910-13-P**

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration**

[Docket No. FAA-2021-0037]

**Overview of FAA Aircraft Noise Policy  
and Research Efforts: Request for  
Input on Research Activities To Inform  
Aircraft Noise Policy**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Notice of research programs and request for comments.

**SUMMARY:** The FAA is releasing a summary to the public of the research programs it sponsors on civil aircraft noise that could potentially inform future aircraft noise policy. The FAA invites public comment on the scope and applicability of these research initiatives to address aircraft noise.

The FAA will not make any determinations based on the findings of these research programs for the FAA's noise policies, including any potential revised use of the Day-Night Average Sound Level (DNL) noise metric, until it has carefully considered public and other stakeholder input along with any additional research needed to improve the understanding of the effects of aircraft noise exposure on communities.

**DATES:** Comments on this notice must identify the docket number and be received on or before March 15, 2021.

**ADDRESSES:** Send comments identified by docket number FAA-2021-0037 using any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.

- *Mail:* Send comments to Docket Operations, M-30; U.S. Department of Transportation, 1200 New Jersey Avenue SE, Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.

- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- *Fax:* Fax comments to Docket Operations at (202) 493-2251.

*Privacy:* The FAA will post all comments it receives, without change, to <http://www.regulations.gov>, including any personal information the commenter provides. Using the search function of the docket website, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov>.

*Docket:* Background documents or comments received may be read at <http://www.regulations.gov> at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Mr. Donald Scata, Office of Environment and Energy (AEE-100), Federal Aviation Administration, 800 Independence Ave. SW, Washington, DC 20591. Telephone: (202) 267-0606. Email address: [NoiseResearchFRN@faa.gov](mailto:NoiseResearchFRN@faa.gov).

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### Background Information

Since the mid-1970s, the number of people living in areas exposed to significant levels of aircraft noise<sup>1</sup> in the United States has declined from roughly 7 million to just over 400,000 today. At the same time, the number of commercial enplanements has increased from approximately 200 million in 1975 to approximately 930 million in 2018. The single most influential factor in that decline was the phased transition to quieter aircraft, which effectively reduced the size of the areas around airports experiencing significant noise levels. That transition was the result of the development of new technology by aircraft and engine manufacturers; establishment of increasingly stringent noise standards for civil subsonic aircraft;<sup>2</sup> investments by U.S. airlines in newer, quieter aircraft; and requirements by the FAA and the United States Congress to phase out operations by older, noisier aircraft.

A second factor has been cooperative efforts by airports, airlines and other aircraft operators, State and local governments, and communities to reduce the number of people living in areas near airports exposed to significant levels of aircraft noise. Under the FAA's Airport Noise Compatibility Planning Program,<sup>3</sup> airports may voluntarily initiate a collaborative process to consider measures that reduce existing noncompatible land uses and prevent new noncompatible land uses in areas exposed to significant levels of aircraft noise. Since 1983, more

than 250 airports have used this process to consider changes to local land use planning and zoning, sound insulation, acquisition of homes and other noise-sensitive property, aircraft noise abatement routes and procedures, and other measures. Over \$6 billion in funding has been provided for airports to undertake noise compatibility programs and implement noise mitigation measures. The FAA encourages the process by providing financial and technical assistance to airport sponsors to develop Noise Exposure Maps and Noise Compatibility Programs, and implement eligible noise-related mitigation measures recommended in the program, depending upon the availability of funding.

In addition to noise compatibility planning, the FAA also issues grants to airport operators and units of local government to fund mitigation projects, most notably to sound-insulate homes, schools, and other noise-sensitive facilities. While sound insulation reduces indoor noise levels, it does not address concerns about noise interfering with the enjoyment of the outdoors. Moreover, there are limits to the effectiveness of sound insulation. In some areas with elevated noise levels, sound insulation may not sufficiently reduce interior noise levels to meet established interior noise standards.<sup>4</sup> Conversely, in areas where overall noise levels are lower, interior noise standards may already be met without additional sound insulation treatments.<sup>5</sup>

Today's civilian aircraft are quieter than at any time in the history of jet-powered flight. The FAA, aircraft manufacturers, and airlines continue to work toward further reducing aircraft noise at the source.<sup>6</sup> As an example, the noise produced by one Boeing 707–200 flight, typical in the 1970s, is equivalent in noise to 30 Boeing 737–800 flights that are typical today.<sup>7</sup> As a result, for many years there was a steady decline in the number of people exposed to significant noise in communities located near airports. In recent years, however, as aviation industry growth has led to an increase in operations in many areas, the number of people and the size of the

areas experiencing significant aircraft noise has started to show a gradual expansion. The introduction of Performance Based Navigation (PBN) procedures, as needed to safely and efficiently modernize the national air transportation system,<sup>8</sup> has also provided noise benefits for many by allowing for new and more efficient flight paths, but has in some places resulted in community concerns, particularly related to increased concentration of flights. In 2016, the FAA released an update to the FAA Community Involvement Manual to reaffirm the FAA's commitment to inform and involve the public, and to give meaningful consideration to community concerns and views as the FAA makes aviation decisions that affect community interests. The FAA has since developed and begun implementing a comprehensive and strategic approach to transform and enhance FAA community involvement practices, including working through airport community roundtables, to equitably discuss opportunities to shift or, when possible, reduce aircraft noise exposure.

### Overview of FAA Research on Aircraft Noise

Recognizing that aircraft noise remains a primary concern of many stakeholders, the FAA is actively working to understand, manage, and reduce the environmental impacts of global aviation through research, technological innovation, policy, and outreach to benefit the public.

