



# Meeting Agenda

## Regular Meeting

Meeting No. 337  
**Wednesday, April 6, 2022 - 7:00 p.m.**  
**\*BY VIDEO CONFERENCE ONLY\***  
Please click the link below to join the webinar:  
<https://smcgov.zoom.us/j/99504028352>  
Or Dial in:  
US: +1(669)900-6833 Webinar ID: 995 0402 8352

Note: To arrange an accommodation under the Americans with Disabilities Act to participate in this public meeting, please call (650) 363-4220 at least 2 days before the meeting date.

### **PUBLIC PARTICIPATION:**

Written public comments can be emailed to [amontescardenas@smcgov.org](mailto:amontescardenas@smcgov.org), and should include specific agenda item to which you are commenting. Spoken public comments will also be accepted on Items NOT on the Agenda, before adoption of Consent Agenda, and Regular Agenda during the meeting.

\*\*Please see instructions for written and spoken comments at the end of this agenda.

### **Call to Order / Roll Call / Declaration of a Quorum Present**

Sam Hindi, Roundtable Chairperson

### **Public Comment on Items NOT on the Agenda**

Speakers are limited to two minutes. Roundtable members cannot discuss or take action on any matter raised under this item.

### **Action to set Agenda and to Approve Consent Items**

Sam Hindi, Roundtable Chairperson

## **CONSENT AGENDA**

All items on the Consent Agenda are approved/accepted in one motion. A Roundtable Representative can make a request, prior to action on the Consent Agenda, to transfer a Consent Agenda item to the Regular Agenda. Any items on the Regular Agenda may be transferred on the Consent Agenda in a similar manner. Public Comment is received prior to approval of the Consent Agenda.

1. Airport Director's Reports pg.7  
January - February 2022
2. Minutes from the February 2, 2022, Regular Meeting pg.17
3. Approval of Resolution 22-03: Findings Allowing Continued Remote Meetings Under Brown Act pg.24

**REGULAR AGENDA**

Public Comment received on Regular Agenda items prior to action.

- 4. **ACTION:** Ground Based Augmentation System Noise Measurement Report – HMMH Review pg.29  
Eugene Reindel, HMMH, Technical Consultant
- 5. **ACTION:** Proposal of Letter to City of San Bruno on Tanforan Development pg.37  
Sam Hindi, Roundtable Chairperson

**PRESENTATIONS**

- 6. Title 21 Reporting Update pg.38  
Lisa Aozasa, County of San Mateo, Planning & Building Deputy Director
- 7. Chairman’s Update  
Sam Hindi, Roundtable Chairperson
- 8. SFO Airport Director Update  
Ivar Satero, Airport Director
- 9. Subcommittee Updates
  - a. Technical Working Group pg.40  
Sam Hindi, Subcommittee Chairperson
  - b. Ground-Based Noise Subcommittee pg.42  
Ann Schneider, Subcommittee Chairperson
  - c. Legislative Subcommittee  
Al Royse, Subcommittee Chairperson
  - d. Work Program Update  
Sam Hindi, Subcommittee Chairperson
- 10. Member Communications / Announcements  
Roundtable Members and Staff

**MEETING CLOSURE**

- 11. Adjourn  
Roundtable Chairperson

**Information Only**

- i. HMMH Noise News – March 2022 pg.44
- ii. HMMH FAA IFP Information Gateway Review – February & March 2022 pg.48
- iii. Roundtable Budget FY21-22 – Q3 Actuals pg.61
- iv. NIITE/HUSSH Procedure Letters (FAA, Congresswoman & SFORT) pg.62
- v. Congressional Hearing on Aviation Noise
  - a. N.O.I.S.E. Summary pg.67
  - b. SFORT Testimony Letter pg.79
- vi. Airport Noise Report Vol. 34 No. 12 – Health Effects pg. 83

**\*\*Instructions for Public Comment during Videoconference Meeting**

During videoconference meetings of the SFO Airport/Community Roundtable, members of the public may address the Roundtable as follows:

**Written Comments:**

Written public comments may be emailed in advance of the meeting. Please read the following instructions carefully:

1. Your written comment should be emailed to [amontescardenas@smcgov.org](mailto:amontescardenas@smcgov.org)
2. Your email should include the specific agenda item on which you are commenting.
3. Members of the public are limited to one comment per agenda item.
4. The length of the emailed comment should be commensurate with two minutes customarily allowed for verbal comments, which is approximately 250-300 words.
5. If your emailed comment is received by 7:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

**Spoken Comments:**

Spoken public comments will be accepted during the ZOOM meeting at the following times: a) Items NOT on the Agenda; b) On Consent Calendar Agenda; c) after each Regular Agenda Items; and d) at the end of all Presentations. Please read the following instructions carefully:

1. The April 6, 2022 SFO Roundtable regular meeting may be accessed through Zoom online at <https://smcgov.zoom.us/j/99504028352>. The meeting ID: 995 0402 8352. The meeting may also be accessed via telephone by dialing in +1-669-900-6833, entering meeting ID: 995 0402 8352, then press #.
2. You may download the Zoom client or connect to the meeting using the internet browser. If you are using your browser, make sure you are using current, up-to-date browser: Chrome 30+, Firefox 27+, Microsoft Edge 12+, Safari 7+. Certain functionality may be disabled in older browsers including Internet Explorer.
3. You will be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
4. When the Roundtable Chairperson calls for the item on which you wish you speak click on "raise-hand" icon. You will then be called on and unmuted to speak.
5. When called, please limit your remarks to the time limit allotted.

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**Note:** Public records that relate to any item on the open session Agenda (Consent and Regular Agendas) for a Regular Airport/Community Roundtable Meeting are available for public inspection. Those records that are distributed less than 72 hours prior to a Regular Meeting are available for public inspection at the same time they are distributed to all Roundtable Members, or a majority of the Members of the Roundtable. The Roundtable has designated the San Mateo County Planning & Building Department, at 455 County Center, 2nd Floor Redwood City, California 94063, for the purpose of making those public records available for inspection. The documents are also available on the Roundtable website at: [www.sforoundtable.org](http://www.sforoundtable.org).



# Member Roster

April 2022

**CITY AND COUNTY OF SAN FRANCISCO  
BOARD OF SUPERVISORS**  
Ahsha Safai

**CITY AND COUNTY OF SAN FRANCISCO MAYOR'S  
OFFICE**  
Alexandra Sweet, (Appointed)

**CITY AND COUNTY OF SAN FRANCISCO AIRPORT  
COMMISSION REPRESENTATIVE**  
Ivar Satero, Airport Director (Appointed)  
Alternate: Doug Yakel, Public Information Officer

**COUNTY OF SAN MATEO  
BOARD OF SUPERVISORS**  
Dave Pine  
Alternate: Don Horsley

**CITY/COUNTY ASSOCIATION OF GOVERNMENTS  
AIRPORT LAND USE COMMITTEE (ALUC)**  
Carol Ford (Appointed)

**TOWN OF ATHERTON**  
Bill Widmer  
Alternate: Mike Lempres

**CITY OF BELMONT**  
Tom McCune  
Alternate: Davina Hurt

**CITY OF BRISBANE**  
Terry O'Connell  
Alternate: Madison Davis

**CITY OF BURLINGAME**  
Ricardo Ortiz  
Alternate: none

**TOWN OF COLMA**  
John Goodwin  
Alternate: Joanne del Rosario

**CITY OF DALY CITY**  
Pamela DiGiovanni  
Alternate: Rod Daus-Magbual

**CITY OF FOSTER CITY**  
Sam Hindi \*Chairperson

**CITY OF HALF MOON BAY**  
Debbir Ruddock  
Alternate: Robert Brownstone

**TOWN OF HILLSBOROUGH**  
Alvin Royse  
Alternate: Christine Krolik

**CITY OF MENLO PARK**  
Cecilia Taylor  
Alternate: Ray Mueller

**CITY OF MILLBRAE**  
Ann Schneider  
Alternate: Anne Oliva

**CITY OF PACIFICA**  
Mike O'Neill  
Alternate: Sue Vaterlaus

**TOWN OF PORTOLA VALLEY**  
Jeff Aalfs  
Alternate: Craig Hughes

**CITY OF REDWOOD CITY**  
Jeff Gee  
Alternate: Giselle Hale

**CITY OF SAN BRUNO**  
Tom Hamilton  
Alternate: none

**CITY OF SAN CARLOS**  
John Dugan  
Alternate: Adam Rak

**CITY OF SAN MATEO**  
Amourence Lee  
Alternate: Diane Papan

**CITY OF SOUTH SAN FRANCISCO**  
Mark Addiego  
Alternate: Mark Nagales

**TOWN OF WOODSIDE**  
John Carvell  
Alternate: Richard Brown

## ROUNDTABLE ADVISORY MEMBERS

**AIRLINES/FLIGHT OPERATIONS**  
Chief Pilot Lawrence Ellis, United Airlines

**FEDERAL AVIATION ADMINISTRATION**  
Faviola Garcia, Acting Deputy Regional Administrator  
Alana Jaress, Community Engagement Officer

**ROUNDTABLE STAFF**  
Doreen Stockdale, Interim Roundtable Coordinator  
Angela Montes, Roundtable Administrative  
Gene Reindel, Technical Consultant (HMMH)

**SFO AIRPORT NOISE OFFICE STAFF**  
Bert Ganoung, Noise Office Manager



# Welcome

The Airport/Community Roundtable is a voluntary committee that provides a public forum to address community noise issues related to aircraft operations at San Francisco International Airport. The Roundtable encourages orderly public participation and has established the following procedure to help you, if you wish to present comments to the committee at this meeting via Zoom.

- You may email your comments ahead of time to [amontescardenas@smcgov.org](mailto:amontescardenas@smcgov.org).
- To speak during the meeting you may use "raise-hand" feature through Zoom.
- The Roundtable Secretary will call your name; please state where you calling from to present your comments. Full instructions in agenda below.

The Roundtable may receive several speaker requests on more than one Agenda item; therefore, each speaker is limited to two (2) minutes to present his/her comments on any Agenda item unless given more time by the Roundtable Chairperson. The Roundtable meetings are recorded. Video file of meeting will posted to website once available. Please contact the Roundtable Coordinator for any request.

Roundtable Meetings are accessible to people with disabilities. Individuals who need special assistance or a disability-related modification or accommodation to participate in this meeting, or who have a disability and wish to request an alternative format for the Agenda, Meeting Notice, Meeting Packet, or other writings that may be distributed at the meeting, should contact the Roundtable Coordinator at least two (2) working days before the meeting at the phone or e-mail listed below. Notification in advance of the meeting will enable Roundtable staff to make reasonable arrangements to ensure accessibility to this meeting.



# About the Roundtable

The Airport/Community Roundtable was established in May 1981, by a Memorandum of Understanding (MOU), to address noise impacts related to aircraft operations at San Francisco International Airport (SFO). The Airport is owned and operated by the City and County of San Francisco, but it is located entirely within San Mateo County. This voluntary committee consists of 22 appointed and elected officials from the City and County of San Francisco, the County of San Mateo, and several cities in San Mateo County (see attached Membership Roster). It provides a forum for the public to address local elected officials, Airport management, FAA staff, and airline representatives, regarding aircraft noise issues. The committee monitors a performance-based aircraft noise mitigation program, as implemented by Airport staff, interprets community concerns, and attempts to achieve additional noise mitigation through a cooperative sharing of authority brought forth by the airline industry, the FAA, Airport management, and local government officials. The Roundtable adopts an annual Work Program to address key issues. In 2020, the Roundtable is scheduled to meet on the first Wednesday of the following months: February, April, June, August, October and December. Regular Meetings are held on the first Wednesday of the designated month at 7:00 p.m. at the **David Chetcuti Community Room at Millbrae City Hall, 450 Poplar Avenue, Millbrae, California** unless noted. **Beginning March 2020 all meetings will be held virtually via Zoom due to COVID-19.** Special Meetings and workshops are held as needed. The members of the public are encouraged to attend the meetings and workshops to express their concerns and learn about airport/aircraft noise and operations.

## POLICY STATEMENT

The Airport/Community Roundtable reaffirms and memorializes its longstanding policy regarding the “shifting” of aircraft-generated noise, related to aircraft operations at San Francisco International Airport, as follows:

**“The Airport/Community Roundtable members, as a group, when considering and taking actions to mitigate noise, will not knowingly or deliberately support, encourage, or adopt actions, rules, regulations or policies, that result in the “shifting” of aircraft noise from one community to another, when related to aircraft operations at San Francisco International Airport.”**

*(Source: Roundtable Resolution No. 93-01)*

## FEDERAL PREEMPTION, RE: AIRCRAFT FLIGHT PATTERNS

The authority to regulate flight patterns of aircraft is vested exclusively in the Federal Aviation Administration (FAA). Federal law provides that:

**“No state or political subdivision thereof and no interstate agency or other political agency of two or more states shall enact or enforce any law, rule, regulation, standard, or other provision having the force and effect of law, relating to rates, routes, or services of any air carrier having authority under subchapter IV of this chapter to provide air transportation.”**

*(Source: 49 U.S.C. A. Section 1302(a)(1)).*



# Airport Director's Report

Presented at the April 6, 2022  
Airport/Community Roundtable Meeting

Aircraft Noise Office  
January 2022



San Francisco  
International  
Airport

# Aircraft Noise Levels

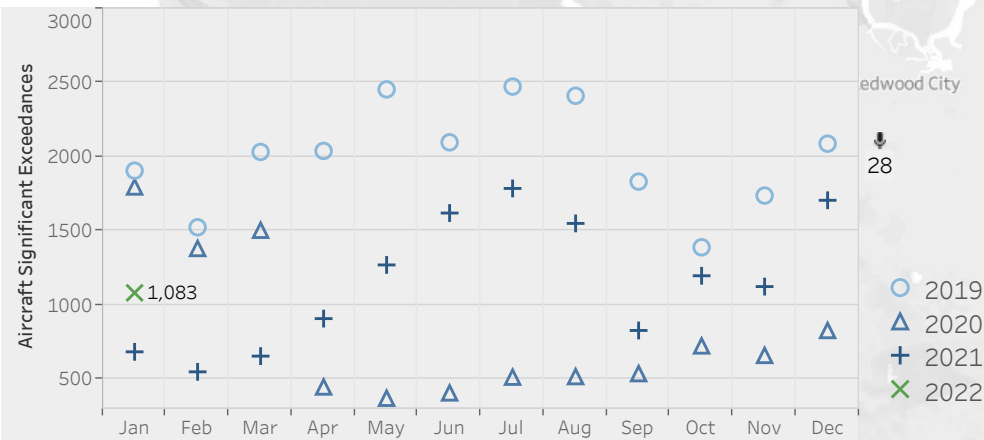
The map shows 29 aircraft noise monitoring locations that keep track of noise levels in the communities around the airport. The Community Noise Exposure Level (CNEL) metric is used to assess and regulate aircraft noise exposure in communities surrounding the airport.

Site	City	Noise Events (AVG Day)	Aircraft		Community	
			CNEL (dBA)	SEL (dBA)	LMax (dBA)	CNEL (dBA)
1	San Bruno	80	69	94	83	67
2	San Bruno	23	50	81	70	64
3	SSF	14	52	83	69	63
4	SSF	73	64	89	78	59
5	San Bruno	70	63	88	76	62
6	SSF	68	61	87	75	55
7	Brisbane	4	39	79	69	57
8	Millbrae	49	57	83	71	66
9	Millbrae	2	34	80	70	57
10	Burlingame	1	30	80	71	55
11	Burlingame	1	35	82	72	57
12	Foster City	217	59	82	71	58
13	Hillsborough	1	27	78	69	53
14	SSF	54	56	83	71	64
15	SSF	99	57	82	70	58
16	SSF	51	56	83	71	56
17	SSF	49	55	82	70	56
18	Daly City	65	61	86	75	58
19	Pacifica	48	57	84	73	57
20	Daly City	13	46	82	69	59
21	San Francisco	4	40	83	68	57
22	San Bruno	25	53	83	71	63
23	San Francisco	35	51	80	69	59
24	San Francisco	7	43	81	69	59
25	San Francisco	8	40	77	64	54
26	San Francisco	2	31	79	68	55
27	San Francisco	3	36	80	69	57
28	Redwood City	3	34	81	68	56
29	San Mateo	10	44	84	71	56

Noise Monitor's CNEL values (top) are derived from actual measured events and are used to validate the 65dBA CNEL noise footprint. Aircraft and Community monthly CNEL average for each monitor site are provided, along with daily average aircraft counts with the average Sound Exposure Level (SEL) and Maximum Level (LMax).

The graph below shows aircraft noise events that produced a noise level higher than the maximum allowable decibel value established for a particular monitoring site.

## Significant Exceedances





# Operations

January 2022

Monthly Ops    AVG Daily Ops    12 Month AVG    YOY Growth

25,308	816	22,571	38%
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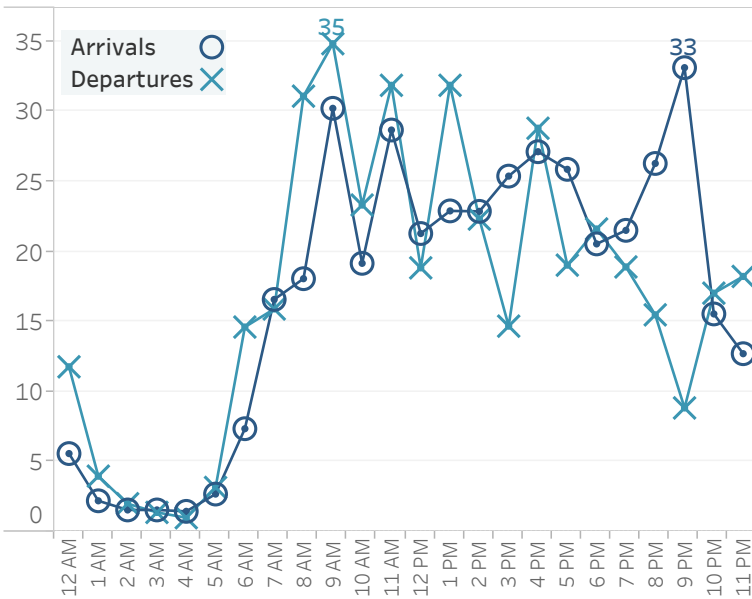
Major Arrival and Departure Routes (West Flow)



West Flow is depicted in the above image and is a predominate flow at SFO.