With the vision of removing environmental constraints on aviation growth by achieving quieter, cleaner, and more efficient air transportation, the FAA has worked closely with a number of industry, academic, and governmental stakeholders to assemble a comprehensive portfolio of research activities (including leveraging research undertaken by others) aimed at guiding investments in scientific studies, analytical tools, and innovative technologies to better understand and manage aircraft noise. However, due to the complex nature of aircraft noise and the varied priorities and concerns of stakeholders, no single set of findings can completely guide decision making. A broad understanding of aircraft noise and any potential impacts, from many different perspectives, is therefore needed. Summaries of the FAA's key

<sup>1</sup> Under longstanding FAA policy, the threshold of significant aircraft noise exposure in residential areas is a Day-Night Average Sound Level of 65 decibels (dB). See the "Aviation Noise Abatement Policy," issued by the Secretary of Transportation and the FAA Administrator in 1976. This document is available on the FAA website at [https://www.faa.gov/regulations\\_policies/policy\\_guidance/envir\\_policy/](https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/).

<sup>2</sup> Consistent with International Civil Aviation Organization standards, FAA has set increasingly more stringent aircraft certification noise standards, such as the Stage 5 noise certification standard. 82 FR 46123 (October 4, 2017).

<sup>3</sup> This process is outlined under 49 U.S.C. 47501 et seq., as implemented by 14 CFR part 150.

<sup>4</sup> FAA Order 5100.38D, Appendix R.

<sup>5</sup> P.J. Wolfe et al., 2016 Costs and benefits of US aviation noise land-use policies Transportation Research Part D 44 (2016) 147–156, <http://dx.doi.org/10.1016/j.trd.2016.02.010>.

<sup>6</sup> See, for example, information on the FAA's "Continuous Lower Energy, Emissions, and Noise" (CLEEN) Program at: [https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/aircraft\\_technology/cleen/](https://www.faa.gov/about/office_org/headquarters_offices/apl/research/aircraft_technology/cleen/).

<sup>7</sup> Based on an average of approach and takeoff certificated noise levels as defined in 14 CFR part 36.

<sup>8</sup> See Section 213, "Acceleration of NextGen Technologies," of the FAA Modernization and Reform Act of 2012, Public Law 112–95, 213, 126 Stat. 11, 46–50 (2012), 49 U.S.C. 40101 note (PBN implementation required at key airports by statutory deadline).

research, tools, and technology programs designed to potentially inform aircraft noise policy are provided below.

#### (1) Effects of Aircraft Noise on Individuals and Communities

##### *Speech Interference and Children's Learning*

Much of our current understanding on speech interference due to noise was established by the Environmental Protection Agency (EPA) in the 1970s.<sup>9</sup> The findings from these early research assessments are still relevant for today's considerations on the impacts from aircraft noise. However, the FAA is also investigating whether there are related considerations warranting more detailed studies. One area in particular is the potential effects of aviation noise on reading comprehension and learning motivation in children. Initial research in this area has shown there are challenges in designing effective studies, and this continues to be an area of interest to better inform noise mitigation and abatement strategies for schools and other noise-sensitive facilities. While additional research in this area is still being explored, the FAA has invested more than \$440 million in sound insulation treatments at schools around the country<sup>10</sup> in order to mitigate any potential issues related to aircraft noise.

##### *Health and Human Impacts Research*

While community annoyance due to aircraft noise exposure provides a useful summary measure that captures public perceptions of noise, a full understanding of the impact of noise on communities requires a careful consideration of the potential physiological impacts as well. Knowledge of physiological impacts could also help the FAA develop targeted measures to address aircraft noise. Emerging research capabilities are providing new opportunities to examine specific impacts of noise on humans. When these are examined in a holistic manner with research on community annoyance, they could further inform aircraft noise policy considerations. The FAA is conducting research on the potential impacts of aircraft noise on cardiovascular health and sleep disturbance, as described below.

##### *Impacts to Cardiovascular Health*

In partnership with academic researchers that are being led by the Boston University School of Public

Health, the FAA is working to understand the relationship between aircraft noise exposure and cardiovascular health. The researchers are doing this by leveraging existing national longitudinal health cohorts wherein statistically large numbers of people provide data about their health on a periodic basis over the course of many years. These studies are typically used to understand the relative risk of different factors like diet on different health outcomes like heart disease. The Boston University team is expanding the list of factors to include aircraft noise exposure such that it can be placed in context with other factors that could increase one's risk of cardiovascular disease. The team is leveraging existing collaborations with well-recognized and respected health cohorts including the Nurses' Health Studies and the Health Professionals Follow-Up Study, as well as a complementary study at Boston University that is examining the Women's Health Initiative cohort through funding from the National Institutes of Health.

##### *Sleep Disturbance*

The FAA is working with a team led by the University of Pennsylvania School of Medicine to conduct a national sleep study that will quantify the impact of aircraft noise exposure on sleep. The study will collect nationally representative information on the probability of being awoken by aircraft noise exposure. The study will start with input being requested from approximately 25,000 respondents through a mail survey. These surveys will be used to determine the eligibility of respondents for a detailed field study that will involve roughly 400 volunteers. The volunteers in the detailed field study will use equipment provided by the research team to collect both noise and electrocardiography data in their homes while they sleep. The electrocardiography data combined with information on the level of aircraft noise exposure will advance our understanding of the physiological effects of aircraft noise on sleep.

##### *Economic Impacts*

In addition to the aforementioned community and physiological impacts, the FAA is also working with researchers at Massachusetts Institute of Technology (MIT) to conduct an empirical assessment of the economic impacts to businesses located underneath aircraft flight paths. This assessment will take into account the economic benefits from aviation activities, as well as potential environmental and health impacts that

might reduce economic productivity. The FAA is also in the developmental stage of a research project that would build on existing work done by MIT that has used housing value data to reveal the willingness of people to pay to avoid aircraft noise exposure. This research is intended to serve as a follow on to the Neighborhood Environmental Survey (described in the next section), to determine whether the findings of that survey on residents' sensitivity to aviation noise is also reflected in their "revealed preferences" when making housing location decisions.

##### *Neighborhood Environmental Survey*

To review and improve the agency's understanding of community response to aircraft noise, the FAA initiated the *Neighborhood Environmental Survey* (NES) to help inform ongoing research and policy priorities on aviation noise. Section 187 of the FAA Reauthorization Act of 2018<sup>11</sup> requires the Administrator of the FAA to "conclude the Administrator's ongoing review of the relationship between aircraft noise exposure and its effects on communities around airports . . . [and] submit to Congress a report containing the results of the review."