**West Flow**  
95%

January 2022 Average Day (Hourly)



Top Destinations

Los Angeles	Seattle	JFK	Las Vegas
7%	4%	4%	4%

Down the Bay vs Peninsula

1.1 Down the Bay Visual	28%
1.2 BDEGA Arrival	72%

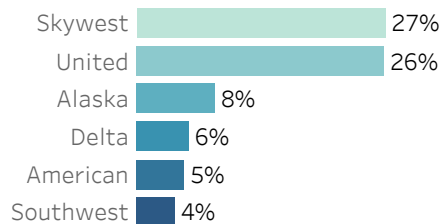
Arrival Route

1. BDEGA	27%
2. DYAMD	37%
3. SERFR	30%
4. PIRAT	7%

Departure Route

A. GAP	17%
B. SSTIK	35%
C. NIITE	9%
D. TRUKN RWY 01	39%
D. TRUKN RWY 28	1%

Airlines with the Most Operations



Non Airline

11%

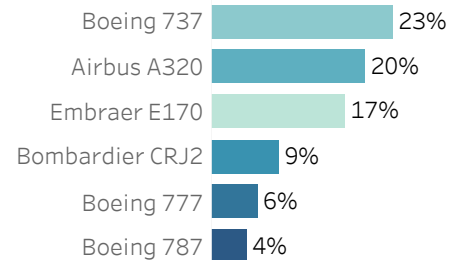
Narrow Body

74%

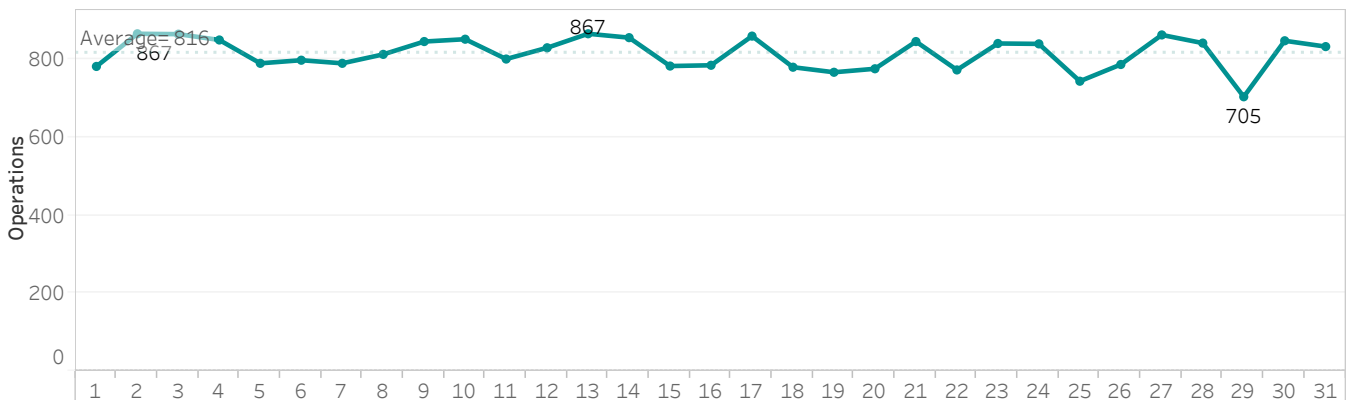
Wide Body

15%

Most Utilized Aircraft Types



Daily Aircraft Operations



# Runway Usage and Nighttime Operations

Leftmost Runway Utilization table shows percent of runway usage for arrivals and departures by runway based on air carrier operations using jet, regional jet, and turboprop aircraft. Late Night Preferential Runway Use table depicts departure runway usage between 1am - 6am for jet aircraft for the whole month (top) and during nighttime hours only (bottom). Percentages [%] are rounded to the nearest whole number.

## Runway Utilization

	Arrivals	Departures
01 L/R		80% 9,132
10 L/R	2% 204	5% 521
19 L/R	3% 285	
28 L/R	96% 10,896	15% 1,713

## Late Night Preferential Runway Use (1 am - 6 am)

	Departures
10 L/R	5% 15
01 L/R	61% 170
28 L/R	33% 92

## Runway Utilization

	Arrivals	28L	28R
		45%	55%
Night (10pm-7am)			
		22%	78%

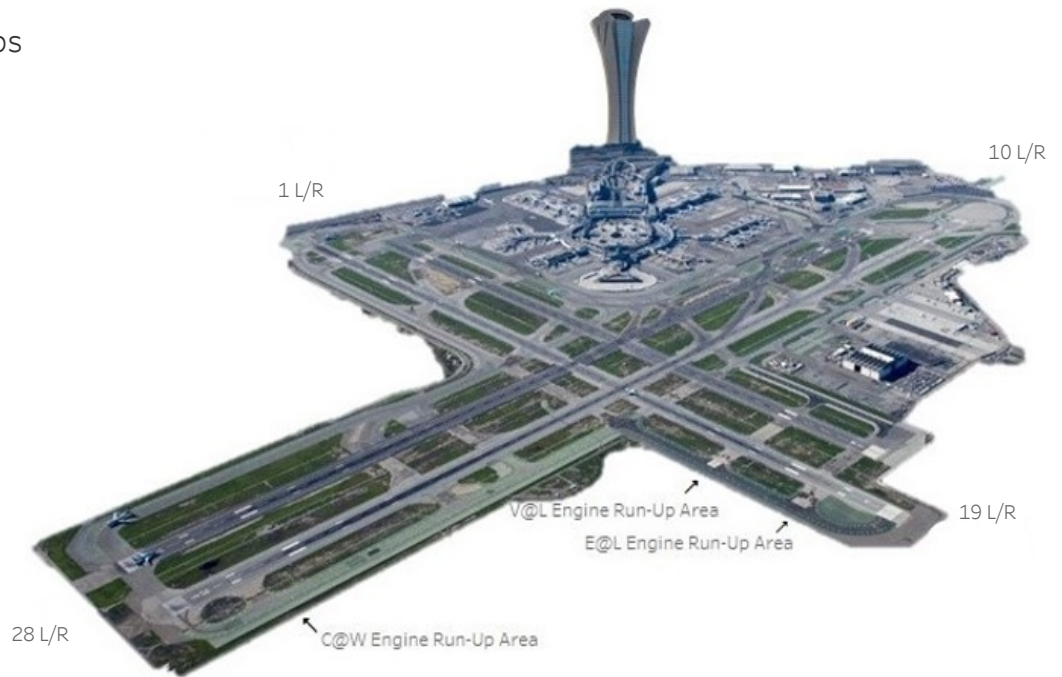
## Nighttime Power Run-Ups

10pm-7am

Alaska Airlines	4
American Airlines	6
United Airlines	7

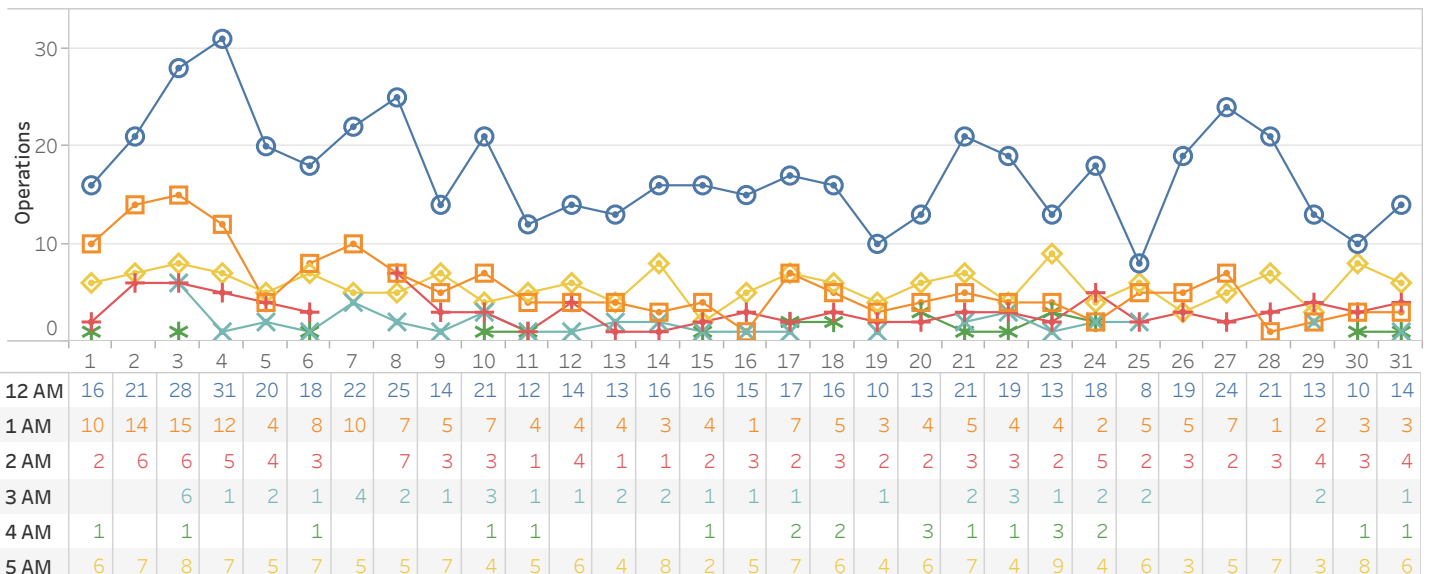
A power runup is a procedure used to test an aircraft engine after maintenance is completed. This is done to ensure safe operating standards prior to returning the aircraft to service. The Aircraft power settings range from idle to full power and may vary in duration.

Designated Power Runup locations are 19 L/R depicted on the airfield map (right) with airlines nighttime power runup counts shown above.



## Hourly Nighttime Operations

○ 12 AM    □ 1 AM    + 2 AM    × 3 AM    \* 4 AM    ◇ 5 AM



# Noise Reports

January 2022

Noise Reporters / Noise Reports

	Noise Reporters	Noise Reports
Atherton	2	21
Belmont	3	5
Brisbane	9	339
Burlingame	1	1
Daly City	7	1,597
El Granada	1	604
Foster City	2	4
Hillsborough	1	1
Menlo Park	11	1,234
Millbrae	5	32
Montara	1	165
Pacifica	14	1,057
Portola Valley	18	17,680
Redwood City	6	1,564
San Bruno	7	854
San Carlos	2	52
San Francisco	18	3,209
San Mateo	9	980
South San Francisco	9	212
Woodside	6	1,357
Alameda	3	66
Alamo	1	6
Aptos	2	10
Berkeley	1	204
Boulder Creek	2	14
Campbell	1	3
Capitola	6	100
Carmel Valley	1	41
Castro Valley	1	36
Cupertino	1	495
East Palo Alto	1	14
Emerald Hills	6	544
Felton	3	72
Fremont	1	130
Lafayette	1	2
Los Altos	53	9,396
Los Altos Hills	11	1,439
Los Gatos	47	5,114
Moraga	3	347
Mountain View	22	2,382
Oakland	15	3,147
Orinda	1	6
Palo Alto	107	20,859
Richmond	2	185
San Jose	1	3
Santa Cruz	58	11,169
Scotts Valley	33	4,564
Soquel	38	3,499
Stanford	4	807
Sunnyvale	3	78
Watsonville	1	105
<b>Grand Total</b>	<b>562</b>	<b>95,805</b>

Reporters Annual AVG

666

Reports Annual AVG

109,902

New Reporters

13

Furthest Report

85 miles

New Reporters Top City

Palo Alto  
South San Francisco

Reports per SFO Operation

4

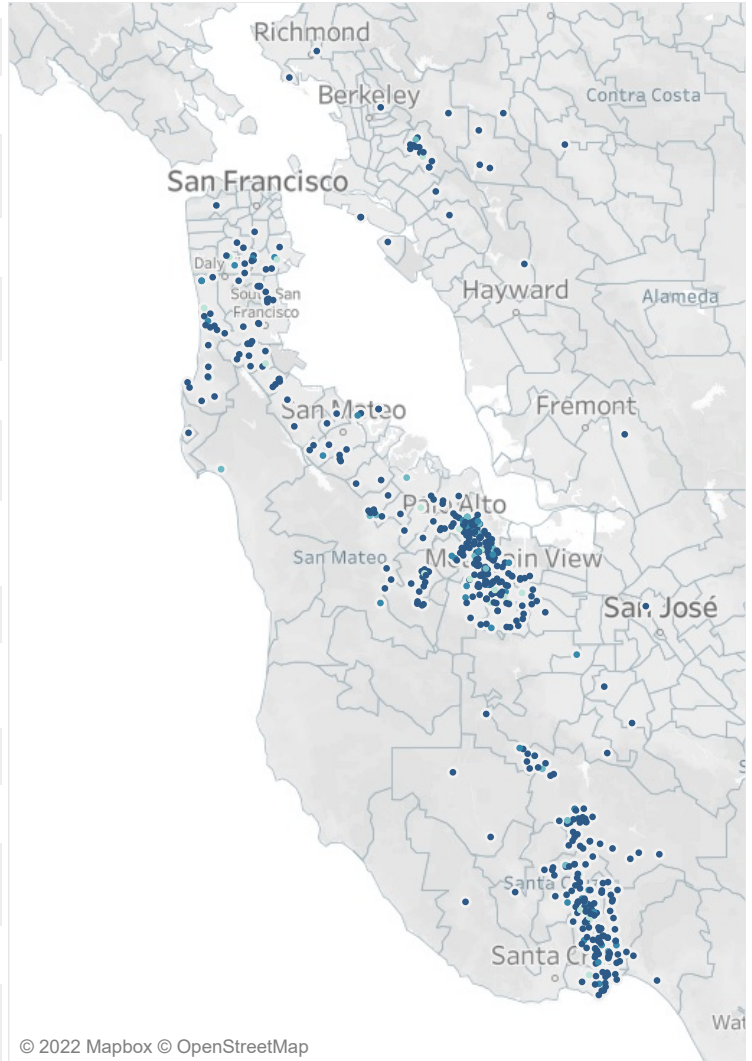
Top Aircraft Types

A320  
B737  
E75L

Top Flight Numbers

KAL214  
TAI560  
AAL2630

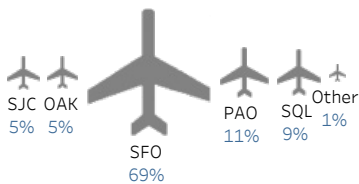
## Noise Reporters Location Map



© 2022 Mapbox © OpenStreetMap

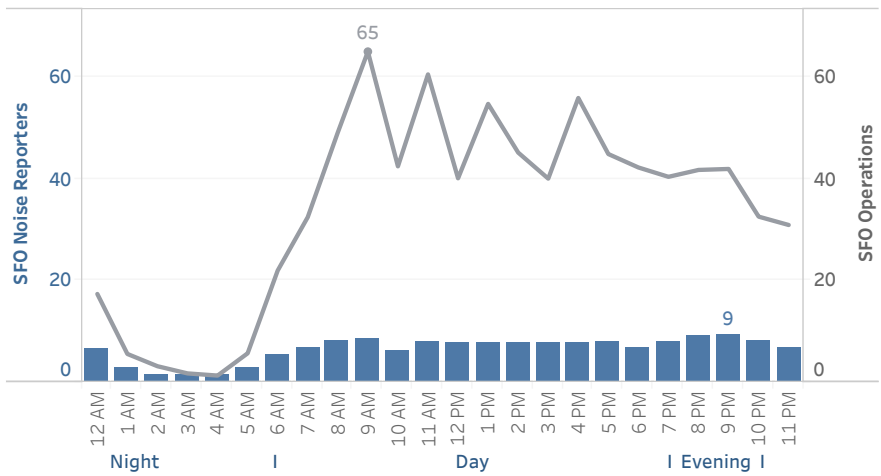
Notes: Address validation Relies on USPS-provided ZIP Code look up table and USPS-specified default city values.

## Noise Reports by Airport



99% of noise reports correlate to a flight origin/destination airport.

## Hourly Noise Reporters (Average Day in a Month)



Source: SFO Intl Airport Noise Monitoring System





# Airport Director's Report

Presented at the April 6, 2022  
Airport/Community Roundtable Meeting

Aircraft Noise Office  
February 2022



San Francisco  
International  
Airport

# Aircraft Noise Levels

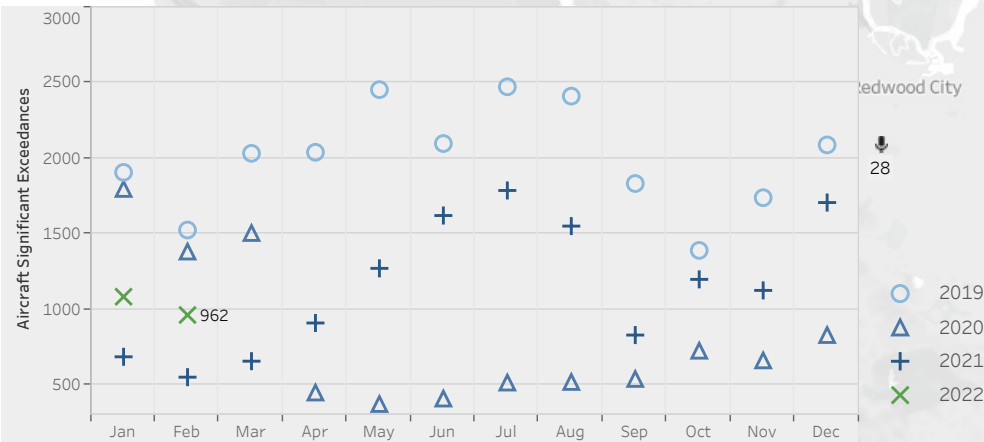
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8	Millbrae	57	58	83	71	66
9	Millbrae	2	34	81	71	58
10	Burlingame	2	35	85	71	57
11	Burlingame	2	35	82	71	58
12	Foster City	214	59	82	71	59
13	Hillsborough	2	42	92	74	56
14	SSF	53	56	82	71	59
15	SSF	95	56	81	69	59
16	SSF	51	56	83	71	62
17	SSF	50	56	85	70	58
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23	San Francisco	36	51	80	69	60
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Noise Monitor's CNEL values (top) are derived from actual measured events and are used to validate the 65dBA CNEL noise footprint. Aircraft and Community monthly CNEL average for each monitor site are provided, along with daily average aircraft counts with the average Sound Exposure Level (SEL) and Maximum Level (LMax).

The graph below shows aircraft noise events that produced a noise level higher than the maximum allowable decibel value established for a particular monitoring site.