Due to the interest from Congress and other stakeholders in the findings of this research, an expanded summary is provided in this notice below. The full text of the NES report, including a detailed description of the methodology and findings, as well as additional background material to help inform readers, is available on the FAA's website at: [www.faa.gov/go/aviationnoise](http://www.faa.gov/go/aviationnoise).

##### *Overview of the Survey*

Working with statisticians and noise experts,<sup>12</sup> the FAA worked with other Federal agencies that have statutory, regulatory, or other policy interests in aviation noise, to conduct a nationwide survey to update the scientific evidence on the relationship between aircraft noise exposure and its annoyance effects on communities around airports, based on today's aircraft fleet and operations. The NES included a range of questions on a variety of environmental concerns, including aviation noise exposure.

The team of expert consultants, under direction from the FAA, surveyed residents living around representative U.S. airports, drawing upon well-established research methods in order to

<sup>11</sup> Public Law 115-254.

<sup>12</sup> The FAA contracted with Westat, a leading statistics firm, and HMMH, a leading noise consultancy, to conduct the survey.

<sup>9</sup> EPA, 1973, Public Health and Welfare Criteria For Noise, <https://nepis.epa.gov/>.

<sup>10</sup> Provided through Airport Improvement Program funding since 1994.

ensure scientific integrity and historical continuity with prior studies, while also employing advancements in techniques for noise modeling and social surveys. The NES consisted of over 10,000 mail responses from residents in communities around 20 statistically representative airports across the Nation, making it the single largest survey of this type undertaken at one time. In addition to the mail responses, the consultants also conducted a follow-up phone survey, which included over 2,000 responses to a series of more detailed questions. The FAA is now considering the full NES results, in conjunction with additional research findings as they become available, to determine how they may inform its noise policy considerations.

#### Overview of Community Response to Noise

Historically, two of the main types of information considered by the FAA and other Federal agencies in relating noise exposure to community response have been: (1) Case studies analyzing individual and group actions (*e.g.*, complaints or legal action) taken by residents of communities in response to noise; and (2) social surveys (such as the NES) that elicit information from community residents regarding their level of noise-induced annoyance. Annoyance is defined as a “summary measure of the general adverse reaction of people to noise that causes interference with speech, sleep, the desire for a tranquil environment, and the ability to use the telephone, radio, or television satisfactorily.”<sup>13</sup> The results of social surveys of noise-induced annoyance are typically plotted as “dose-response curves” on a graph showing the relationship between the level of DNL<sup>14</sup> cumulative noise exposure and the percentage of the population that is “highly annoyed.”

Current FAA noise policy is informed by a dose-response curve initially created in the 1970s known as the *Schultz Curve*.<sup>15</sup> This dose-response curve is generally accepted as a representation of noise impacts and has been revalidated by subsequent analyses

over the years.<sup>16</sup> The dose-response relationship it depicts has provided the best tool available to predict noise-induced annoyance for several decades. In 1992, the Federal Interagency Committee on Noise (FICON) reviewed the use of the *Schultz Curve*, and created an updated version of the curve using additional social survey data.<sup>17</sup> The updated dose response curve was found to agree within one to two percent of the original curve, leading FICON to conclude that “the updated *Schultz Curve* remains the best available source of empirical dosage-effect to predict community response to transportation noise.”<sup>18</sup> According to the 1992 FICON Report, the DNL-annoyance relationship depicted on the *Schultz Curve* “is an invaluable aid in assessing community response as it relates the response to increases in both sound intensity and frequency of occurrence.” Although the predicted annoyance, in terms of absolute levels, may vary among different communities, the *Schultz Curve* can reliably indicate changes in the level of annoyance for defined ranges of sound exposure for any given community.<sup>19</sup> While the validity of the dose-response methodology used to create the *Schultz Curve* remains well supported, its underlying social survey data, including the additional data used by FICON to update the curve, is now on average more than 40 years old and warrants an update. The NES was conducted to create a new nationally representative dose-response curve to understand how community response to aircraft noise may have changed.

The NES’s collection of a nationally representative dataset on community annoyance in response to aircraft noise provides a contemporary update to the *Schultz Curve*, including technical refinements to improve its reliability. As with the *Schultz Curve*, the NES describes community annoyance in

terms of the percentage of people who are “highly annoyed” and describes aircraft noise exposure in terms of the DNL noise metric. Based on the 1992 FICON Report, discussed previously, both the percentage of population highly annoyed and the DNL noise metric have continued to be recognized for this purpose including by FICON’s successor, the Federal Interagency Committee on Aviation Noise in its 2018 report.<sup>20</sup>

#### NES Results

Compared with the *Schultz Curve* representing transportation noise, the NES results show a substantially higher percentage of people highly annoyed over the entire range of aircraft noise levels (*i.e.*, from DNL 50 to 75 dB) at which the NES was conducted. This includes an increase in annoyance at lower noise levels. The NES results also show proportionally less change in annoyance from the lower noise levels to the higher noise levels.

Comparing the percent of population highly annoyed due to noise exposure between the updated *Schultz Curve* for transportation noise in the 1992 FICON Report and the NES:

- At a noise exposure level of DNL 65 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 12.3 percent of people were highly annoyed, compared to between 60.1 percent and 70.9 percent within a 95 percent confidence limit from the NES.
- At a noise exposure level of DNL 60 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 6.5 percent of people were highly annoyed, compared to between 43.8 percent and 53.7 percent within a 95 percent confidence limit from the NES.
- At a noise exposure level of DNL 55 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 3.3 percent of people were highly annoyed, compared to between 27.8 percent and 36.8 percent within a 95 percent confidence limit from the NES.
- At a noise exposure level of DNL 50 dB, the updated *Schultz Curve* from the 1992 FICON Report indicated that 1.7 percent of people were highly annoyed, compared to between 15.4 percent and 23.4 percent within a 95 percent confidence limit from the NES.