Significant Exceedances



# Operations

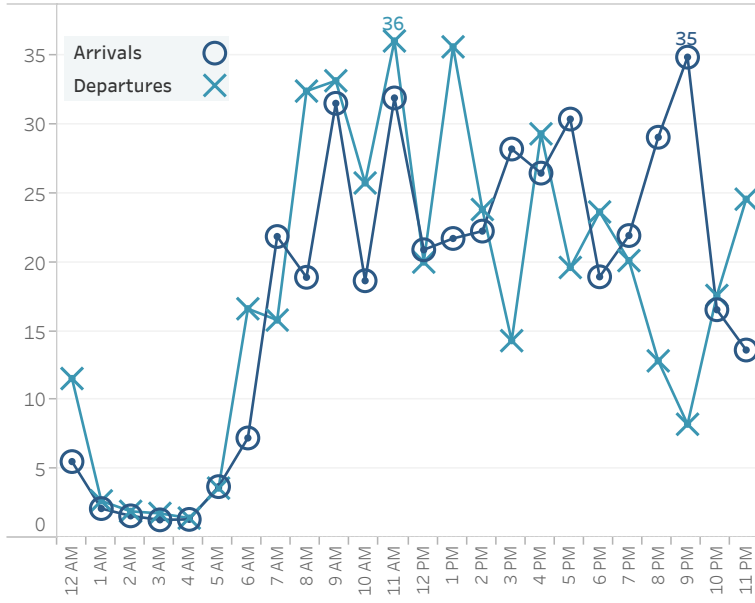
February 2022

Monthly Ops	AVG Daily Ops	12 Month AVG	YOY Growth
24,105	861	23,411	42%

Major Arrival and Departure Routes (West Flow)



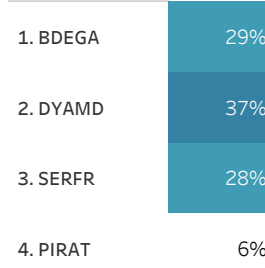
February 2022 Average Day (Hourly)



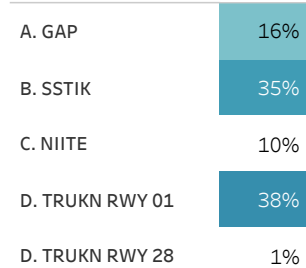
West Flow is depicted in the above image and is a predominate flow at SFO.

West Flow  
100%

Arrival Route



Departure Route



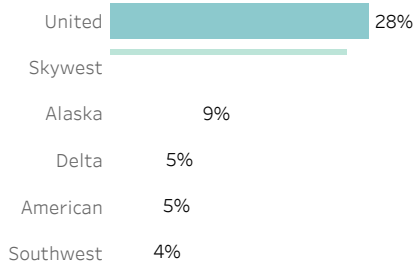
Top Destinations

Los Angeles	Seattle	JFK	Las Vegas
7%	4%	4%	3%

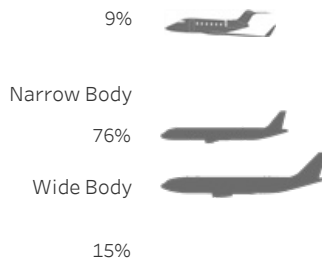
Down the Bay vs Peninsula

1.1 Down the Bay Visual	29%
1.2 BDEGA Arrival	71%

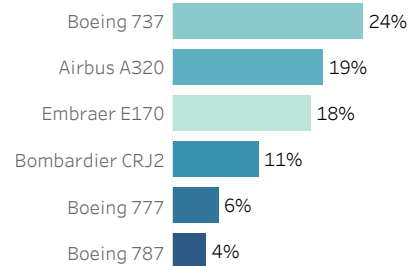
Airlines with the Most Operations



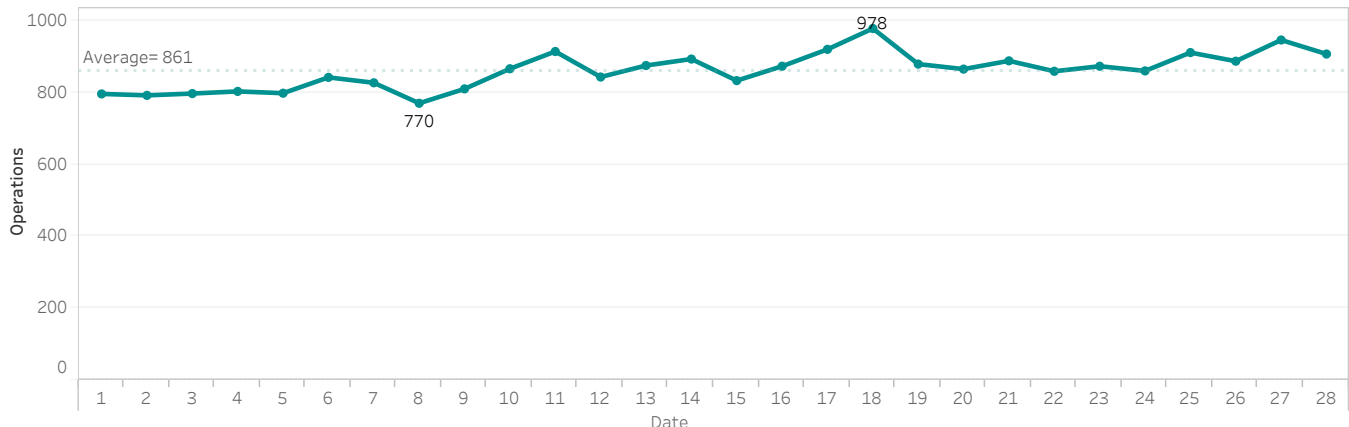
Non Airline



Most Utilized Aircraft Types



Daily Aircraft Operations



# Runway Usage and Nighttime Operations

Leftmost Runway Utilization table shows percent of runway usage for arrivals and departures by runway based on air carrier operations using jet, regional jet, and turboprop aircraft. Late Night Preferential Runway Use table depicts departure runway usage between 1am - 6am for jet aircraft for the whole month (top) and during nighttime hours only (bottom). Percentages [%] are rounded to the nearest whole number.

## Runway Utilization

	Arrivals	Departures
01 L/R		84% 9,348
10 L/R		0% 19
28 L/R	100% 11,126	16% 1,773

## Late Night Preferential Runway Use (1 am - 6 am)

	Departures
10 L/R	7% 16
01 L/R	58% 139
28 L/R	36% 86

## Runway Utilization

Arrivals	
28L	28R
48%	52%
Night (10pm-7am)	
25%	75%

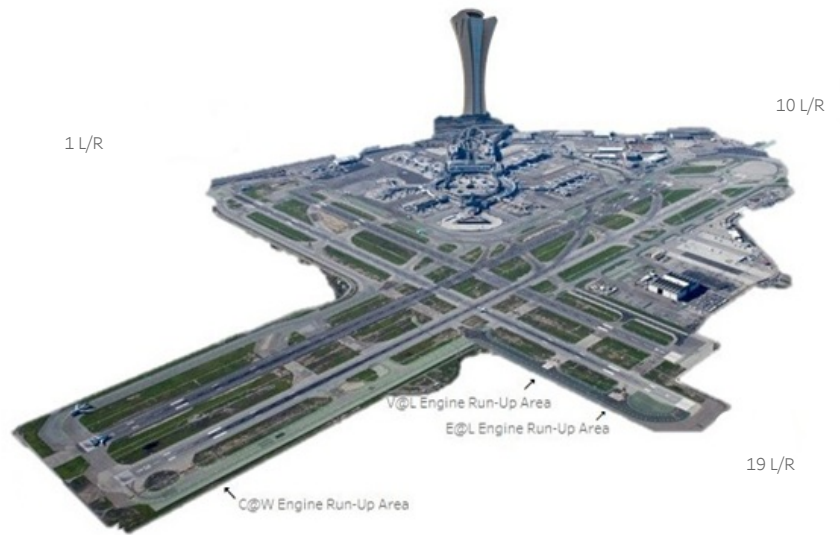
## Nighttime Power Run-Ups

10pm-7am

Alaska Airlines	1
American Airlines	7
United Airlines	5

A power runup is a procedure used to test an aircraft engine after maintenance is completed. This is done to ensure safe operating standards prior to returning the aircraft to service. The Aircraft power settings range from idle to full power and may vary in duration.

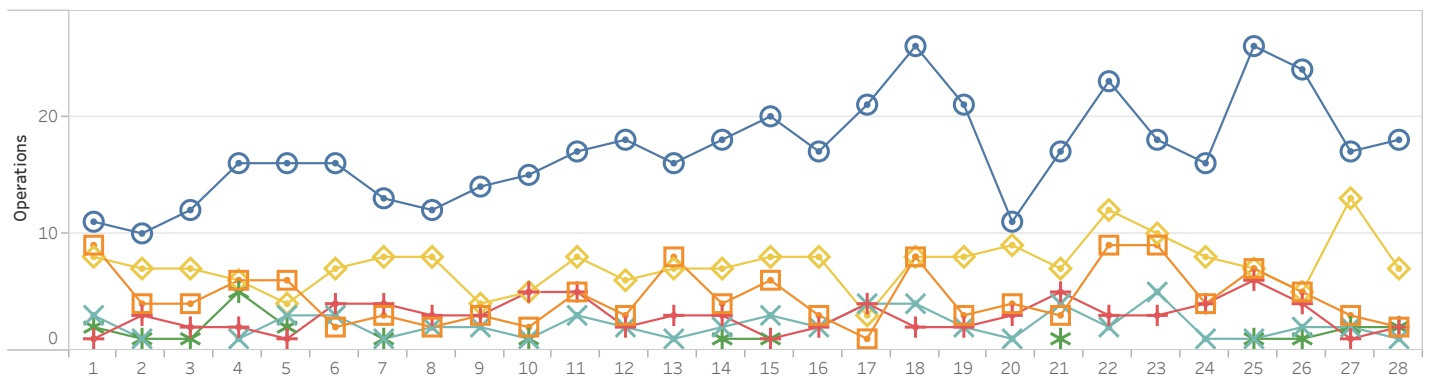
Designated Power Runup locations are 19 L/R depicted on the airfield map (right) with airlines nighttime power runup counts shown above.



28 L/R

## Hourly Nighttime Operations

○ 12 AM    □ 1 AM    + 2 AM    × 3 AM    \* 4 AM    ◇ 5 AM



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
12 AM	11	10	12	16	16	16	13	12	14	15	17	18	16	18	20	17	21	26	21	11	17	23	18	16	26	24	17	18
1 AM	9	4	4	6	6	2	3	2	3	2	5	3	8	4	6	3	1	8	3	4	3	9	9	4	7	5	3	2
2 AM	1	3	2	2	1	4	4	3	3	5	5	2	3	3	1	2	4	2	2	3	5	3	3	4	6	4	1	2
3 AM	3	1		1	3	3	1	2	2	1	3	2	1	2	3	2	4	4	2	1	4	2	5	1	1	2	2	1
4 AM	2	1	1	5	2		1			1				1	1						1				1	1	2	2
5 AM	8	7	7	6	4	7	8	8	4	5	8	6	7	7	8	8	3	8	8	9	7	12	10	8	7	5	13	7



# Noise Reports

February 2022

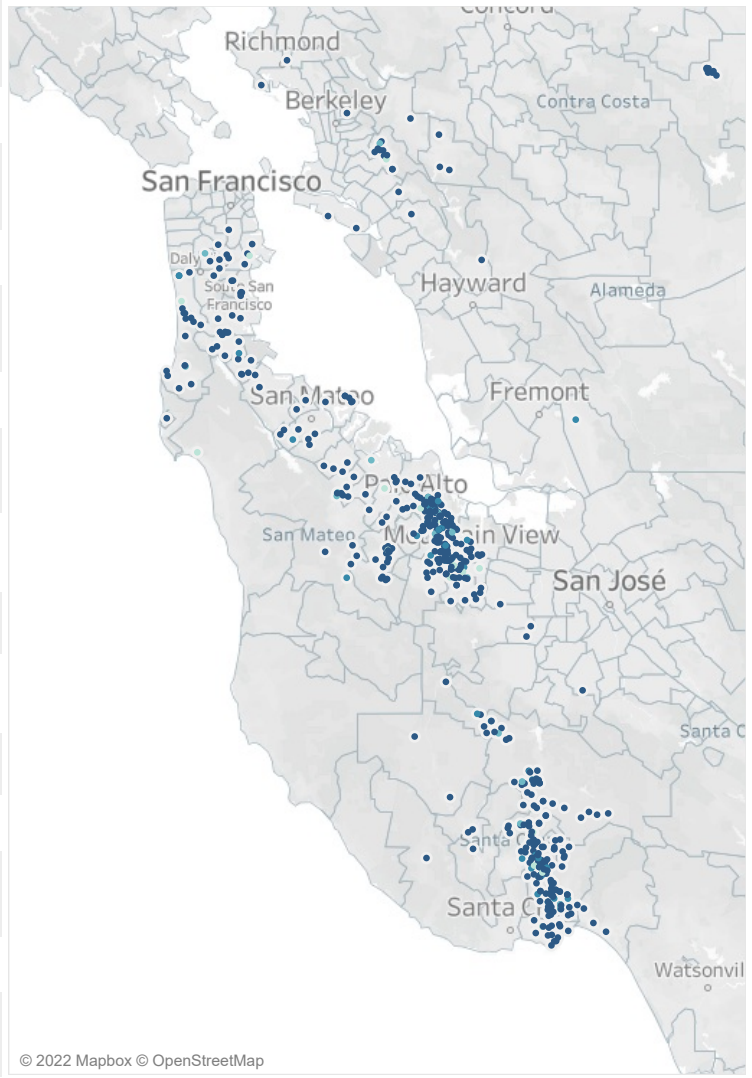
Noise Reporters / Noise Reports

Atherton	2	12
Belmont	2	2
Brisbane	6	317
Burlingame	2	2
Daly City	7	1,408
El Granada	1	762
Foster City	5	25
Menlo Park	12	1,701
Millbrae	5	14
Montara	1	211
Pacifica	12	769
Portola Valley	19	13,735
Redwood City	6	1,085
San Bruno	5	507
San Carlos	4	67
San Francisco	12	2,530
San Mateo	8	672
South San Francisco	10	64
Woodside	7	1,247
Alameda	2	13
Aptos	3	21
Ben Lomond	2	6
Berkeley	1	180
Boulder Creek	2	9
Brentwood	10	12
Capitola	3	29
Carmel Valley	1	18
Castro Valley	1	29
Cupertino	1	138
East Palo Alto	1	5
Emerald Hills	4	870
Felton	2	84
Fremont	1	319
Los Altos	57	8,083
Los Altos Hills	11	937
Los Gatos	42	5,233
Moraga	3	209
Mountain View	17	2,120
Oakland	13	2,895
Orinda	1	3
Palo Alto	102	19,542
Richmond	2	130
San Jose	1	1
Santa Cruz	70	8,770
Scotts Valley	38	3,920
Soquel	37	3,441
Stanford	3	529
Sunnyvale	1	1
Watsonville	1	85
<b>Grand Total</b>	<b>559</b>	<b>82,762</b>

Reporters Annual AVG

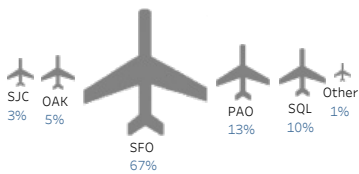
661
Reports Annual AVG
109,885
New Reporters
20
Furthest Report
85 miles
New Reporters Top City
Brentwood
Reports per SFO Operation
3
Top Aircraft Types
A320
B737
E75L
Top Flight Numbers
KAL214
TAI560
AAL2630

Noise Reporters Location Map



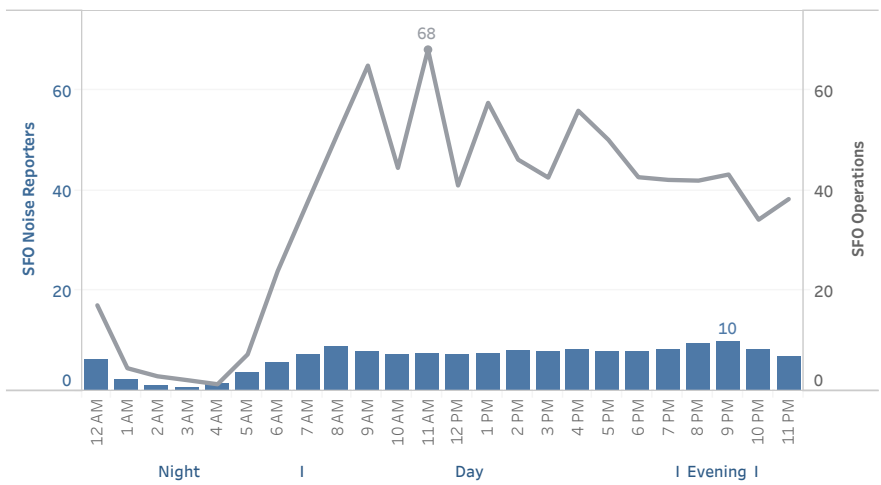
Notes: Address validation Relies on USPS-provided ZIP Code look up table and USPS-specified default city values.

## Noise Reports by Airport



99% of noise reports correlate to a flight origin/destination airport.

## Hourly Noise Reporters (Average Day in a Month)



Source: SFO Intl Airport Noise Monitoring System



## **SFO Airport/Community Roundtable**

Meeting No. 335 Minutes

Wednesday, February 2, 2022

### **Call to Order / Roll Call / Declaration of a Quorum Present**

Roundtable Chairperson, Ricardo Ortiz, called the Regular Meeting of the SFO Airport/Community Roundtable to order, at approximately 7:00 p.m., via teleconference. Interim Roundtable Coordinator, Doreen Stockdale called the roll. A quorum (at least 13 Regular Members) was present as follows:

#### REGULAR MEMBERS PRESENT

Ivar Satero – City and County of San Francisco Airport Commission  
Dave Pine – County of San Mateo Board of Supervisors  
Carol Ford – C/CAG Airport Land Use Committee (ALUC) (*joined after roll call*)  
Bill Widmer – Town of Atherton  
Tom McCune – City of Belmont (*joined after roll call*)  
Terry O’Connell – City of Brisbane  
Ricardo Ortiz – City of Burlingame  
John Goodwin – Town of Colma  
Sam Hindi – City of Foster City  
Christine Krolik – Town of Hillsborough  
Cecilia Taylor -- City of Menlo Park  
Ann Schneider – City of Millbrae  
Mike O’Neill – City of Pacifica  
Jeff Gee – City of Redwood City  
Tom Hamilton – City of San Bruno  
Mark Addiego – City of South San Francisco  
John Carvell – Town of Woodside

#### REGULAR MEMBERS ABSENT

City and County of San Francisco Board of Supervisors  
City and County of San Francisco Mayor’s Office  
City of Daly City  
City of Half Moon Bay  
Town of Portola Valley  
City of San Carlos  
City of San Mateo

#### ROUNDTABLE STAFF

Doreen Stockdale – Interim Roundtable Coordinator  
Timothy Middleton – Roundtable Technical Consultant (HMMH)  
Lisa Aozasa – County of San Mateo, Planning & Building, Deputy Director  
Angela Montes Cardenas – Roundtable Administrative Secretary  
Janneth Lujan – County of San Mateo, Planning and Building Executive Secretary

#### ADDITIONAL ATTENDEE’S PRESENT

Lauren Carroll – County of San Mateo, Deputy County Counsel  
Linda Wolin – Senior Legislative Aide to Supervisor Dave Pine  
Lauren Chung – Legislative Aide to Supervisor Ahsha Safai  
Kathleen Wentworth – Senior Advisor to Congresswoman Jackie Speier  
Brian Perkins – Senior Policy Advisor to Congresswoman Jackie Speier

SAN FRANCISCO INTERNATIONAL AIRPORT STAFF

Bert Ganoung – Noise Office Manager

FAA STAFF

Faviola Garcia – Supervisory Senior Advisor

Joseph Bert – Operations Support Group

Alana Jaress – Community Engagement Officer

**Public Comments for Items NOT on the Agenda**

Chairman Ortiz opened public comments.