Graphics comparing the updated *Schultz Curve* from the 1992 FICON Report and the curve from the NES are provided on the FAA website at [www.faa.gov/go/aviationnoise](http://www.faa.gov/go/aviationnoise).

<sup>13</sup> Federal Agency Review of Selected Airport Noise Analysis Issues (FICON), 1992.

<sup>14</sup> The Day-Night Average Sound Level (DNL or Ldn) is the 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between midnight and 7 a.m., and between 10 p.m., and midnight, local time. See 14 CFR 150.7.

<sup>15</sup> See Schultz, T.J. 1978. “Synthesis of Social Surveys on Noise Annoyance,” *Journal of the Acoustical Society of America* 64(2): 377–405.

<sup>16</sup> See Fidell, S., D. Barber, “Updating a Dosage-Effect Relationship for the Prevalence of Annoyance Due to General Transportation Noise,” *Journal of the Acoustical Society of America*, 89, January 1991, pp. 221–233; also see Finegold, L.S., C.S. Harris, and H.E. von Gierke, 1992, Applied Acoustical Report: Criteria for Assessment of Noise Impacts on People, *Journal of the Acoustical Society of America*, June 1992; also see Finegold, L.S., C.S. Harris, and H.E. von Gierke, 1994, Community Annoyance and Sleep Disturbance: Updated Criteria for Assessing the Impacts of General Transportation Noise on People, *Noise Control Engineering Journal*, Volume 42, Number 1, January–February 1994, pp. 25–30.

<sup>17</sup> The FICON 1992 analysis added to the *Schultz Curve*’s original database of 161 survey data points and calculated an updated dose-response curve using the same methodology but with a total of 400 survey data points.

<sup>18</sup> FICON, 1992.

<sup>19</sup> *Ibid.*, vol. 1, p. 2–6.

<sup>20</sup> Federal Interagency Committee on Aviation Noise Research Review of Selected Aviation Noise Issues (FICAN), 2018.

### Advancements in Survey Methodology

Earlier work to understand community response to noise, including Schultz's dose-response analysis, was based on the premise that the annoyance from any source of noise would be the same for a given DNL noise level. However, more recent work has shown that aircraft noise often results in higher levels of annoyance compared to the same level of noise from ground transportation sources.<sup>21</sup> There have been relatively few surveys of communities in the United States about aircraft noise undertaken over the last four decades. However, other countries around the world have conducted aircraft noise surveys during this time considering aircraft noise separately from noise from other modes of transportation. The results of these surveys, as reflected in a dose-response relationship published by the International Organization for Standardization,<sup>22</sup> have consistently shown higher levels of annoyance than exhibited by the *Schultz Curve*. Informed by these results, the national dose-response curve in the NES report reflects only responses to the question about aircraft noise exposure.

### Other Factors

In addition to enhancements in survey techniques and changes to the way aircraft operate, there are likely other factors contributing to a change in the way communities respond to aircraft noise. Future work is needed to fully understand the specific drivers behind these reasons, but several possibilities include:

- Changes to where people are choosing to live, including societal migration to increasingly urban environments.<sup>23</sup> Additionally, growth and changes to the makeup of suburban communities and their proximity to urban hubs may also be influencing factors on community expectations for aircraft noise exposure.
- How people work and live, including influencing factors such as increased in-home business and

teleworking in today's economy.<sup>24</sup> Changes in expectations for spending time outdoors versus indoors and the associated aircraft noise exposure may also be a factor.

- The rise of social media, the internet, and other national and global information sources, leading to an increased awareness and perception of local and national noise issues.
- Overall societal response to noise due to a combination of these or other factors.

In addition to the NES, which focuses on annoyance, the FAA is also engaged in a range of research initiatives aimed at providing information on other impacts of aircraft noise, including effects on children's learning, sleep disturbance, and potential health effects. Each of these research initiatives focuses on a distinct type of potential adverse effect associated with aviation noise exposure. The potential adverse effects explored by these initiatives may also be factors influencing the annoyance reported by the NES. However, research in these areas is still ongoing and therefore was not specifically addressed by the NES. Additional details on these research programs is provided below.

### (2) Noise Modeling, Noise Metrics, and Environmental Data Visualization

As a core component of FAA's work to address aircraft noise, as well as a requirement of its environmental regulatory commitments, the FAA must maintain the ability to accurately quantify aircraft noise exposure around airports and throughout the National Airspace System. High-fidelity modeling is the only practical method to accomplish this objective, as aircraft noise needs to be quantified over relatively large scales in an efficient and consistent manner. For more than four decades, the FAA has worked closely with industry, academic, and governmental stakeholders to advance research and development in aircraft noise modeling. This effort advances the analytical tools, metrics, data, and standards required to provide high quality results to inform the public and other stakeholders about noise exposure levels. The FAA has also been actively exploring ways to use emerging technologies to visualize environmental data including noise exposure.

<sup>24</sup> Work to explore changes to how population distribution throughout the day are related to aircraft noise exposure is planned under Airport Cooperative Research Project (ACRP) 02-84 [Anticipated] <http://apps.trb.org/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=4421>.

### Aviation Environmental Design Tool

The Aviation Environmental Design Tool (AEDT) is the FAA's required noise and environmental modeling application for all U.S. domestic regulatory analyses requiring FAA review. The AEDT also provides analysis support for the International Civil Aviation Organization—Committee on Aviation Environmental Protection, and is used as a research and assessment tool by other Federal agencies, universities, and industry stakeholders.

Through collaborations with government, university, and industry partners, the FAA actively manages AEDT to ensure that features and capabilities are developed to meet expanding environmental analysis needs, and to ensure that as new data and technologies become available they are incorporated in order to enhance modeling accuracy and efficiency. The AEDT builds on a legacy of noise modeling development, and is based on detailed aircraft-specific noise measurements and internationally accepted aircraft performance models and standards. A dynamic development process is used to create new versions of AEDT. This process allows for new features and capabilities to be added as needed, for example, when required by policy updates or informed by emerging research findings.