Mark Shull from Palo Alto

Marie-Jo Fremont from Palo Alto

Rebecca Ward from Palo Alto

Kathleen Wentworth from Congresswoman Speier's office noted that she is retiring. She said it has been great seven years with the Roundtable and she is hopeful for future progress from the Roundtable. She noted that Brian Perkins, Senior Policy Advisor, will now be representing the office of Congresswoman Speier at the Roundtable. She thanked members and the FAA, SFO and constituents in the community.

Chairman Ortiz, Vice Chair Hindi and members Krolik, Schneider, O'Neill, Addiego, Hamilton, Pine & O'Connell all wished Ms. Wentworth well and thanked her for her contribution and expertise.

**Action to set Agenda and to Approve Consent Items 1-3 (00:19:30)**

Chairman Ortiz open and closed public comments for consent items, no comments were received.

Member Schneider, asked to correct minutes on page 20 her comment about Colma, impacted by GAP departures.

ACTION: Ann Schneider **MOVED** to set agenda and to approve consent items 1-3, with corrected minutes page 20 that Colma is impacted by GAP departures. The motion was seconded by Mike O'Neill and **CARRIED**, roll call vote passed.

**4. Elections of Roundtable Chairperson for Calendar Year 2022 (00:23:35)**

ACTION: Ricardo Ortiz **MOVED** to nominate Sam Hindi to Chairperson for 2022. The motion was seconded by Christine Krolik and **CARRIED**, roll call vote passed.

Member Ortiz shared his sentiments over the work that has been done at the Roundtable. He thanked subcommittee Chairs for their work. He said he enjoyed his two years as Chair.

Chairman Hindi, Member Addiego, O'Connell, and Widmer thanked Mr. Ortiz for his work as Chair.

Faviola Garcia acknowledged Mr. Ortiz for all the hard work and collaboration with FAA and looks forward to working with Mr. Hindi.

Chairman Hindi open and closed public comments for item 4, no comments were received.

Chairman Hindi stated he looks forward to working with SFO and FAA to have a productive year.

**5. Elections of Roundtable Vice-Chairperson for Calendar Year 2022 (00:33:23)**

Chairman Hindi read a letter on behalf of Member Royse. The letter stated Mr. Royse's interest in serving as Vice Chairman.

Chairman Hindi open and closed public comments for item 5, no comments were received.

ACTION: Sam Hindi **MOVED** to nominate Al Royse to Vice Chairperson for 2022. The motion was seconded by Ann Schneider and **CARRIED**, roll call vote passed.

**6. Approval of Resolution 22-02: Designating Regular Roundtable Meeting Dates, Time and Place for Calendar Year 2022 (Minute 00:37:45)**

Chairman Hindi summarized the memo dated January 26 included in the meeting packet.

Chairman Hindi open and closed public comments for item 6, no comments were received.

In response to member Schneider's comment on subcommittees, Ms. Stockdale clarified that dates provided are based on what staff can accommodate but assigning a specific subcommittee to a specific date is at the discretion of the Chairperson.

ACTION: Terry O'Connell **MOVED** to approve item 6, approval of resolution no. 22-02. The motion was seconded by Ricardo Ortiz and **CARRIED**, roll call vote passed.

**7. Subcommittee Assignments/Meeting Frequency (Minute 00:42:12)**

Chairman Hindi summarized the table included in page 32 of the meeting packet. He noted that subcommittee meetings are opened to all members. He said that due to AB 361 and the subcommittee needing to approve resolution to continue remote meetings, staff advised to assign 3 members to each subcommittee to ensure subcommittee quorum.

Chairman Hindi noted that most of the work is done at the subcommittee level and urged all members to participate.

Member Schneider noted that in order for the Ground-Based Noise Subcommittee to be productive, it must meet more than twice per year.

Chairman Hindi requested volunteers, and the following assignments were made:

**a. Ground-Based Noise**

Chairperson: Ann Schneider

Members: Al Royse, Tom Hamilton

**b. Legislative**

Chairperson: Al Royse

Members: Ann Schneider, (staff will confirm with Pamela DiGiovanni if she wants to remain on subcommittee)

**c. Technical Working Group**

Chairperson: Sam Hindi

Members: Ricardo Ortiz, Terry O'Connell, (Ann Schneider & Bill Widmer non-voting)

**d. Work Plan**

Chairperson: Sam Hindi

Members: Ann Schneider, Terry O'Connell

Chairman Hindi open public comment for items 7a-d.

Darlene Yaplee from Palo Alto

Mark Shull from Palo Alto

Chairman Hindi closed public comments for items 7a-d.

Chairman Hindi clarified that all members are fully encouraged to participate in the subcommittee and the assignment is due to the need for quorum to pass a resolution.

ACTION: Tom Hamilton **MOVED** to approve item 7a-d, subcommittee assignments and meeting frequency. The motion was seconded by Ann Schneider and **CARRIED**, roll call vote passed.

**8. HMMH Contract Amendment for Roundtable Coordinator** (Minute 00:58:35)

Lisa Aozasa, County of San Mateo Planning and Building Deputy Director summarized the memo dated January 26, 2022 included in the agenda packet page 37. She noted that the department does not currently have a Planner III to step into the Roundtable Coordinator position therefore it has been arranged that HMMH will provide Coordinator services in addition to Technical Consultant. She was pleased to welcome Doreen Stockdale to the Roundtable team. She said that Linda Wolin from Supervisor Pine's office will continue to support Roundtable staff.

Member Ford said she was delighted to see Doreen join the Roundtable staff.

**9. FPPC Determination Update** (Minute 01:01:39)

Lauren Carroll, County of San Mateo Deputy County Counsel, summarized the memo dated January 26, 2022 included in the agenda packet page 50. The memo summarizes the determination by the Fair Political Practices Commission (FPPC) that the Roundtable is subject to the Political Reform Act. She noted that all members should direct their questions to their city attorney as she was not representing the Roundtable but rather the County of San Mateo. She shared an anticipated schedule for compliance.

She clarified that the Roundtable members should expect to submit Form 700 to cover their work on the Roundtable in the fall.

Member McCune said that he previously tried to file and was told he could not file as an individual because there was no agency ethics official. Ms. Carroll clarified that he most likely encountered that problem because the FPPC does not have a Conflict of Interest Code on file for the Roundtable, and that will be solved with this process.

**10. Chairman's Update** (Minutes 01:08:21)

Chairman Hindi noted that new members will be receiving new member packets once all assignments are confirmed by cities. He said that staff will also bring more information soon on Noise 101 workshop.

## **11. Subcommittee Updates**

### **a. Technical Working Group (01:09:30)**

Subcommittee Chairperson Ricardo Ortiz summarized the TWG meeting held on January 18. [Meeting may be viewed here.](#) He summarized the main topic discussed, Ground-Based Augmentation System (GBAS) procedures. He noted that the conversation was tabled until subcommittee gets more results from test flights.

Regarding NIITE/HUSSH, he introduced Joseph Bert from FAA who gave an overview of the departure procedure. (Mr. Bert's presentation begins at minute 01:11:30). He gave a verbal presentation and shared slides on NIITE/HUSSH overview. He summarized the amount of work and collaboration that took place. He noted what was concluded for NIITE/HUSSH to GOBBS.

Mr. Bert said the procedure would be implemented within 90 days after the Roundtable approves the proposal. He also noted what it may take to agree on the new proposal and alternative proposal. He highlighted that the current proposal will remain in place even after pre-pandemic numbers and new and alternative proposals are uncertain if they may be maintained after return to pre-pandemic flights.

In response to Member Ortiz's question Mr. Ganoung and Mr. Bert noted the altitudes on procedures.

Chairman Hindi noted that this determination originated from the Select Committee in 2015 and is a long time coming.

In response to Member Schneider, Ms. Wentworth attempted to explain that a number of departures from OAK will come over the vicinity of SFO (southbound). Member Schneider said with new procedure it will help avoid flying over community.

Member O'Neill noted that the altitudes cited are at sea-level. He asked if it is possible to support the current proposal as well as the new and alternative proposals. Member Ortiz said that it's been agreed to approve current proposal with the caveat to move toward the new proposal. Mr. Bert confirmed that is the FAA's understanding as well.

Member O'Connell noted that though they know these are not perfect options, the current proposal gives hope to getting additional relief. She hopes to be able to work with partners on trying to expand operation hours.

Chairman Hindi noted that the idea to give relief to the community as soon as possible is provided by the current proposal, all while the FAA starts to work on the new proposal.

Member Ortiz noted that if the membership wishes to move forward, a special meeting would be needed to vote on the decision. Chairman Hindi and Member Hamilton voiced their support.

Ms. Stockdale noted that to coordinate the special meeting staff will send a doodle for membership availability.

### **b. Ground-Based Noise (01:37:11)**

Subcommittee Chairperson Schneider gave a summary of the January 13, 2022 GBN meeting. [The meeting may be viewed here.](#) She summarized the HMMH GBN study from 2021. She briefly spoke on AEDT, ANEEM, need for discussion on A & C weighted measurements, and noted that some agenda items were tabled because there was not enough time to complete the discussion.

She added that the City of Millbrae will begin having community meetings with residents to keep them updated on the impact of noise.

Chairman Hindi opened public comment for items 11a-b.

Mark Shull from Palo Alto  
Liz Lopez from San Francisco  
Peter Grace from Brisbane  
Jennifer from Sunnyvale  
Rebecca Ward from Palo Alto

Chairman Hindi closed public comment for items 11a-b.

## **12. SFO Airport Director's Report (Minute 01:54:55)**

Airport Director, Ivar Satero, began his report by sharing that the officer involved shooting at SFO is under investigation. He thanked TSA and others working on this.

He summarized what is happening with 5G implementation at SFO. He updated the membership on traffic at the airport. He said though COVID testing is not happening as much, the airport continues to be a vaccination site. He noted the various airlines' resumption of service. He added that SFO will be adding new service airlines and will announce soon once confirmed.

Mr. Satero said that for GBAS, they are doing extra work to redesign an antenna system that has caused a delay in the Commissioning. He acknowledged the comments regarding GBAS procedures, and assured the Roundtable that noise shifting procedures will not be implemented.

In response to Member Schneider's question on 5G, Mr. Satero said they are doing outreach to understand AT&T & Verizon's plans and will keep the community posted.

Mr. Ganoung gave a verbal presentation on Noise Office updates. He reiterated the GBAS update and shared a slide with Group1 innovative GLS approaches. (02:02:12) He noted that SFO continues to seek approval on the 14 innovative approach procedures' Community Flight Procedure Packets (CFPP). He noted that, working with United Airlines and the FAA, they have been able to execute 13 approaches. He summarized what this resulted in.

He said that for Fly Quiet the reports are in the process of being uploaded, and the plan is to combine that with the Roundtable's 40<sup>th</sup> anniversary in-person celebration.

In response to Member Schneider's question, Mr. Ganoung noted that for the Fly Quiet awards decrease in low frequency noise was not part of the program.

In response to Chairman Hindi, Mr. Ganoung noted that the data for the innovative approach procedures has been posted and may be viewed on [noise.flysfo.com](http://noise.flysfo.com).

**13. Report from HMMH on Title 21 -2019 – Current (Minute 02:06:39)**

Timothy Middleton gave a verbal presentation to the membership on behalf of Eugene Reindel, HMMH. He summarized the Title 21 reporting requirements, historical quarterly reports and future quarterly reports.

Member O’Connell questioned if the Roundtable was still legally responsible for providing past due Title 21 reports. She also noted that these Title 21 reports may be helpful for data comparison. Mr. Middleton confirmed that the Roundtable is not required to review historical data, but rather agree to review Title 21 data reports going forward. Mr. Ganoung added that Mr. Reindel and SFO spoke to Caltrans, and that their determination was also what Mr. Middleton addressed. Mr. Ganoung also noted that the data was given to the Roundtable for the time period of 2009-2016.

In response to Member Schneider question, Mr. Middleton addressed what “zero impact area” means.

Based on Mr. Middleton’s presentation, it was clarified that the County did not make the determination to not review SFO historical Title 21 data reports, but rather that was former staff of the Roundtable. It was agreed that staff will follow up on Title 21 requirements.

**14. Member Communications/Announcements (Minute 02:21:03)**

None

**Public Comments on Presentation Items 8-14 (Minute 02:21:20)**

Darlene Yaplee from Palo Alto

Peter Grace from Brisbane

Jennifer from Sunnyvale

Per Chairman’s request Mr. Ganoung and Mr. Bert responded to Ms. Yaplee’s and Jennifer’s public comment.

**15. Adjourn**

Chairman Hindi adjourned the meeting at approximately 9:30 p.m.

*Roundtable action minutes are considered draft until approved by the Roundtable at a regular meeting. A video recording of this meeting is available on the Roundtable’s website.*



April 1, 2022

**TO:** Roundtable membership and interested parties

**FROM:** Doreen Stockdale, Interim Roundtable Coordinator

**SUBJECT:** Resolution to make findings allowing continued remote meetings under Brown Act

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**RECOMMENDATION:**

Adopt a resolution finding that, as a result of the continuing COVID-19 pandemic state of emergency declared by Governor Newsom, meeting in-person would present imminent risks to the health or safety of attendees.

**BACKGROUND:**

On June 11, 2021, Governor Newsom issued Executive Order N-08-21, which rescinded his prior Executive Order N-29-20 and which waived, through September 30, 2021, certain provisions of the Brown Act relating to teleconferences/remote meetings. The Executive Order waived, among other things, the provisions of the Brown Act that otherwise required the physical presence of members of a local agency or other personnel in a particular location as a condition of participation or as a quorum for a public meeting. These waivers set forth in the Executive Order were to expire on October 1, 2021.

On September 16, 2021, the Governor signed Assembly Bill (AB) 361, a bill that codifies certain teleconference procedures that local agencies have adopted in response to the Governor's Brown Act-related Executive Orders. Specifically, AB 361 allows a local agency to continue to use teleconferencing under the same basic rules as provided in the Executive Orders under certain prescribed circumstances or when certain findings have been made and adopted by the local agency.

In order to continue to hold video and teleconference meetings, the membership will need to review and make findings every 30 days or thereafter that the state of emergency continues to directly impact the ability of the members to meet safely in person and that state or local officials continue to impose or recommend measures to promote social distancing. If the membership does continue to hold video and teleconference meetings, to meet the requirements of AB 361, the membership will need to adopt a resolution at every meeting.

The San Mateo County Board of Supervisors has adopted a resolution to continue remote meetings and encouraged other local agencies to make similar findings.



The membership previously found, and it remains the case, that public meetings pose high risks for COVID-19 spread for several reasons. These meetings may bring together people from throughout a geographic region, increasing the opportunity for COVID-19 transmission. Further, the open nature of public meetings makes it difficult to enforce compliance with vaccination, physical distancing, masking, cough and sneeze etiquette, or other safety measures. Moreover, some of the safety measures used by private businesses to control these risks may be less effective for public agencies.

These factors continue to combine and directly impact the ability of members of the Roundtable to meet safely in person and to make in-person public meetings imminently risky to health and safety.

As noted above, under AB 361, local agency bodies were required to return to in-person meetings on October 1, 2021, unless they chose to continue with fully teleconferenced meetings and made the prescribed findings related to the existing state of emergency. At its meeting of December 1, 2021, the membership adopted a resolution wherein the membership found, among other things, that as a result of the continuing COVID-19 state of emergency, meeting in-person would present imminent risks to the health or safety of attendees.

The February 2, 2022 resolution also directed staff to bring an item to the membership prior to its next meeting to consider making the findings required by AB 361 in order to continue meeting under its provisions.

**DISCUSSION:**

Because local rates of transmission of COVID-19 are still in the “substantial” tier as measured by the Centers for Disease Control, we recommend that your Board or Commission avail itself of the provisions of AB 361 allowing continuation of online meetings by adopting findings to the effect that conducting in-person meetings would present an imminent risk to the health and safety of attendees. A resolution to that effect and directing staff to return each 30 days with the opportunity to renew such findings, is attached hereto.

**FISCAL IMPACT:**

None

## RESOLUTION NO. 22-03

### RESOLUTION FINDING THAT, AS A RESULT OF THE CONTINUING COVID-19 PANDEMIC STATE OF EMERGENCY DECLARED BY GOVERNOR NEWSOM, MEETING IN PERSON FOR MEETINGS OF THE SAN FRANCISCO INTERNATIONAL AIRPORT/COMMUNITY ROUNDTABLE WOULD PRESENT IMMINENT RISKS TO THE HEALTH OR SAFETY OF ATTENDEES

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RESOLVED, by the San Francisco Airport Community Roundtable that

**WHEREAS**, on March 4, 2020, the Governor proclaimed pursuant to his authority under the California Emergency Services Act, California Government Code section 8625, that a state of emergency exists with regard to a novel coronavirus (a disease now known as COVID-19); and

**WHEREAS**, on June 4, 2021, the Governor clarified that the “reopening” of California on June 15, 2021 did not include any change to the proclaimed state of emergency or the powers exercised thereunder, and as of the date of this Resolution, neither the Governor nor the Legislature have exercised their respective powers pursuant to California Government Code section 8629 to lift the state of emergency either by proclamation or by concurrent resolution in the state Legislature; and

**WHEREAS**, on March 17, 2020, Governor Newsom issued Executive Order N-29-20 that suspended the teleconferencing rules set forth in the California Open Meeting law, Government Code section 54950 et seq. (the “Brown Act”), provided certain requirements were met and followed; and

**WHEREAS**, on September 16, 2021, Governor Newsom signed AB 361 that provides that a legislative body subject to the Brown Act may continue to meet without

fully complying with the teleconferencing rules in the Brown Act provided the legislative body determines that meeting in person would present imminent risks to the health or safety of attendees, and further requires that certain findings be made by the legislative body every thirty (30) days or when meeting next; and,

**WHEREAS**, the San Francisco International Airport/Community Roundtable has an important interest in protecting the health and safety of attendees, and welfare of those who participate in its meetings; and

**WHEREAS**, at its meeting February 2, 2022, the San Francisco Airport/Community Roundtable adopted, by unanimous vote, a resolution wherein the membership found, *inter alia*, that as a result of the continuing COVID-19 state of emergency, meeting in person would present imminent risks to the health or safety of attendees; and

**WHEREAS**, The San Francisco Airport/Community Roundtable has not met since its special meeting in February 10, 2022; and

**WHEREAS**, the membership has reconsidered the circumstances of the state of emergency and finds that the state of emergency continues to impact the ability of members of the Roundtable to meet in person because there is a continuing threat of COVID-19 to the community, and because membership meetings have characteristics that give rise to risks to health and safety of meeting participants (such as the increased mixing associated with bringing people together from across the community); and

**WHEREAS**, in the interest of public health and safety, as affected by the emergency caused by the spread of COVID-19, the membership deems it necessary to

find that meeting in-person would present imminent risks to the health and safety of attendees, and thus intends to invoke the provisions of AB 361 related to teleconferencing;

**NOW, THEREFORE, IT IS HEREBY DETERMINED AND ORDERED** that

1. The recitals set forth above are true and correct.
2. The Roundtable finds that meeting in person would present imminent risks to the health or safety of attendees.
3. Staff is directed to return no later than thirty (30) days after the adoption of this resolution or at their next regular meeting with an item for the Technical Working Group of the Roundtable to consider making the findings required by AB 361 in order to continue meeting under its provisions.
4. Staff is directed to take such other necessary or appropriate actions to implement the intent and purposes of this resolution.

\* \* \* \* \*

Adopted at the Regular meeting of \_\_\_\_\_.

\_\_\_\_\_  
Chairperson

\_\_\_\_\_  
Date

# Review of Proposed GLS Innovative Approach Procedures at SFO

April 2022



# Outline

- HMMH Reviews:
  - Nine (9) proposed GLS Innovative Approach Procedures
  - SFO noise measurement report results
- Conclusions
- Summary

*NOTE: This presentation provides HMMH review summary of the SFO analysis, data, and noise measurement report.*



# GLS Innovative Approach Procedures

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- HMMH reviewed nine (9) proposed GLS Innovative Approach Procedures at SFO
  - Group A: DBAYY Runway 28R (1)
  - Group B: Bridge Visual and Tipp Toe Visual (4)
  - Group C: GLS-R (2)
  - Group E: GLS-A Runway 10L/R (2)
- Purpose of review
  - Affirm the Airport's assertions regarding changes to noise
  - Identify potential procedural changes that could provide further noise reductions
  - Advise Roundtable on procedure acceptance



# GLS Procedure Review Methodology

- Conducted a basic review using
  - GBAS Innovative Approach Procedure documentation from Airport website
  - Satellite imagery and estimated population centers
  - Aviation sectional charts and instrument procedure charts
  - Additional documentation from Airport
- Noise may shift when flight paths move laterally, so this review included assessments of lateral shifts as proposed in the procedures.
- We did not conduct a rigorous technical review nor an analysis of aircraft performance characteristics or procedures.
- This review focused on the possible change in single-event noise levels from aircraft on the proposed procedures as compared to the existing procedures.

Generally, changes to single-event noise levels are perceptible to the ear as follows:

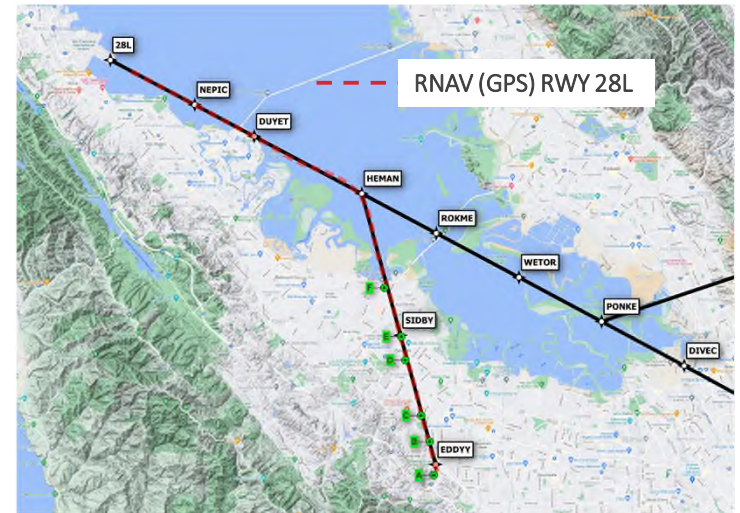
- < 1 dB: not perceptible
- 1 – 3 dB: barely noticeable
- 3 – 5 dB: noticeable
- > 5 dB: very noticeable; usually experienced as twice as loud or half as loud
- HMMH considers changes of < 1 dB as no perceptible change.





# SFO Measurement Report Overview – Test Flights (13)

- Test flights occurred December 2, 2021 and December 16, 2021
  - United Airlines Boeing 737 MAX 8 aircraft (without passengers)
    - ✓ Four RNAV approaches
    - ✓ Four GLS approaches (one of four unsuccessful)
    - ✓ Five non-GLS approaches (not included in table)
      - Current approach procedure



Approach #	Date & Time	Procedure	Flaps over Site E	Speed Brakes over Site E	Landing Gear over Site E
1	12/2/2022 @ 6:40 pm	RNAV (GPS) RWY 28L	0	Deployed	Up
2	12/2/2022 @ 6:57 pm	GLS-A RWY 28L	0	Stowed	Up
3	12/2/2022 @ 7:19 pm	RNAV (GPS) Z RWY 28R	5	Deployed	Up
4	12/2/2022 @ 7:38 pm	GLS-A RWY 28R	0	Stowed	Up
5	12/16/2022 @ 6:35 am	RNAV (RNP) Y RWY 28R	1	Stowed	Up
6	12/16/2022 @ 6:53 am	RNAV (GPS) RWY 28L	15	Deployed to Stowed	Up to Down
7	12/16/2022 @ 7:10 am	GLS-R RWY 28R	0	Stowed	Up
8	12/16/2021 @ 7:28 am	GLS-A RWY 28L	0 to 1	Stowed to Deployed	Up

Note: Approach #8 not considered a successful GLS-A approach.



## Purpose

This report describes the noise and flight evaluation methodology, criteria, and results for the measurement period between December 2 and December 16, 2021.

*The report shows a comparison of the measured noise levels produced by non-GLS approaches to those produced by GLS Innovative Approaches.*



# Conclusions from Noise Measurements of Procedures

- United Airlines completed 12 successful approaches
  - 5 non-GLS approaches
  - 4 RNAV approaches
  - 3 GLS approaches
- RNAV approaches 1 to 5 dB quieter, on average, than non-GLS approaches
- GLS approaches 4 to 7 dB quieter, on average, than non-GLS approaches
- While not statistically valid with the small sample size, the GBAS approaches, as predicted, were measured quieter than the standard approaches flown today



# Summary

- HMMH agrees with Airport's conclusions regarding expected changes to noise as a result of the proposed Innovative GLS Approach Procedures
- We suggest the Roundtable support the Airport's implementation of the following GBAS procedures:
  - Group A: DBAYY Runway 28R (1)
  - Group B: Bridge Visual and Tipp Toe Visual (4)
  - Group C: GLS-R (2)
  - Group E: GLS-A Runway 10L/R (2)

*Note: Only Group E: GLS-A Runway 10L/R procedures result in a noticeable change in single event noise levels. However, the Airport expects the use of the procedures to reduce missed approaches, which increases safety and reduces cumulative noise.*





April 6, 2022

Rico E. Medina  
City of San Bruno Mayor  
567 El Camino Real  
San Bruno, CA 94066

Re: Tanforan Redevelopment Plan

Dear Mayor Medina:

At the request of the San Francisco International Airport, the SFO Airport/Community Roundtable (SFORT) was asked to review proposals for the redevelopment plan at the Tanforan site. The SFORT is in its 40th year of providing community noise reduction recommendations related to aircraft and airport operations from the San Francisco International Airport (SFO) to airport management, FAA staff, and airline representatives. The Roundtable Membership consists of 24 appointed and elected officials from the City and County of San Francisco, the County of San Mateo, and most cities in San Mateo County representing nearly 2,000,000 people. The City of San Bruno has been a member since the Roundtable's founding in 1981.

While it is not the purview of the Roundtable to engage in land use decisions, we did want to let you know that some of the current redevelopment proposals for the site include a housing component that would fall within the 70 dB CNEL contour for SFO. A CNEL contour is computed using the FAA-approved Aviation Environmental Design Tool (AEDT), which calculates the aircraft noise exposure near an airport. According to the FAA, 65 dB CNEL is the threshold for significant aircraft noise exposure, and the housing component will be exposed to even higher levels of noise within the 70 dB. We also would suggest that the City require any developer to use state-of-the-art technology and building materials that might lessen the noise impacts for residents.

Please let me know if you have any questions. Thank you.

Regards,

Sam Hindi, City of Foster City  
Roundtable Chairperson



April 1, 2022

TO: Members, SFO Airport Community Roundtable (SFORT)

FROM: Lisa Aozasa, Deputy Director, County Planning and Building Department

SUBJECT: Title 21 Quarterly Noise Reports Update

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**RECOMMENDATION:**

Receive an update on the status of compliance with Title 21 Quarterly Noise Report requirements and provide comments, questions and feedback to San Francisco Airport Community Roundtable (SFORT) Staff.

**BACKGROUND:**

At the SFORT's regular meeting on February 2, 2022, the SFORT's aviation technical consultant, Harris Miller Miller Hanson (HMMH), provided an update on the status of compliance with Title 21 Quarterly Noise Report requirements. This memorandum provides updated information and responds to questions from Members on this topic.

Current Quarterly Noise Report Procedures -- In accordance with the California Code of Regulations, Title 21, San Francisco International Airport (SFO) has agreed to submit noise reports to SFORT Staff within 45 days after the end of each calendar quarter. HMMH then reviews the reports to confirm that the report components required by Section 5025 of Title 21 are included in the reports. SFORT Staff then transmits the Quarterly Reports to the Caltrans Division of Aeronautics (Caltrans) within 75 days of the end of each calendar quarter, in compliance with Title 21 requirements. Once submitted to Caltrans, the reports are available on SFO's website. A review of the reports is also provided to SFORT Membership and the public via the regular meeting agenda packet.

Historical Quarterly Noise Reports -- Quarterly Noise Reports for past years are available on SFO's website. For the years 2009 to 2016, Quarterly Noise Reports are not currently available, although the noise monitoring data needed to prepare the reports was compiled and is available.

**DISCUSSION:**

Clarification of San Mateo County's Role in Title 21 Compliance – Title 21 requires the county in which certain airports are located to submit Quarterly Noise Reports to Caltrans. Because of the unique jurisdictional relationship between the County of San Mateo (County) and SFO, the County meets its obligations under Title 21 through its membership in the SFORT, and its employment/management of SFORT staff and technical consultants. There is no other County Department or personnel well suited to complete this task, so SFORT Staff/consultants carry it out as described above under Current Quarterly Noise Report Procedures.

Adjustment to Current Procedure – Starting in the second quarter of 2022, SFORT Staff will work with HMMH to develop a Quarterly Noise Report check list so that SFORT Staff can review the Quarterly Noise Reports to ensure required components are included, consulting with HMMH only if questions or irregularities arise. This will save the SFORT money and reserve additional funds in the budget for consultant assistance on other tasks where aviation technical expertise and assistance is more urgently needed. Again, once submitted to Caltrans, the Quarterly Reports will be available to the public on SFO’s website and in the SFORT’s regular meeting packet.

Update on Availability of Historical Quarterly Noise Reports for Years 2009 to 2016 – The SFO Aircraft Noise Office Manager has informed SFORT Staff that these reports will be prepared and made available to the SFORT and the public. The estimated timeframe to complete and publish the reports is Fall 2022.

**FISCAL IMPACT:**

The adjustment to the current Quarterly Noise Report Procedure described above will save the SFORT approximately \$3400 per year.

**ATTACHMENTS:**

None



# Meeting Announcement

## Technical Working Group

**Friday, March 18, 2022**  
**3:00 p.m. – 4:30 p.m.**

**\*BY VIDEO CONFERENCE ONLY\***

Please click the link below to join the webinar:

<https://smcgov.zoom.us/j/97095497033>

Or Dial-in:

US: +1(669)900-6833 Webinar ID: 970 9549 7033

Note: To arrange an accommodation under the Americans with Disabilities Act to participate in this public meeting, please call (650) 363-4220 at least 2 days before the meeting date.

\*\*Please see instructions for written and spoken comments at the end of this agenda.

### AGENDA

#### Call to Order

#### Public Comment on Items NOT on the Agenda

### CONSENT AGENDA

#### 1. Action to Set Agenda and Approve Consent Agenda

#### 2. Brown Act Remote Meetings Resolution (5-min)

Attachments: Memo and Resolution of Approval

### REGULAR AGENDA

#### 3. Tanforan San Bruno Development

Sam Hindi, Chairperson

#### 4. Ground-Based Augmentation System Update

Eugene Reindel, Roundtable Technical Consultant, HMMH

#### 5. FAA NIITE/HUSSH Update

Alana Jaress, Community Engagement Officer, FAA

### \*\*Instructions for Public Comment during Videoconference Meeting

During videoconference of the Technical Working Group subcommittee meeting, members of the public may address the Roundtable as follows:

#### Written Comments:



## Technical Working Group

March 18, 2022

Page 2 of 2

Written public comments may be emailed in advance of the meeting. Please read the following instructions carefully:

1. Your written comment should be emailed to [amontescardenas@smcgov.org](mailto:amontescardenas@smcgov.org).
2. Your email should include the specific agenda item on which you are commenting.
3. Members of the public are limited to one comment per agenda item.
4. The length of the emailed comment should be commensurate with two minutes customarily allowed for verbal comments, which is approximately 250-300 words.
5. If your emailed comment is received by 12:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

### **Spoken Comments:**

Spoken public comments will be accepted during the meeting through Zoom. Please read the following instructions carefully:

1. The March 18, 2022 Technical Working Group meeting may be accessed through Zoom online at <https://smcgov.zoom.us/j/97095497033>. The meeting ID: 970 9549 7033. The meeting may also be accessed via telephone by dialing in +1-669-900-6833, entering meeting ID: 970 9549 7033, then press #.
2. You may download the Zoom client or connect to the meeting using the internet browser. If you are using your browser, make sure you are using current, up-to-date browser: Chrome 30+, Firefox 27+, Microsoft Edge 12+, Safari 7+. Certain functionality may be disabled in older browsers including Internet Explorer.
3. You will be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
4. When the Roundtable Chairperson calls for the item on which you wish you speak click on "raise-hand" icon. You will then be called on and unmuted to speak.
5. When called, please limit your remarks to the time limit allotted.



# Meeting Announcement

## Ground-Based Noise Committee

**Thursday, March 8, 2022**  
**12:00 p.m. – 1:30 p.m.**

**\*BY VIDEO CONFERENCE ONLY\***

Please click the link below to join the webinar:

<https://smcgov.zoom.us/j/93404696648>

Or Dial-in:

US: +1(669)900-6833 Webinar ID: 934 0469 6648

Note: To arrange an accommodation under the Americans with Disabilities Act to participate in this public meeting, please call (650) 363-4220 at least 2 days before the meeting date.

### **PUBLIC PARTICIPATION:**

Written public comments can be emailed to [amontescardenas@smcgov.org](mailto:amontescardenas@smcgov.org), and should include the specific agenda item to which you are commenting. Spoken public comments will also be accepted during the meeting through Zoom on Public Comment on Items Not on the Agenda, and after each Agenda item.

### **AGENDA**

#### **Call to Order**

#### **Public Comment on Items NOT on the Agenda**

### **CONSENT AGENDA**

1. **Brown Act Remote Meetings Resolution**  
Attachment(s): Memo and Resolution of Approval

### **AGENDA ITEMS**

2. **Ground-Based Noise Report – Next Steps**
3. **Noise Metrics Discussion**
  - a. **Airport policy on use of auxiliary power unit at gates and taxi operations.**
  - b. **Airport and other ground equipment transition from diesel to airport wide electrification.**
  - c. **Review Director’s Report for possible changes towards data that assists in quantifying low-frequency noise**
    - i. Attachment: Airport Directors Reports – January 2022
4. **Future Discussion Items**
  - a. **Work Plan 2022-2023**

Working together for quieter skies 

**b. Discussion of environmental mitigation historically implemented by SFO on GBN and mitigation for current and future operations.**

**Information Only**

**a. Airport Commission Meeting Minutes – January 18, 2022**

**\*\*Instructions for Public Comment During Video Conference Meeting**

During videoconference of the Ground-Based Noise subcommittee meeting, members of the public may address the Roundtable as follows:

**Written Comments:**

Written public comments may be emailed in advance of the meeting. Please read the following instructions carefully:

1. Your written comment should be emailed to [amontescardenas@smcgov.org](mailto:amontescardenas@smcgov.org).
2. Your email should include the specific agenda item on which you are commenting.
3. Members of the public are limited to one comment per agenda item.
4. The length of the emailed comment should be commensurate with two minutes customarily allowed for verbal comments, which is approximately 250-300 words.
5. If your emailed comment is received by 3:00 pm on the day before the meeting, it will be provided to the Roundtable and made publicly available on the agenda website under the specific item to which comment pertains. The Roundtable will make every effort to read emails received after that time but cannot guarantee such emails will be read during the meeting, although such emails will still be included in the administrative record.

**Spoken Comments:**

Spoken public comments will be accepted during the meeting through Zoom. Please read the following instructions carefully:

1. The March 8, 2022, Ground-Based Noise Subcommittee meeting may be accessed through Zoom online at <https://smcgov.zoom.us/j/93404696648>.  
The meeting ID: 974 6601 0883. The meeting may also be accessed via telephone by dialing in +1-669-900-6833, entering meeting ID: 934 0468 6648, then press #.
2. You may download the Zoom client or connect to the meeting using the internet browser. If you are using your browser, make sure you are using current, up-to-date browser: Chrome 30+, Firefox 27+, Microsoft Edge 12+, Safari 7+. Certain functionality may be disabled in older browsers including Internet Explorer.
3. You will be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
4. When the Roundtable Chairperson calls for the item on which you wish you speak click on "raise-hand" icon. You will then be called on and unmuted to speak.
5. When called, please limit your remarks to the time limit allotted.



# **X Noise News**

March 2022

Prepared for the SFO Airport/Community Roundtable

## **FAA Seeks Comments on Draft Update to Agency’s Part 150 Advisory Circular**

The FAA requested members of the aviation industry and the public to comment on a draft update to its guidance for evaluating noise and land use around airports. These comments were required to be submitted by February 25.

The circular provides airports with guidance on how to conduct an airport noise and land use compatibility study to meet the requirements of Federal Aviation Regulation 14 CFR Part 150 on Airport Noise Compatibility planning.

The draft update of the FAA Advisory Circular 150/5020-1 on Noise Control and Compatibility Planning for Airports focuses on three areas,

- Providing current information regarding relevant FAA orders, policies, and regulations
- Outlining information and requirements needed to complete noise exposure maps and noise compatibility plans near airports
- Explaining the benefits and limitations of noise monitoring

Source: Airport Noise Report, FAA.gov

## **X-59 Quiet SST Ground Testing**

Through 2021, NASA achieved significant milestones in the assembly of their X-59 Quiet

## *What's Inside*

**FAA Seeks Comments on Draft Update to Agency’s Part 150 Advisory Circular ..... 1**

**X-59 Quiet SuperSonic Technology Ground Testing..... 1**

**Bill To Create Pilot Program to Provide Grants For Advanced Air Mobility Infrastructure..... 2**

**Study Finds Aircraft Noise Reduction During Covid Lockdown Benefited Heart Health ..... 2**

**New and Emerging Technology..... 3**

Wisk to Advance Certified Self-Flying Electric Air Taxi..... 3

Joby Increases Flight Test Capacity..... 3

**NASA Seeks Comments on Planned Test of Human Response to Urban Air Mobility Vehicle Noise ..... 3**

**City of Malibu Petitions FAA to Promote Regulations to Reduce Impacts As a Result of Metroplex Redesign ..... 4**

**Other Noise News ..... 4**

SuperSonic Technology (SST) aircraft. The X-59 is now set to start 2022 with critical ground testing.