### Noise Screening

Building from the high-fidelity noise modeling capabilities available through AEDT, the FAA is also working to develop an updated noise screening tool. This updated noise screening tool will use a simplified noise modeling process to facilitate an expedited review of proposed Federal actions where significant noise impacts are not expected. Such an approach is beneficial where a proposed Federal Action is limited in scope and could qualify for a categorical exclusion under the FAA's procedures for implementing the National Environmental Policy Act (NEPA).<sup>25</sup> The primary goal of updating the noise screening tool is to decrease the amount of time that an analyst will need to conduct an assessment while also ensuring a fully validated result that is readily understandable by the public. While the output from a noise screening tool cannot provide the same level of detail as a comprehensive modeling tool, the simplified process provides for an expedited initial view of

<sup>25</sup> See FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Chapter 5 ("Categorical Exclusions").

<sup>21</sup> See, for example: Janssen, S., & Vos, H. (2011). Dose-Response Relationship between DNL and Aircraft Noise Annoyance: Contribution of TNO. Retrieved from TNO Report TNO-060-UT-2011-00207.

<sup>22</sup> International Organization for Standardization. (2016, March 1, 2016). International Standard 1996-1, Acoustics—Description Measurement and Assessment of Environmental Noise—Part 1: Basic Quantities and Assessment Procedures, 3rd edition.

<sup>23</sup> The U.S. Census Bureau indicates that the percentage of the population living in urban areas has increased from 73.6 percent in 1970 to 80.7 percent in 2010, an increase of 7.1 percent.



any potential changes in aircraft noise exposure.

#### *Environmental Data Visualization*

The FAA has been developing ways to utilize geospatial data to improve the agency's ability to communicate environmental data to the public. For example, the FAA has designed an Environmental Visualization Tool to take advantage of the availability of high quality geospatial data to deliver an agency-wide resource using a consistent, common visual language. Once fully implemented, this common visualization platform will serve the needs of multiple environmental programs within the FAA, including those presenting aircraft noise data to the public.

#### *Supplemental Noise Metrics*

The FAA's primary noise metric, DNL, was developed and validated to identify significant aviation noise exposure for land use and mitigation planning as well as for determining significant change in noise exposure under NEPA review. In some cases, however, it can be useful to supplement DNL with the use of other noise metrics. While other noise metrics may not provide as complete an understanding of the cumulative noise exposure from activity around an airport and its associated airspace, they often can provide opportunities to communicate the specific characteristics of noise changes due to the unique aspects of a proposed action. The FAA's NEPA procedures address the use of supplemental noise metrics.<sup>26</sup> To assist the public in understanding noise impacts, and to better facilitate communication among communities interested in systematic departure flight track dispersion, the FAA is working to assess the use of potential supplemental metrics. For a supplemental metric to be effective in evaluating potential means of achieving flight track dispersion, and to ensure that communities understand the impacts of dispersion (*i.e.*, that dispersion does not eliminate noise but rather it may move noise to other neighborhoods), the supplemental metric will need to effectively communicate the changes in noise exposure that will occur in all of the communities affected by the change, both those that would be exposed to less noise and those that would be exposed to more noise.<sup>27</sup>

<sup>26</sup> See FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Appendix B, paragraph B-1.6; *1050.1F Desk Reference*, Section 11.4.

<sup>27</sup> FAA, 2020, Report to Congress: FAA Reauthorization Act of 2018 (Pub. L. 115-254)

### **(3) Reduction, Abatement, and Mitigation of Aviation Noise**

To directly address noise concerns, the FAA sponsors multiple research programs to explore different concepts for aircraft noise reduction. As aircraft noise is a complex issue, no single concept is capable of providing a universal solution. However, by conducting research across different areas, the FAA is developing solutions to reduce noise at its source, abate noise through operations, and mitigate the effects of noise on communities. The intent of this approach is to have a variety of options to reduce the noise being experienced by those living near airports around the country and to have options that could be tailored to specific airports.

#### *Aircraft Source Noise Reduction*

As noted previously, the single most influential factor in the historical decline in noise exposure was the phased transition to quieter aircraft. Through the public-private partnership of the Continuous Lower Energy, Emissions, and Noise (CLEEN) Program, the FAA and industry are working together to develop technologies that will enable manufacturers to create aircraft and engines with lower noise and emissions as well as improved fuel efficiency.<sup>28</sup> The technologies being accelerated by the CLEEN Program have relatively large technological risk. Government resources help mitigate this risk and incentivize aviation manufacturers to invest and develop these technologies. By cost-sharing the development with the FAA, industry is willing to accept the greater risk and can better support the business case for this technological development. Once entered into service, the CLEEN technologies will provide societal benefits in terms of reduced noise, fuel burn, and emissions throughout the fleet for years to come. In addition to the benefits provided by technologies developed under the CLEEN, the program leads to advances in the analysis and design tools that are used on every aircraft or engine product being made by these companies; this extends the benefits of the CLEEN Program well beyond the individual technologies being matured.

Section 188 and Sec 173, [https://www.faa.gov/about/plans\\_reports/congress/media/Day-Night-Average\\_Sound\\_Levels\\_COMPLETED\\_report\\_w\\_letters.pdf](https://www.faa.gov/about/plans_reports/congress/media/Day-Night-Average_Sound_Levels_COMPLETED_report_w_letters.pdf).

<sup>28</sup> See, for example, information on the FAA's "Continuous Lower Energy, Emissions, and Noise" (CLEEN) Program at: [https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/research/aircraft\\_technology/cleen/](https://www.faa.gov/about/office_org/headquarters_offices/apl/research/aircraft_technology/cleen/).

As new aircraft and engine technologies lead to quieter aircraft over time, the FAA works to establish aircraft certification standards based on noise stringency requirements. These standards are a requirement of the airworthiness process and are described in 14 CFR part 36. These requirements do not force manufacturers to develop new technology. However, as new noise reduction technologies emerge they do ensure that new aircraft continue to meet increasingly quieter standards within the bounds of what is technologically feasible and economically reasonable.

#### *Noise Abatement*

The FAA is also supporting multiple efforts to identify means to abate noise through changes in how aircraft are operated in the airspace over communities. In the immediate vicinity of an airport, use of voluntary noise abatement departure procedures (NADP) has been a longstanding technique available to reduce noise. Recent research is examining the effectiveness of these procedures and identifying means of improving their use.

As the FAA works to modernize the National Airspace System, new aircraft flight procedures have been designed to take advantage of PBN technologies. To better understand both the environmental benefits and challenges posed by PBN, the FAA is working to re-examine ways to routinely consider noise during flight procedure design. This effort includes an exploration of how PBN can better control flight paths and move them away from noise-sensitive areas, how changes in aircraft performance could be safely managed to reduce noise, and how systematic departure flight track dispersion can be implemented to abate noise concerns.

In a recent partnership with the Massachusetts Port Authority (Massport) and MIT, the FAA jointly contributed to research considering how Area Navigation (RNAV) PBN procedures could be designed and implemented to reduce noise. Multiple concepts were explored that highlighted how collaborations between the FAA, airport operators, and community members can produce innovative noise abatement strategies.

A recently completed analysis of operational procedures that resulted from the Massport-MIT-FAA partnership shows that for modern aircraft on departure, changes in aircraft climb speed have minimal impact on the overall aircraft departure noise. The current best practice for NADP, using International Civil Aviation Organization distant community or

“NADP-2” departure procedure, has been shown to minimize modeled noise impacts. This analysis also shows that for modern aircraft on arrival, changes in approach airspeed could have a noticeable impact (reductions of 4–8 dBA) on the overall aircraft noise at relatively large distances from touching down (between 10 and 25 nautical miles from the runway). While NADP procedures have the potential to reduce community noise, they may also have implementation challenges that will need to be overcome. Research is ongoing at MIT to address these challenges.<sup>29</sup>

In addition to airplane operations, the FAA is also examining the potential for helicopter noise abatement through changes in operational procedures. The FAA has partnered with the Volpe Center, the National Aeronautics and Space Administration, the Pennsylvania State University, and operator organizations to explore new ways to safely fly rotorcraft while also reducing noise through the Fly Neighborhood Program.<sup>30</sup>

#### Noise Mitigation Research

Noise mitigation is the effort to take actions to reduce the impact of aircraft noise exposure that occurs. The primary mitigation strategies involve encouraging responsible land use planning in airport communities and, where appropriate, the application of sound insulation treatments to eligible homes or other noise-sensitive public buildings (e.g., schools or hospitals). In extreme cases where sound insulation technologies cannot provide adequate mitigation, the acquisition of residential homes and conversion to non-residential land use is also an option.

As sound insulation treatment costs have continued to rise and new research on the human impacts from noise becomes available, the FAA is exploring the cost-benefit calculus of existing noise mitigation strategies and technologies in order to better direct where and how limited mitigation resources should be applied. Recent academic research<sup>31</sup> and internal assessments have raised questions about the benefits of sound insulation relative to the costs. While the relative benefits of sound insulation for noise exposures above DNL 65dB will depend on the

<sup>29</sup> <https://ascent.aero/project/analytical-approach-for-quantifying-noise-from-advanced-operational-procedures/>, <https://ascent.aero/project/aircraft-noise-abatement-procedure-modeling-and-validation/>.

<sup>30</sup> <https://www.rotor.org/initiatives/fly-neighborly>.

<sup>31</sup> Wolfe, Malina, Barrett & Waitz 2016, Cost and benefits of US Aviation noise land-use policies, Transportation Research Part D.

individual home treatment costs, minimal benefit can be expected for sound insulation treatments applied for noise exposures below DNL 65dB.

#### Aircraft Noise Policy Background

Community response to noise has historically been a primary factor underlying the FAA’s noise-related policies, including the establishment of DNL 65 dB as the threshold of “significant” aircraft noise exposure. The FAA has been using a DNL of 65 dB as the basis for: (1) Setting the agency’s policy goal of reducing the number of people exposed to significant aircraft noise;<sup>32</sup> (2) the level of aircraft noise exposure below which residential land use is “normally compatible,” as defined in regulations implementing the Aviation Safety and Noise Abatement Act of 1979,<sup>33</sup> and (3) the level of aircraft noise exposure below which noise impacts of FAA actions in residential areas are not considered “significant” under section 102(2)(C) of the National Environmental Policy Act of 1969.<sup>34</sup>

Research results, as reflected in the programs and studies described in this notice, will provide new information on how aircraft noise in communities near airports may be effectively managed and will inform future decision making on the FAA’s aircraft noise policies.

However, as previously stated, the FAA will not make any determinations on implications from these emerging research results for FAA noise policies until it has carefully considered public and other stakeholder input, and assesses the factors behind any increases in community impacts from aircraft noise exposure. Unless and until any changes become effective, all existing FAA regulations, orders, and policies remain in effect. The FAA is committed to informing and involving the public, and to giving meaningful consideration to community concerns and views as the FAA makes aviation decisions that affect them.

<sup>32</sup> See “Aviation Environmental and Energy Policy Statement,” 77 FR 43137, 43138 (July 23, 2012), available on the FAA website at [URL]. The “noise goal” identified in this document includes “[r]educ[ing] the number of people exposed to significant noise around U.S. airports.”

<sup>33</sup> 49 U.S.C. 47502. The regulations implementing this section are codified at 14 CFR part 150.

<sup>34</sup> 49 U.S.C. 4332(2)(C). See FAA Order 1050.1F, “Environmental Impacts: Policies and Procedures” (2015), Exhibit 4–1. The significance threshold for noise used for NEPA purposes in FAA Order 1050.1F is also used by the FAA for determining significant adverse noise effects under 49 U.S.C. 47106(c)(1)(B) for airport development projects involving the location of an airport or runway or a major runway extension. See 80 FR 44209, 44223 (July 24, 2015) (preamble to FAA Order 1050.1F).