The ground testing will be conducted in Texas to ensure the aircraft can withstand the loads and stresses that typically occur during flight. During this time the NASA team will also calibrate and test the fuel systems. These tests are critical to ensure the X-59 can begin community testing starting in 2024.



Figure 1. X-59 aircraft prepared for transport

Source: Airport Noise Report, NASA.gov

## Bill To Create Pilot Program to Provide Grants For AAM Infrastructure

Representative Rick Larsen introduced legislation that would require the Secretary of Transportation to create a pilot program providing grants to support the planning and development of infrastructure to support Advanced Air mobility (AAM) operations.

This bill, H.R. 6270 *Advanced Aviation Infrastructure Modernization Act*, would authorize \$12.5 million for FY2022 and FY2023 to be appropriated for AAM infrastructure planning and development grants, which cannot exceed \$1 million each.

The legislation would require entities receiving grants to submit to the Secretary of Transportation comprehensive plans that may include

- Descriptions of potential environmental effects of planned construction or siting of public-use vertiports, including efforts to reduce the adverse effects of potential aviation noise

- Identify the process an eligible entity will undertake to ensure an adequate level of community engagement for planned public-use vertiport location and planned or anticipated AAM operations.

The National Business Aviation Association released a statement on December 17, 2021 supporting the bill. In the statement released, the NBAA said it “welcomed the introduction in the U.S. House of Representatives of a bill to facilitate the expansion of advanced air mobility infrastructure, an industry poised to revolutionize sustainable air transportation.”

Source: Airport Noise Report, Congress.gov, NBAA.org

## Study Finds Aircraft Noise Reduction During Covid Lockdown Benefited Heart Health

A study published in February 2022 in the peer-reviewed journal *Hypertension* found that individuals that suffered from increased hypertension and accelerated arterial stiffening from long-term aircraft noise exposure, may have had a reduction in those effects due to short-term aircraft noise reduction during COVID-19 lockdowns.

An earlier study conducted in 2015 by Wiktorija Wojciechowska found a significant increase in diastolic blood pressure and arterial stiffness in 74 individuals living in two suburbs of Krakow who were exposed to long-term day-evening-night aircraft levels greater than 60 dB, compared to subjects not exposed to aircraft noise. As part of a follow-up study, Wojciechowska and her team found that the reduction in aircraft noise caused by the COVID-19 lockdowns was associated with significant reductions in noise annoyance, diastolic blood pressure, and pulse wave velocity (a measure of arterial stiffness) in aircraft noise-exposed subjects. The researchers concluded, “Long-term aircraft noise exposure may increase the prevalence of hypertension and acceleration arterial stiffening. However, even short-term noise reduction, as experience during the COVID-19 lockdown, may reverse those unfavorable effects,”



The team did however add, “whether the noise reduction due to COVID-19 will have an effect on arterial hypertension epidemiology or not remains uncertain and needs further research.”

Source: Airport Noise Report, Hypertension

## New and Emerging Technology

### Wisk to Advance Certified Self-Flying Electric Air Taxi

On January 24, 2022, Wisk announced it had secured \$450 million in funding from The Boeing Company. This investment will further advance the development of Wisk’s 6<sup>th</sup> generation eVTOL aircraft, a first-ever candidate for certification of an autonomous, all-electric, passenger-carrying aircraft in the U.S.

Wisk intends to operate one of the industry’s largest fleets of AAM eVTOL aircraft. Wisk anticipates close to 14 million annual flights all with zero emissions within five years following the certification of its 6<sup>th</sup> generation aircraft.

Paired with previous funding, this new investment will advance the company’s Go-to-Market and near-term expansion plans, including the launch of scale manufacturing.



Figure 2. Wisk eVTOL aircraft

Source: Wisk

### Joby Increases Flight Test Capacity

Joby Aviation Inc. received FAA Special Airworthiness Certification and US Air Force Airworthiness Approval for a second pre-production

prototype aircraft. Joby has stated that this second aircraft will allow them to significantly increase capacity of flight testing in 2022 to further support the Company’s ambition to certify its aircraft with the FAA in time for launch commercial operations in 2024.

JoeBen Bevirt, founder and CEO of Joby, said “Our 2021 flight test program delivered a wealth of information and experience to support our program. With two aircraft flying at the same time, we’ll be able to increase the speed of our learnings as planned, while continuing to fulfill the requirements of our Agility Prime contract.”



Figure 3. Joby’s second pre-production eVTOL aircraft prototype

Source: Joby

### NASA Seeks Comments on Planned Test of Human Response to UAM Vehicle Noise

On February 14, 2022, A notice was published in the *Federal Register* to open a new 60-day public comment period on NASA’s “Remote Psychoacoustic Test for Urban Air Mobility (UAM) Vehicle Human Response” study.

The UAM vehicle noise cooperative human response study is divided into two phases: a Feasibility Phase(Phase 1) and Phase 2. Each of these phases includes one or more psychoacoustic tests. Phase 1 is set to being in August or

September of this year, while no date has been set for Phase 2.

Comments are requested on the following:

- Whether the proposed collection of information is necessary for the proper performance of the functions of NASA, including whether the information collected has practical utility
- The accuracy of NASA's estimate of the burden of the proposed collection of information
- Ways to enhance the quality, utility, and clarity of the information to be collected
- Ways to minimize the burden of the collection of information on respondents, including automated collection techniques or the use of other forms of information technology.

Comments are due by April 15, 2022.

Source: Airport Noise Report, NASA.gov, Federal Registrar

## City of Malibu Petitions FAA to Promote Regulations to Reduce Impacts As a Result of Metroplex Redesign

The City of Malibu petitioned the FAA to promote regulations to reduce the increase in aircraft noise and emissions residents of the City experience as a result of the 2017 FAA Southern California Metroplex Project. Central to Malibu's petition is its request that FAA lower the threshold of significant noise impact in its Environmental Order from 65 dB DNL to 45 dB DNL.

The city asserts that lowering the threshold to 45 dB DNL would reflect the findings of recent research showing that aircraft noise and emissions are detrimental to the health of people living under flight paths and that aircraft noise is significantly more annoying than predicted by the FAA's current noise policy.

The City of Malibu has also requested the agency:

- Prepare a supplemental Draft Environmental Assessment for the SoCal Metroplex project based on the new 45 dB DNL threshold of significant noise impact
- Amend the FAA Aircraft Noise Screening Tools and Methodologies section of FAA Environmental Order 1050.1F, "Environmental Impacts: Policies and Procedures," to require the use of International Organization for Standardization (ISO) 1996-1 standard
- Amend Order 1050.1F to require development of Health Impact Assessments (HIA) of FAA projects that are not categorically excluded from further environmental review and require FAA to follow guidance developed by the U.S. EPA for conducting health assessments
- Create a Special Flight Rules Area over Malibu and the surrounding Santa Monica Mountains area to keep aircraft on assigned routes and above 3,000 mean sea level
- Conduct noise monitoring within the Malibu airspace and bar operation of commercial aircraft within that airspace if such aircraft generates a Single Event Noise Exposure Level (SENEL) at or above 86.6 dB at any of the noise monitoring stations

Source: Airport Noise Report, City of Malibu, Regulations.gov

## Other Noise News

- On January 11, 2022, Boom Supersonic announced it entered into a three-year strategic partnership with the U.S. Air Force valued at up to \$60 million to advance the development of Overture, a "superfactory" designed for supersonic passenger aircraft production.

Sources: Boom Supersonic

## MEMORANDUM

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**To:** SFO Community Roundtable Members and Interested Parties  
**From:** Sarah C. Yenson, Senior Consultant  
Eugene M. Reindel, Director  
**Date:** 2/17/2022  
**Subject:** Federal Aviation Administration (FAA) Instrument Flight Procedures (IFP)  
Information Gateway Review  
**Reference:** HMMH Project Number 312310

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At the request of the Roundtable, Harris Miller Miller & Hanson Inc. (HMMH) is monitoring and reviewing updates to procedures published onto the FAA's IFP Information Gateway in the regions of San Francisco International Airport (SFO), Metropolitan Oakland International Airport (OAK), and Norman Y. Mineta San Jose International Airport (SJC).

After analyzing the documents posted, HMMH determines proposed changes and the reason for the changes. The FAA IFP Information Gateway published two updates at SFO and seven updates at SJC during this cycle. Two comment periods at OAK are currently open; two more comment periods at SJC and one at SFO will have closed as of this writing. The next publication is expected on February 24, 2022.

### Important Terms and Items:

- FAA Stage Definitions
  1. FPT: Procedures are coordinated with Air Traffic, Tech Ops and Airports for feasibility, preparation, and priority (FPO)
  2. DEV: Development of the procedures
  3. FC: FAA Flight Inspection of the developed procedures
  4. PIT: Production Integration Team (TS)
  5. CHARTING: Procedures at Arnav Products Charting for publication (NACO)
- FAA Status Definitions
  1. At Flight Check: At Flight Inspection for procedure validation
  2. Awaiting Publication: At Arnav Products Charting for publication
  3. Complete: Procedure development action finished
  4. On Hold: Procedure waiting data/information to allow it to proceed/continue to next stage
  5. Pending: Procedure development work on-going
  6. Published: Procedure charted and published
  7. Under Development: Procedure is being worked on by the FAA
  8. Terminated: Procedure/project terminated
- Glossary
  - RNAV: Area Navigation
  - IAP: Instrument Approach procedure
  - STAR: Standard Terminal Arrival Route
  - SID: Standard Instrument Departure
  - GPS: Global Positioning System
  - ILS: Instrument Landing System
  - LOC: Localizer





**Updates:**

- SID MOLEN NINE DEPARTURE at SFO
  - Status changed to Published
  - Publication on January 27, 2022
- TIPP TOE VISUAL RWY 28L/R, AMDT 3 at SFO
  - Status change to Awaiting Publication
- STAR SILCN SIX (RNAV) at SJC
  - Status changed to Published
  - Publication on January 27, 2022
- SID SPTNS (RNAV) ONE at SJC
  - Status changed to Published
  - Publication on January 27, 2022
- SID TECKY (RNAV) FOUR at SJC
  - Status changed to Published
  - Publication on January 27, 2022
- STAR RAZRR FIVE (RNAV) at SJC
  - Status changed to Published
  - Publication on January 27, 2022
- RNAV (GPS) Y RWY 30L, AMDT 4A at SJC
  - Status change to Pending
- RNAV (RNP) Z RWY 12R, AMDT 3B at SJC
  - Publication date change to March 24, 2022
- RNAV (RNP) Z RWY 12L, AMDT 2B at SJC
  - Publication date change to March 24, 2022

**Open Comment Periods:**

- TIPP TOE VISUAL RWY 28L/R AMDT 3 at SFO
  - Comment period ends February 16, 2022
  - Changes
    - Relocated crossing restriction point near the San Mateo Bridge to approximately 2 miles east of prior location
    - Changed altitude restriction near San Mateo Bridge to at or above 1,500 ft MSL from 1,800 ft MSL
    - Relocated crossing restriction point near cement plant approximately 0.3 miles east of prior location
    - Changed altitude restriction near cement plant to at or above 2,300 ft MSL from 2,500 ft MSL
    - Changed the DME source used to identify the crossing restriction points to the SFO VOR/DME from the SFO ILS DME
  - Concerns can be submitted via [https://www.faa.gov/air\\_traffic/flight\\_info/aeronav/aero\\_data/Aeronautical\\_Inquiries/?details=SFO%20\(%20KSFO\)%20SAN%20FRANCISCO%20INTL,%20SAN%20FRANCISCO,%20CA%20-%20TIPP%20TOE%20VISUAL%20RWY%2028L/R%20AMDT%203&procedureName=TIPP%20](https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical_Inquiries/?details=SFO%20(%20KSFO)%20SAN%20FRANCISCO%20INTL,%20SAN%20FRANCISCO,%20CA%20-%20TIPP%20TOE%20VISUAL%20RWY%2028L/R%20AMDT%203&procedureName=TIPP%20)



[OE%20VISUAL%20RWY%2028L/R%20AMDT%203&airportCode=%20SFO&airportName=SAN%20FRANCISCO%20INTL&airportState=CA](https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical%20Inquiries/?details=SJC%20(%20KSJC)%20NORMAN%20Y%20MINETA%20SAN%20JOSE%20INTL,%20SAN%20JOSE,%20CA%20-%20RNAV%20(RNP)%20Z%20RWY%2012L%20AMDT%202B&procedureName=RNAV%20(RNP)%20Z%20RWY%2012L%20AMDT%202B&airportCode=%20SJC&airportName=NORMAN%20Y%20MINETA%20SAN%20JOSE%20INTL&airportState=CA)

- RNAV (RNP) Z RWY 12L AMDT 2B at SJC
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  - Changes
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- SID KATFH FOUR (RNAV) at OAK
  - Comment period ends February 9, 2022
  - Changes
    - Removed NTELL waypoint from NTELL transition
    - Chart NTELL as a standalone waypoint
    - Change NTELL transition name to MCOVY transition
  - Concerns can be submitted via [https://www.faa.gov/air\\_traffic/flight\\_info/aeronav/aero\\_data/Aeronautical Inquiries/?details=OAK%20\(%20KOAK\)%20METROPOLITAN%20OAKLAND%20INTL,%20OAKLAND,%20CA%20-%20SID%20KATFH%20FOUR%20\(RNAV\)&procedureName=SID%20KATFH%20FOUR%20\(RNAV\)&airportCode=%20OAK&airportName=METROPOLITAN%20OAKLAND%20INTL&airportState=CA](https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical%20Inquiries/?details=OAK%20(%20KOAK)%20METROPOLITAN%20OAKLAND%20INTL,%20OAKLAND,%20CA%20-%20SID%20KATFH%20FOUR%20(RNAV)&procedureName=SID%20KATFH%20FOUR%20(RNAV)&airportCode=%20OAK&airportName=METROPOLITAN%20OAKLAND%20INTL&airportState=CA)
- SID CNDEL SIX (RNAV) at OAK
  - Comment period ends February 9, 2022
  - Changes
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- Concerns can be submitted via  
[https://www.faa.gov/air\\_traffic/flight\\_info/aeronav/aero\\_data/Aeronautical\\_Inquiries/?details=OAK%20\(%20KOAK\)%20METROPOLITAN%20OAKLAND%20INTL,%20OAKLAND,%20CA%20-%20SID%20CNDEL%20SIX%20\(RNAV\)&procedureName=SID%20CNDEL%20SIX%20\(RNAV\)&airportCode=%20OAK&airportName=METROPOLITAN%20OAKLAND%20INTL&airportState=CA](https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical_Inquiries/?details=OAK%20(%20KOAK)%20METROPOLITAN%20OAKLAND%20INTL,%20OAKLAND,%20CA%20-%20SID%20CNDEL%20SIX%20(RNAV)&procedureName=SID%20CNDEL%20SIX%20(RNAV)&airportCode=%20OAK&airportName=METROPOLITAN%20OAKLAND%20INTL&airportState=CA)

**Next Publication:**

We expect the following updates in the February 24, 2022 publication:

- SJC
  - RNAV (RNP) Z RWY 12L, AMDT 2B
    - Currently Awaiting Publication
    - Publication Date of February 24, 2022
  - RNAV (RNP) Z RWY 12R, AMDT 3B
    - Currently Awaiting Publication
    - Publication Date of February 24, 2022



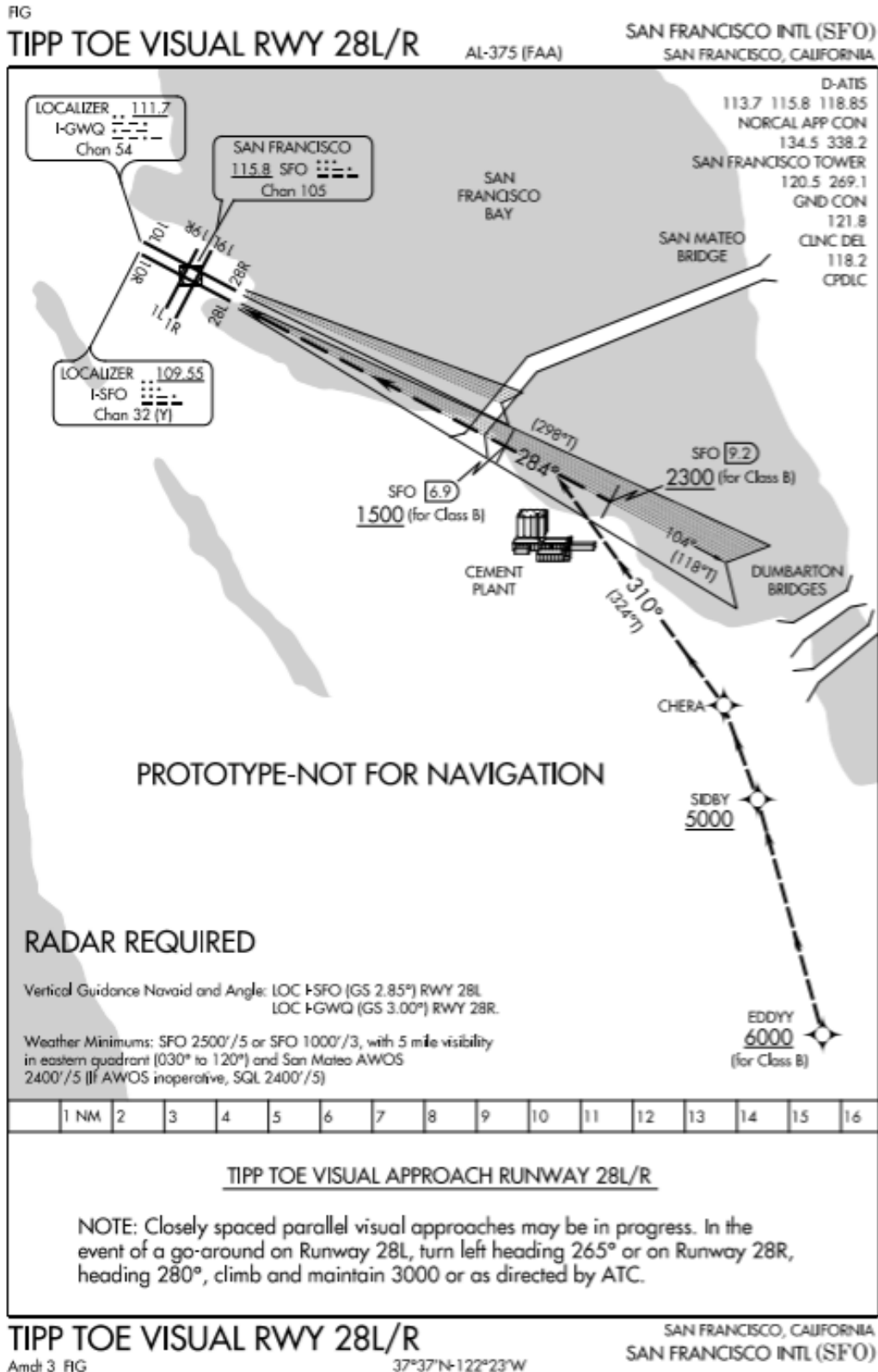
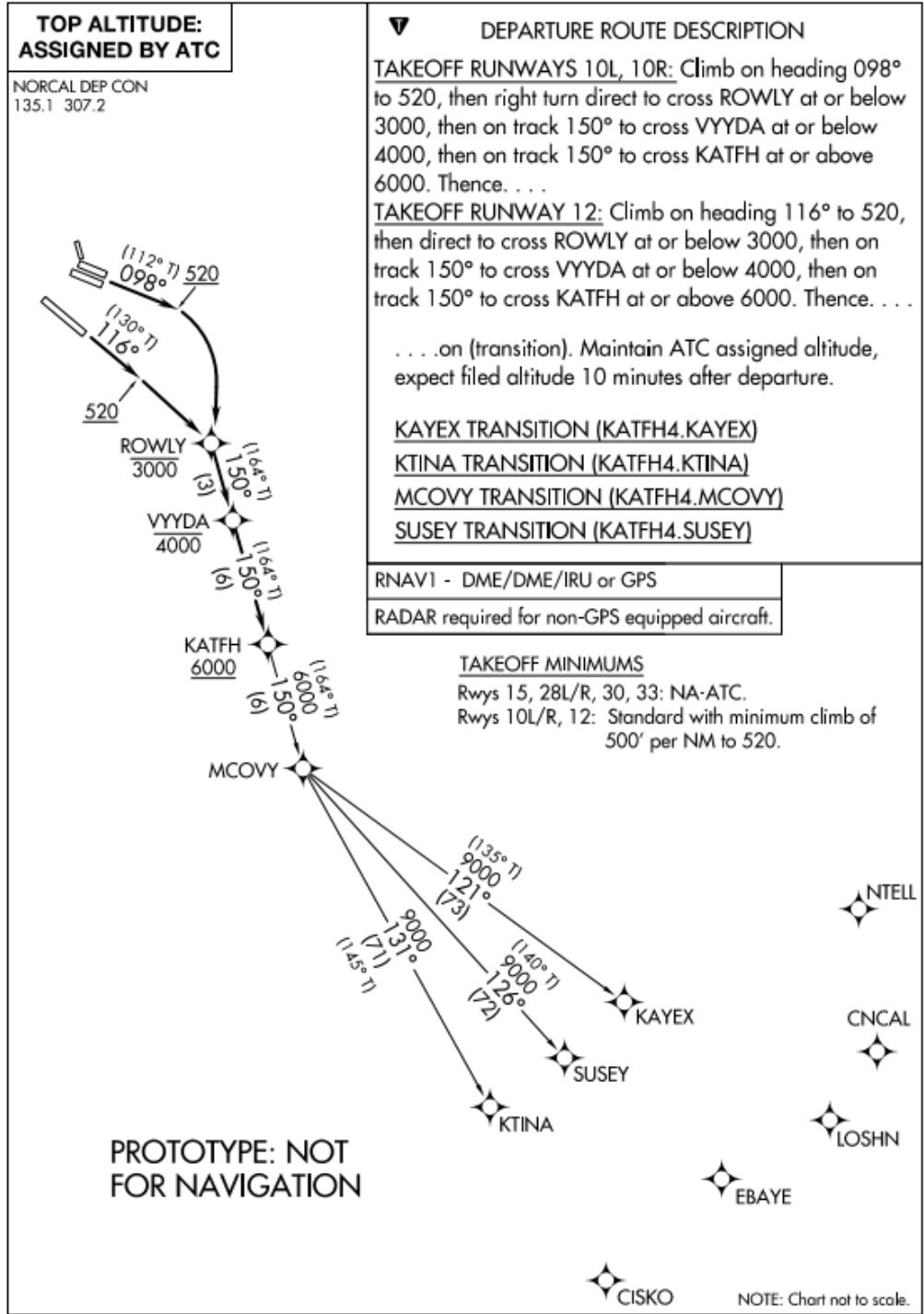


Figure 1: Proposed TIPP TOE Visual for 28L/R

Source: [https://www.faa.gov/aero\\_docs/acifp/F86A7EA188A44FE082859455DF81A887-SFO/CA\\_KSFO\\_TIPP%20TOE%20VISUAL%20RWYS%20%2028L-R\\_A3\\_S.pdf](https://www.faa.gov/aero_docs/acifp/F86A7EA188A44FE082859455DF81A887-SFO/CA_KSFO_TIPP%20TOE%20VISUAL%20RWYS%20%2028L-R_A3_S.pdf)

(KATFH4.KATFH) FIG  
**KATFH FOUR DEPARTURE (RNAV)** AL-294 (FAA) METRO OAKLAND INTL (OAK)  
OAKLAND, CALIFORNIA



**KATFH FOUR DEPARTURE (RNAV)**  
(KATFH4.KATFH) FIG OAKLAND, CALIFORNIA  
METRO OAKLAND INTL (OAK)

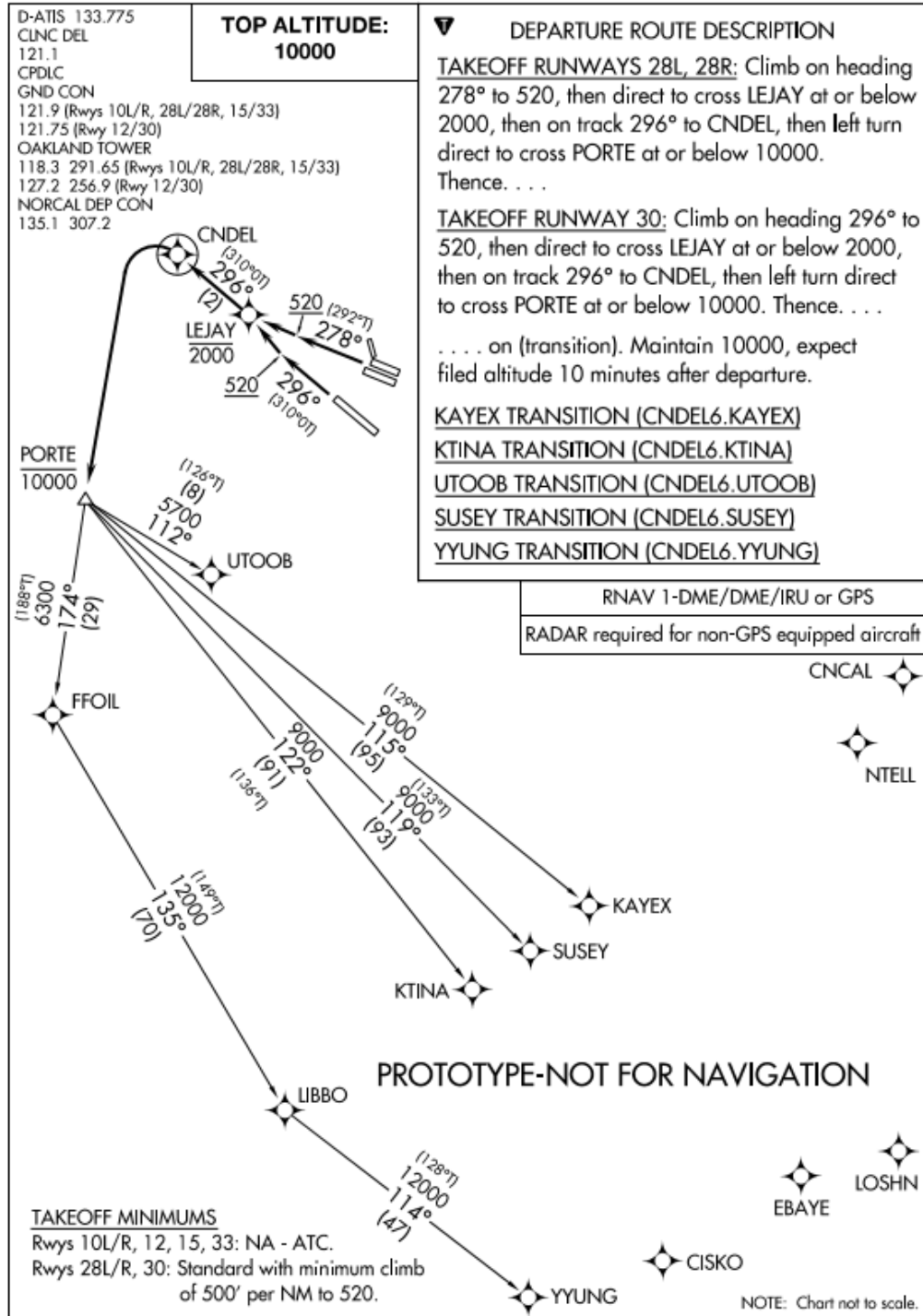
Figure 2: Proposed KATFH Four Departure at OAK

Source: [https://www.faa.gov/aero\\_docs/acifp/F03CA0138DB641ECAD89B8584EC8F63D-OAK/CA\\_KOAK\\_SID\\_KATFH%20FOUR%20RNAV\\_S.pdf](https://www.faa.gov/aero_docs/acifp/F03CA0138DB641ECAD89B8584EC8F63D-OAK/CA_KOAK_SID_KATFH%20FOUR%20RNAV_S.pdf)

(CNDEL6.CNDEL) FIG  
**CNDEL SIX DEPARTURE (RNAV)**

AL-294 (FAA)

METRO OAKLAND INTL (OAK)  
OAKLAND, CALIFORNIA



**CNDEL SIX DEPARTURE (RNAV)**  
(CNDEL6.CNDEL) FIG

OAKLAND, CALIFORNIA  
METRO OAKLAND INTL (OAK)

Figure 3: Proposed CNDEL 6 Departure at OAK

Source: [https://www.faa.gov/aero\\_docs/acifp/9B1143999380433696C1CODE6E6720D3-OAK/CA\\_KOAK\\_SID\\_CNDEL%20SIX%20RNAV\\_S.pdf](https://www.faa.gov/aero_docs/acifp/9B1143999380433696C1CODE6E6720D3-OAK/CA_KOAK_SID_CNDEL%20SIX%20RNAV_S.pdf)





## MEMORANDUM

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**To:** SFO Community Roundtable Members and Interested Parties

**From:** Sarah C. Yenson, Senior Consultant  
Eugene M. Reindel, Director

**Date:** March 10, 2022

**Subject:** Federal Aviation Administration (FAA) Instrument Flight Procedures (IFP)  
Information Gateway Review

**Reference:** HMMH Project Number 312310

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At the request of the Roundtable, Harris Miller Miller & Hanson Inc. (HMMH) is monitoring and reviewing updates to procedures published onto the FAA's IFP Information Gateway in the regions of San Francisco International Airport (SFO), Metropolitan Oakland International Airport (OAK), and Norman Y. Mineta San Jose International Airport (SJC).

After analyzing the documents posted, HMMH determines proposed changes and the reason for the changes. The FAA IFP Information Gateway published one update at SFO, one update at OAK, and four updates at SJC during this cycle. Two comment periods at OAK and two comment periods at SJC will have closed as of this writing. The next publication is expected on March 24, 2022.

### Important Terms and Items:

- FAA Stage Definitions
  1. FPT: Procedures are coordinated with Air Traffic, Tech Ops and Airports for feasibility, preparation, and priority (FPO)
  2. DEV: Development of the procedures
  3. FC: FAA Flight Inspection of the developed procedures
  4. PIT: Production Integration Team (TS)
  5. CHARTING: Procedures at Arnav Products Charting for publication (NACO)
- FAA Status Definitions
  1. At Flight Check: At Flight Inspection for procedure validation
  2. Awaiting Publication: At Arnav Products Charting for publication
  3. Complete: Procedure development action finished
  4. On Hold: Procedure waiting data/information to allow it to proceed/continue to next stage
  5. Pending: Procedure development work on-going
  6. Published: Procedure charted and published
  7. Under Development: Procedure is being worked on by the FAA
  8. Terminated: Procedure/project terminated
- Glossary
  - RNAV: Area Navigation
  - IAP: Instrument Approach procedure
  - STAR: Standard Terminal Arrival Route
  - SID: Standard Instrument Departure
  - GPS: Global Positioning System
  - ILS: Instrument Landing System
  - LOC: Localizer



**Updates:**

- SILENT THREE DEPARTURE at OAK
  - Status changed to Pending
  - Publication Date changed to July 14, 2022
  
- ILS OR LOC RWY 28R, AMDT 15B at SFO
  - Status changed to Awaiting Publication
  - Publication Date changed to May 13, 2022
  
- STAR SILCN SIX (RNAV) at SJC
  - Status changed to Awaiting Publication
  - Publication Date on January 27, 2022
  
- STAR RAZRR FIVE (RNAV) at SJC
  - Status changed to Awaiting Publication
  - Publication Date on January 27, 2022
  
- RNAV (GPS) Y RWY 30R, AMDT 4A at SJC
  - Status change to Pending
  - Publication Date of July 14, 2022
  
- SID TBD ONE ORIG at SJC
  - Status change to Pending
  - Publication Date of November 30, 2023

**Open Comment Periods:**

- SID KATFH FOUR (RNAV) at OAK
  - Comment period ends March 9, 2022
  - Changes
    - Removed NTELL waypoint from NTELL transition
    - Chart NTELL as a standalone waypoint
    - Change NTELL transition name to MCOVY transition
  - Concerns can be submitted via [https://www.faa.gov/air\\_traffic/flight\\_info/aeronav/aero\\_data/Aeronautical Inquiries/?details=OAK%20\(%20KOAK\)%20METROPOLITAN%20OAKLAND%20INTL,%20OAKLAND,%20CA%20-%20SID%20KATFH%20FOUR%20\(RNAV\)&procedureName=SID%20KATFH%20FOUR%20\(RNAV\)&airportCode=%20OAK&airportName=METROPOLITAN%20OAKLAND%20INTL&airportState=CA](https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical%20Inquiries/?details=OAK%20(%20KOAK)%20METROPOLITAN%20OAKLAND%20INTL,%20OAKLAND,%20CA%20-%20SID%20KATFH%20FOUR%20(RNAV)&procedureName=SID%20KATFH%20FOUR%20(RNAV)&airportCode=%20OAK&airportName=METROPOLITAN%20OAKLAND%20INTL&airportState=CA)



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- RNAV (RNP) Z RWY 12L AMDT 2B at SJC
  - Comment period ends March 2, 2022
  - Changes
    - Raised decision height for landing to 400 ft from 385 ft
    - Changed visibility requirement for landing
  - Concerns can be submitted via [https://www.faa.gov/air\\_traffic/flight\\_info/aeronav/aero\\_data/Aeronautical\\_Inquiries/?details=SJC%20\(%20KSJC\)%20NORMAN%20Y%20MINETA%20SAN%20JOSE%20INTL,%20SAN%20JOSE,%20CA%20-%20RNAV%20\(RNP\)%20Z%20RWY%2012L%20AMDT%202B&procedureName=RNAV%20\(RNP\)%20Z%20RWY%2012L%20AMDT%202B&airportCode=%20SJC&airportName=NORMAN%20Y%20MINETA%20SAN%20JOSE%20INTL&airportState=CA](https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Aeronautical_Inquiries/?details=SJC%20(%20KSJC)%20NORMAN%20Y%20MINETA%20SAN%20JOSE%20INTL,%20SAN%20JOSE,%20CA%20-%20RNAV%20(RNP)%20Z%20RWY%2012L%20AMDT%202B&procedureName=RNAV%20(RNP)%20Z%20RWY%2012L%20AMDT%202B&airportCode=%20SJC&airportName=NORMAN%20Y%20MINETA%20SAN%20JOSE%20INTL&airportState=CA)
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**Next Publication:**

We expect the following updates in the March 24, 2022 publication:

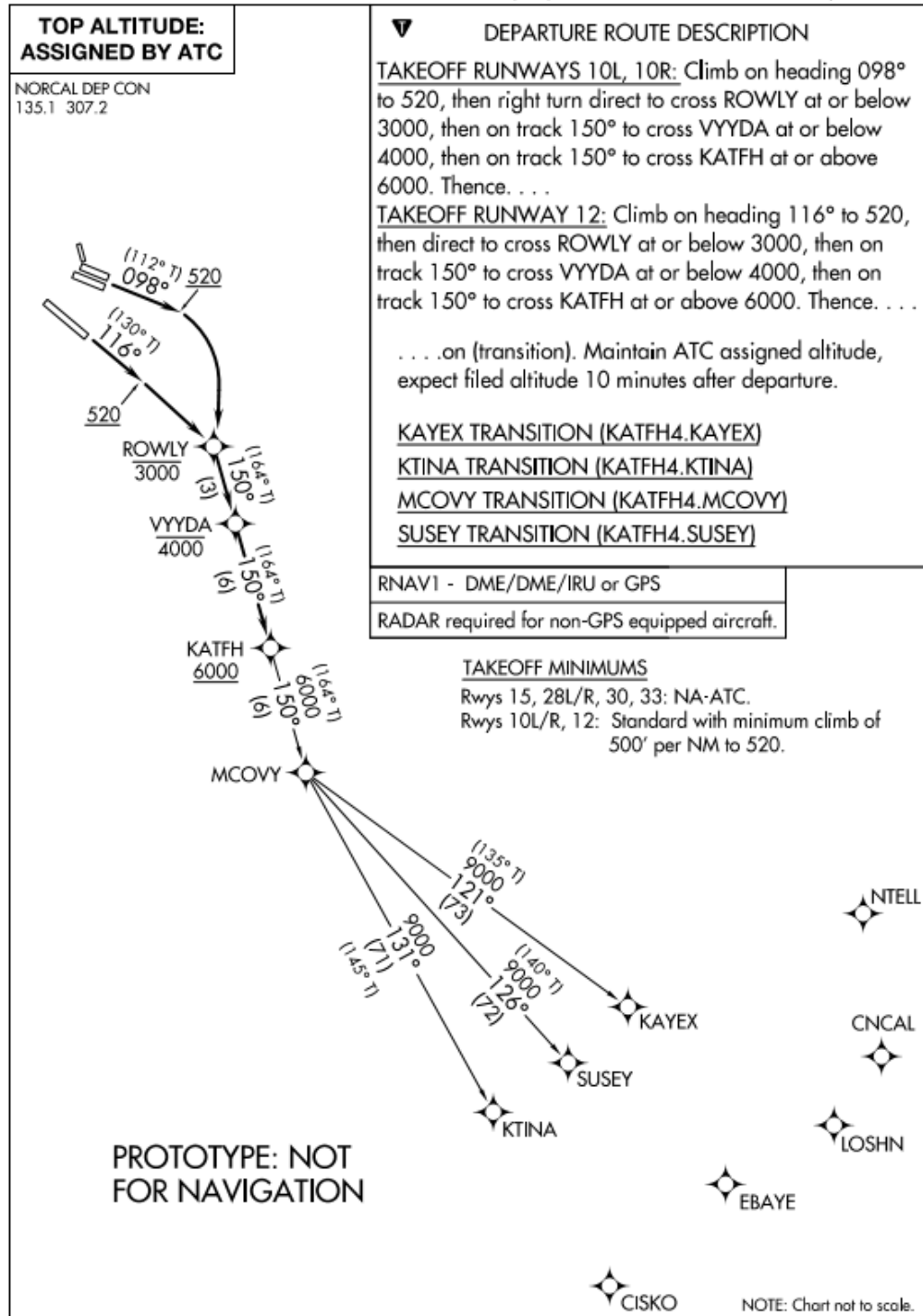
- SFO
  - TIPP TOE VISUAL RWY 28L/R AMDT 3
    - Currently Awaiting Publication
    - Publication Date of March 24, 2022
- SJC
  - RNAV (RNP) Z RWY 12L, AMDT 2B
    - Currently Awaiting Publication
    - Publication Date of March 24, 2022
  - RNAV (RNP) Z RWY 12R, AMDT 3B
    - Currently Awaiting Publication
    - Publication Date of March 24, 2022
  - STAR RAZRR FIVE (RNAV)
    - Currently Awaiting Publication
    - Publication Date of January 27, 2022
  - STAR SILCN SIX (RNAV)
    - Currently Awaiting Publication
    - Publication Date of January 27, 2022