#### Comments Invited

The FAA recognizes that a range of factors may be driving concerns due to aircraft noise. However, as outlined in this notice, a broad understanding of aircraft noise and its potential impacts is needed in order to better manage and reduce concerns from aviation noise.

The FAA is inviting comments on these concerns to assist the agency in assessing how resources should be directed to better understand and manage the factors underlying the concern from aircraft noise exposure.

Comments that focus on the questions listed below will be most helpful. The more specific the comments, the more useful they will be in the FAA’s considerations.

(1) What, if any, additional investigation, analysis, or research should be undertaken in each of the following three categories as described in this notice:

- Effects of Aircraft Noise on Individuals and Communities;
- Noise Modeling, Noise Metrics, and Environmental Data Visualization; and
- Reduction, Abatement, and Mitigation of Aviation Noise?

(2) As outlined in this notice, the FAA recognizes that a range of factors may be driving the increase in annoyance shown in the Neighborhood Environmental Survey results compared to earlier transportation noise annoyance surveys—including survey methodology, changes in how commercial aircraft operate, population distribution, how people live and work, and societal response to noise. The FAA requests input on the factors that may be contributing to the increase in annoyance shown in the survey results.

(3) What, if any, additional categories of investigation, analysis, or research should be undertaken to inform FAA noise policy?

**Authority:** National Environmental Policy Act (NEPA) 42 U.S.C. 4321 *et. seq.*, Aviation Safety and Noise Abatement Act (ASNA) 49 U.S.C. 47501 *et. seq.*, Federal Aviation Act, 49 U.S.C. 44715.

Issued in Washington, DC.

**Kevin Welsh,**

*Director, Office of Environment and Energy.*

[FR Doc. 2021–00564 Filed 1–12–21; 8:45 am]

**BILLING CODE 4910–13–P**

## Federal Policy Working Group

### MEETING SUMMARY

FEBRUARY 1, 2021; 5:00 PM – 7:00 PM  
VIA ZOOM VIDEOCONFERENCE

#### Meeting Objectives:

Update on the Biden administration and recent Virtual DC Fly-in meetings. To discuss how to best utilize the fly-in meetings going forward and what areas the Federal Policy Working Group will track and focus on the next few months.

#### Meeting Summary:

- I. New facilitator introduction, *Brian Scott from BDS Planning & Urban Design*
- II. Biden Administration and Opportunities, *Eric Schinfeld, Port of Seattle*  
The Biden Administration presents new opportunities for progress StART's federal policy agenda. Eric noted that Federal Policy Working Group priorities can be accomplished through three mechanisms:
  1. Executive action by the President and relevant federal agencies
  2. Legislation (60 votes needed in the Senate to overcome filibuster), including the annual appropriations bills
  3. Budget reconciliation between the House and Senate for fiscal and tax matters (only 50 votes are needed, but can only be used once or twice each year). The two available vehicles in 2021 are:
    - o COVID relief package
    - o Build Back Better package (rebuilding the economy via infrastructure/climate actions)

Eric also noted that the Biden administration, the Federal Aviation Administration (FAA), Congress, and the U.S. Department of Transportation all support sustainability and the environment, which aligns well with the Working Group's framework, which puts StART priorities in a strong position.
- III. Congressional Briefing Update, *Eric Schinfeld, Port of Seattle*  
Feedback from participants in the Virtual DC Fly-ins was positive and optimistic about the upcoming meetings. The group sees opportunities to build stronger relationships and to foster alliances through a unified voice on key topics.  
Target groups to approach:
  - o Schedule with Senator Cantwell and Representative Larsen
  - o Eastern Washington Members of Congress
  - o Start conversations with USDOT and FAA
  - o Members of Congress and community representatives from other aviation regions (i.e. - Boston & Bay Area)
- IV. Next Steps
  1. Group to send suggestions on how to improve the congressional meetings to Eric
  2. Circle back with Congressional staff to identify tangible next steps for progress on the policy priorities

# StART

## SEA Stakeholder Advisory Round Table

MEMBER	INTEREST REPRESENTED	PRESENT
ALEX STONE	OFFICE OF CONGRESSMAN ADAM SMITH	✓
AMANDA WYMAN-BRADLEY	OFFICE OF CONGRESSMAN ADAM SMITH	-
ANTHONY HEMSTAD	DES MOINES	✓
BRANDON MILES	TUKWILA	-
BRIAN WILSON	BURIEN	✓
CHRIS HALL	FEDERAL WAY	✓
ERICA POST	TUKWILA	-
JENNIFER FERRER-SANTA-INES	NORMANDY PARK	✓
JESSICA MULLIGAN	OFFICE OF CONGRESSWOMAN PRAMILA	-
KYLE MOORE	SEATAC	✓
LANCE LYTTLE	PORT OF SEATTLE	✓
LAVANYA MADHUSUDAN	OFFICE OF CONGRESSWOMAN PRAMILA	✓
MEGAN UTEMEI	OFFICE OF SEN. PATTY MURRAY	-
MICHAEL MATTHIAS	DES MOINES	-
ROBERT AKHTAR	SEATAC	-
TOMMY BAUER	OFFICE OF SEN. MARIA CANTWELL	-
<b>RESOURCES</b>	<b>TITLE</b>	
ARLYN PURCEL	PORT OF SEATTLE	-
CLARE GALLAGHER	PORT OF SEATTLE	-
DAVE KAPLAN	PORT OF SEATTLE	✓
ERIC SCHINFELD	PORT OF SEATTLE	✓
JUSTIN BIASSOU	FAA	-
KELLY SCHIMELFENIG	PORT OF SEATTLE	-
LANCE LYTTLE	PORT OF SEATTLE	✓
LESLIE LARDIE	FAA	-
MARCO MILANESE	PORT OF SEATTLE	✓
PATRICIA LY	PORT OF SEATTLE	-
STAN SHEPHERD	PORT OF SEATTLE	✓
<b>CONSULTANT</b>		
BRIAN SCOTT	BDS PLANNING & URBAN DESIGN	✓

*NEXT MEETING: APRIL 5, 2021- TENTATIVELY 5:00 PM - 7:00 PM*

*LOCATION: ZOOM VIDEOCONFERENCE*

StART enhances cooperation between the Port of Seattle and the neighboring communities of Seattle-Tacoma International Airport

## Aviation Noise Working Group

### MEETING SUMMARY

FEBRUARY 8, 2021; 5:00 PM – 7:00 PM

VIA ZOOM VIDEOCONFERENCE

#### Meeting Objectives:

- Review StART's new operating procedures.
- Receive an update on the near-term aviation noise action agenda.
- Review aircraft fleet changes at SEA
- Review FAA's Noise Annoyance Survey results and determine follow-up actions

#### Meeting Summary:

- I. New facilitator introduction, *Brian Douglas Scott from BDS Planning & Urban Design*
- II. StART's New Operating Procedures, *Marco Milanese, Port of Seattle*  
 Marco outlined the major changes in the new operating procedures. They are as follows:
  - A. Steering Committee
    - Steering Committee is established to provide support, guidance, and strategic direction for StART
    - Membership of the Steering Committee will include the Chair, primary non-elected city representatives, and airline representatives.
  - B. StART shall have a formal relationship & reporting structure with Highline Forum
  - C. It is the responsibility of each city or entity to ensure adherence to the operating procedure from their appointed members and alternates.
  - D. Membership on StART does not preclude StART members from participating fully in any airport-related environmental review processes.
  - E. Meetings will not be officially audio or video recorded.
- III. Near-Term Aviation Noise Action Agenda Update, *Tom Fagerstrom, Port of Seattle*
  - A. Late-Night Noise Limitation Program
    - Since COVID, increased cargo flights has contributed to more late-night noise exceedances (e-commerce is one of the major drivers for why)
      - i. Port will have discussions with cargo carriers regarding exceedances
    - The percentage of late-night operations exceeding noise thresholds has increased as passenger flights have decreased due to COVID.
  - B. Cargo carriers exceeding thresholds
    - FedEx has the most late-night exceedances
    - Amazon Prime (Air Transport Intl') had the most late-night operations
  - C. Third Runway Use
    - Use of the Third runway, during the late-night hours, continues to decline.
    - A total of only two landings took place on the Third Runway in January during late-night hours.
    - The Runway Use Agreement continues to demonstrate clear beneficial results.



- IV. Aircraft Fleet Changes at SEA, Tim Toerber, Port of Seattle
  - A. Passenger carrier fleets have shrunk substantially since the pandemic. Trends are toward greater use of quieter aircraft, such as the A350 & 787.
  - B. Alaska Airlines’ 737 Max operation starts in March 2021 and other air carriers are planning on changing to quieter fleets overtime.
  - C. Passenger forecast indicates 2019 levels will not return until 2025.
- V. FAA Noise Annoyance Survey/Neighborhood Environmental Survey Results, Vince Mestre (consultant)
  - A. The survey looked at 20 airports and found that 66% of those surveyed are highly annoyed by aviation noise compared to 12%.
  - B. The Schultz’ curve, used in the 1978 FICON report, greatly underestimated the sensitivity of people to aviation noise. FAA hopes to gather suggestions and input from communities on next steps.
  - C. Any change to the 65 DNL would require Congressional action.
- VI. Next Steps
  - A. Potential future topics to be considered:
    - a. How might air carriers be further incentivized or penalized regarding late-night operations?
    - b. Next phases of the ultrafine particulates studies
    - c. Public health study correlation with the Neighborhood Environmental Survey

MEMBER	INTEREST REPRESENTED	PRESENT
BILL VADINO	FEDERAL WAY – CITY	✓
BRIAN WILSON	BURIEN – CITY	✓
CARL COLE	SEATAC – CITY	-
CHRIS HALL	FEDERAL WAY – COMMUNITY REPRESENTATIVE	✓
DAVE BERGER	FEDERAL WAY – COMMUNITY REPRESENTATIVE	✓
ERIC ZIMMERMANN	NORMANDY PARK – COMMUNITY REPRESENTATIVE	✓
ERICA POST	TUKWILA – COMMUNITY REPRESENTATIVE	-
JENNIFER KESTER	SEATAC – CITY	✓
LANCE LYTTLE	PORT OF SEATTLE	✓
MARC HOPPEN	NORMANDY PARK – CITY	✓
MICHAEL MATTHIAS/ ERIC LANE	DES MOINES – CITY	✓
ROBERT AKHTAR	SEATAC – COMMUNITY REPRESENTATIVE	-
SCOTT INGHAM	DELTA AIR LINES	✓
SCOTT KENNEDY	ALASKA AIRLINES	-
STEVEN OSTERDAHL	ALASKA AIRLINES	✓
SUSAN CEZAR	DES MOINES - CITY	-
RESOURCES	TITLE	
ARLYN PURCELL	PORT OF SEATTLE	✓
CHRIS SCHAFFER	FAA	✓
CLARE GALLAGHER	PORT OF SEATTLE	✓
DAVE KAPLAN	PORT OF SEATTLE	✓
JUSTIN BIASSOU	FAA	✓
KELLY SCHIMELFENIG	PORT OF SEATTLE	✓

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# StART

SEA Stakeholder Advisory Round Table

LYNAE CRAIG	ALASKA AIRLINES	✓
MARCO MILANESE	PORT OF SEATTLE	✓
STAN SHEPHERD	PORT OF SEATTLE	✓
TIM TOERBER	PORT OF SEATTLE	✓
TOM FAGERSTROM	PORT OF SEATTLE	✓
CONSULTANT		
BRIAN SCOTT	BDS PLANNING & URBAN DESIGN	✓
DORI KRUPANICS	BDS PLANNING & URBAN DESIGN	✓
VINCE MESTRE	CONSULTANT	✓

NEXT MEETING: APRIL 12, 2021- TENTATIVELY 5:00 PM - 7:00 PM  
 LOCATION: ZOOM VIDEOCONFERENCE

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