(KATFH4.KATFH) FIG

**KATFH FOUR DEPARTURE (RNAV)**

AL-294 (FAA)

METRO OAKLAND INTL (OAK)  
 OAKLAND, CALIFORNIA



**KATFH FOUR DEPARTURE (RNAV)**

(KATFH4.KATFH) FIG

OAKLAND, CALIFORNIA  
 METRO OAKLAND INTL (OAK)

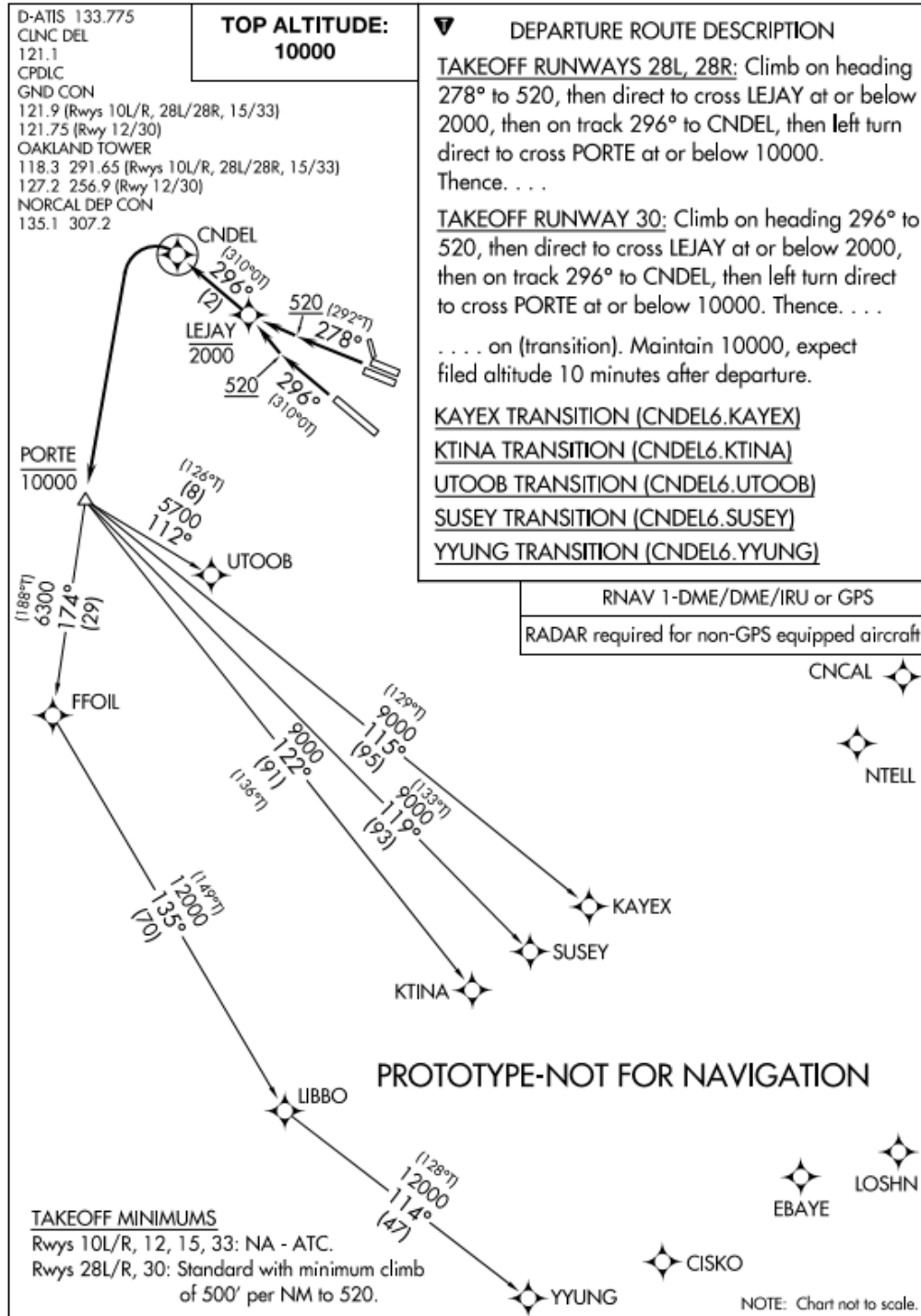
Figure 1: Proposed KATFH Four Departure at OAK

Source: [https://www.faa.gov/aero\\_docs/acifp/F03CA0138DB641ECAD89B8584EC8F63D-OAK/CA\\_KOAK\\_SID\\_KATFH%20FOUR%20RNAV\\_S.pdf](https://www.faa.gov/aero_docs/acifp/F03CA0138DB641ECAD89B8584EC8F63D-OAK/CA_KOAK_SID_KATFH%20FOUR%20RNAV_S.pdf)

(CNDEL6.CNDEL) FIG  
**CNDEL SIX DEPARTURE (RNAV)**

AL-294 (FAA)

METRO OAKLAND INTL (OAK)  
 OAKLAND, CALIFORNIA



**CNDEL SIX DEPARTURE (RNAV)**  
 (CNDEL6.CNDEL) FIG

OAKLAND, CALIFORNIA  
 METRO OAKLAND INTL (OAK)

Figure 2: Proposed CNDEL 6 Departure at OAK  
 Source: [https://www.faa.gov/aero\\_docs/acifp/9B1143999380433696C1C0DE6E6720D3-OAK/CA\\_KOAK\\_SID\\_CNDEL%20SIX%20RNAV\\_S.pdf](https://www.faa.gov/aero_docs/acifp/9B1143999380433696C1C0DE6E6720D3-OAK/CA_KOAK_SID_CNDEL%20SIX%20RNAV_S.pdf)

Q3 ACTUALS FOR FY21-22

A	SOURCES	2021-2022	
		BUDGET	ACTUAL
	<b>Revenue</b>		
	San Francisco Airport Commission	\$220,000	\$ 110,000
	Roundtable Membership	\$40,500	\$ 41,500
	<i>In Kind Contributions from Millbrae</i>		
	Total Revenue	\$260,500	\$ 151,500
	Fund Balance	\$390,699	\$ 224,400
	<b>Total Sources</b>	<b>\$651,199</b>	<b>\$ 375,900</b>

B	EXPENSES	BUDGET	
		BUDGET	ACTUAL
	County of San Mateo Coordination Services	\$143,719	\$ 83,451
	Roundtable Aviation Technical Consultant	\$90,000	\$ 76,052
		<b>\$233,719</b>	<b>\$ 159,503</b>

ADMINISTRATION / OPERATIONS	BUDGET	
Meeting Room * In-Kind Millbrae		
Postage / Printing	\$0	
Website	\$1,800	\$ 146
Data Storage & Conference Services	\$900	
Miscellaneous Office Expenses/Equipment	\$1,500	
Video Services	\$4,000	\$ 2,190
	<b>\$8,200</b>	<b>\$ 2,336</b>

PROJECTS, PROGRAMS, & OTHER	BUDGET	
Noise Conferences Attendance, Coordinator	\$1,500	
Noise Conferences Attendance, Members	\$2,000	
TRACON Field Trip(s)	\$750	
Airport Noise Report subscription	\$850	\$ 850
N.O.I.S.E. Membership	\$4,300	
Fly Quiet Awards	\$300	
Special Study		
	<b>\$9,700</b>	<b>\$ 850</b>

CONTINGENCY FUND	BUDGET	
Reserve	\$40,000	
	<b>\$40,000</b>	<b>\$ -</b>

EXPENSES SUBTOTAL	BUDGET	
	<b>\$291,619</b>	<b>\$ 162,689</b>

UNCOMMITTED FUNDS / YEAR END BALANCE	PROJECTED	
	<b>\$359,580</b>	<b>\$ 213,212</b>



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Western-Pacific Region  
Office of the Regional Administrator

777 S. Aviation Blvd. Suite 150  
El Segundo, CA 90245

February 11, 2022

Mr. Sam Hindi  
Chairperson  
San Francisco International Airport/Community Roundtable  
455 County Center, 2nd Floor  
Redwood City, CA 94063

Dear Mr. Hindi:

The Federal Aviation Administration (FAA) would like to address several items related to the Select Committee's proposed NIITE/HUSSH departure procedure in relation to the San Francisco International Airport (SFO)/Community Roundtable's (Roundtable) Special Meeting scheduled on Feb. 10, 2022.

As a follow up to our attendance in the Feb. 10, 2022, Roundtable, we are providing this letter to further communicate the next steps for your upcoming request to the FAA. As mentioned previously, the FAA is asking that you submit your request in writing and clearly state what action(s) you are seeking from us concerning the proposed NIITE/HUSSH procedure.

In anticipation of your request that the FAA implement the proposed procedure from 1:00 a.m. to 5:00 a.m., as we have previously committed, the FAA will conduct a review of the data six months after implementation to determine if any adjustments are required or feasible. We also understand that you may be requesting another option that expands the times from 12:30 a.m. to 5:45 a.m., while implementing the 1:00 a.m. to 5:00 a.m. procedure. We want to reiterate that the study of the expansion of hours will be a lengthy process and that the volume of traffic will be a significant factor in the study.

As we understand, the Roundtable will formally request that FAA implement an option outside of the 1:00 a.m. to 5:00 a.m. option, this is a reminder that implementation will not be possible until the SFO authority re-convenes the stakeholder group that worked through the 1:00 a.m. to 5:00 a.m. option. The group includes, but is not limited to, Oakland International Airport, affected airlines, air traffic control, and other FAA organizations determined by SFO and the FAA. Additionally, it is important to note that the stakeholders must confirm that data support the expansion and agree to the expanded hours outside of 1:00 a.m. to 5:00 a.m.

The FAA's mission is to provide the safest, most efficient aerospace system in the world. Thank you for your partnership on this important matter, as we continually strive to improve the safety and efficiency of flight in this country. If we can be of further assistance, please contact my office at (424) 405-7000.

Sincerely,

A handwritten signature in black ink, appearing to read "Raquel Girvin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Raquel Girvin  
Regional Administrator

cc:  
SFO Airport  
Congresswoman Speier

JACKIE SPEIER  
14TH DISTRICT, CALIFORNIA

2465 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-0514  
(202) 225-3531  
FAX: (202) 226-4183

155 BOVET ROAD, SUITE 780  
SAN MATEO, CA 94402  
(650) 342-0300  
FAX: (650) 375-8270

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WWW.TWITTER.COM/REPSPEIER

Congress of the United States  
House of Representatives  
Washington, DC 20515-0514

COMMITTEE ON ARMED SERVICES  
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February 15, 2022

Mr. Ivar Satero  
Airport Director  
San Francisco International Airport  
780 S. Airport Blvd.  
San Francisco, CA 94128

Dear Mr. Satero, FAA, airlines, and others:

Thank you, Mr. Satero, for voting at the SFO Roundtable meeting for the NIITE/HUSSH southbound transition solution for flights departing from 1 a.m. to 5 a.m., and for work to begin on the extended hours of 12:30 a.m. to 5:45 a.m. I understand that you will be meeting with the FAA and other stakeholders, including Oakland International and airlines, concerning the extended hours. First, I want to address the comments of some at the meeting of February 10<sup>th</sup> that implied that a hardship or worse would be placed on the travel industry as a result of the extended hours.

I note that some within the airline and visitor-serving industries appear to believe that one is necessarily opposed to tourism or trade by supporting the expanded hours. I want the airlines to note that I voted for \$50 billion to keep them in business. Had I and my colleagues not supported jobs in that industry during an historic crisis some of those airlines would likely not exist today. \$10 billion was also granted, in part due to my vote, to airports to prevent serious layoffs and dislocations.

I want the hotel and restaurant industry representatives who spoke at the February 10<sup>th</sup> meeting to note that restaurants in San Francisco received \$815 million in free money from the restaurant grant program that I strongly supported, while those in San Mateo County received an additional \$214 million. Combined, restaurants were able to obtain \$1 billion in free money that taxpayers sleeping in the noise impacted areas of southern San Francisco and northern to central San Mateo County in part contributed.

I do not know the amount of Paycheck Protection funding that went to individual hotels or restaurants in San Francisco and San Mateo County, much of it ultimately forgiven and therefore free to the beneficiaries, but I wouldn't be surprised if it exceeded an additional \$1 billion. Undoubtedly some of these same businesses also obtained very low interest SBA EIDL loans, potentially bringing the likely relief to the industry within the two counties to well over \$2 billion. It is not an exaggeration to suggest that if I and others who believe that government has a duty to support jobs had voted against all of these programs, the airline and visitor-serving industries in San Francisco and San Mateo County would be the equivalent of a ghost town. I put my values on the line, often in the face of resistance and criticism from others, to save all of your industries. I expect all of you to seriously consider my concerns about human health.

I know that Mr. Satero takes my concerns seriously, which is why I have chosen to give him this letter rather than to have a representative from my office participate in talks between the interested parties. I remind all of you that it is important to remember and to respect your allies, their perspectives on shared



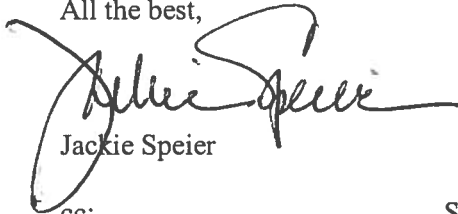
areas of concern, and their dedication to your very existence when discussions about impacts on tourism, trade, and overall public health and wellbeing are discussed.

I appreciate the FAA's commitment to establish the time period of 1 a.m. to 5 a.m. as a time of relief for residents. I understand the purpose of an upcoming discussion will be to assess the technical feasibility of using expanded hours of operation for the NIITE and HUSSH southbound departures during the reduced flight operations of the pandemic economy. It is understood that use of the NIITE and HUSSH departures is dependent on lower flight operations during late night hours. It is further understood that when daytime departures are adversely impacted by weather or runway configurations, that use of the NIITE and HUSSH departures would often start later at night.

Likewise, if a post-pandemic economy results in future traffic increases, any expanded hours may need to be reviewed and adjusted accordingly. However, while we have this current period of overall lowered flight operations, the technical basis for restricting the hours to 1 a.m.-5 a.m. is not present. There is also no reason to ignore the opportunity to expand the hours of operation beyond these hours to 12:30 a.m. to 5:45 a.m., an additional 1 ¼ hours. If there is concern that the public will come to rely on the expanded hours of operation, I would suggest that the SFO Roundtable can make abundantly clear to the public that such expansion is based on criteria set by the FAA and can receive periodic public reports on such criteria. In addition, the airlines have the opportunity to not overburden the FAA by deciding not to schedule additional flights in that sensitive time period.

I close by reminding everyone that we need to work together to produce an outcome that is reasonable in light of human health, not just the product of the commercially most vociferous. More than any single person involved in the upcoming discussions, I have been the one who took action to save your collective jobs and industries. I respectfully suggest that allowing those I represent to sleep 1 ¼ hours more is fair and reasonable. Professionals who respect this concern should be able to create a plan that will sustain the objective over time while also allowing the industry that we all support to have a solid future.

All the best,



Jackie Speier

cc:

San Francisco Airport Community Roundtable  
San Francisco Supervisor Ahsha Safai



February 14, 2022

Raquel Girvin

Western Pacific Regional Administrator  
Federal Aviation Administration  
777 S. Aviation Boulevard, Suite 150  
El Segundo, California 90245

Re: NIITE/HUSSH Departure Procedure

Dear Ms. Girvin:

The San Francisco Airport/Community Roundtable (SFORT) is in its 40th year of providing community noise reduction recommendations related to aircraft and airport operations from the San Francisco International Airport (SFO) to airport management, FAA staff, and airline representatives. The Roundtable Membership consists of 24 appointed and elected officials from the City and County of San Francisco, the County of San Mateo, and most cities in San Mateo County representing more than 2,000,000 people.

At a special meeting on February 10, 2022, the SFORT moved to support the FAA's implementation of the proposed change to the NIITE/HUSSH departure procedure between the hours of 1:00 AM to 5:00 AM (Option 1) and commencement of work on Option 2 which would extend the hours of the procedure to 12:30 AM to 5:45 AM. The proposed change will require flights on the NIITE departure from SFO and HUSSH departures from OAK to transition from the NIITE fix to the GOBBS fix on the western side of the Golden Gate Bridge before proceeding southbound to its next waypoint. This change will allow for aircraft to remain over the water during those critical hours of sleep.

Our SFO Airport/Community Roundtable looks forward to working with you and the FAA to continue to develop solutions that reduce noise impacts in our communities, while maintaining safety in our skies.

Regards,

A handwritten signature in black ink that reads "Sam Hindi".

Sam Hindi,  
Roundtable Chairperson

CC: Congresswoman Jackie Speier  
Ivar Satero, Airport Director  
Faviola Garcia, Supervisory Senior Advisor



**N.O.I.S.E. Summary of the March 17, 2022 Hearing**  
**Aviation Noise: Measuring Progress in Addressing Community Concerns**

**Kevin Welsh Executive Director, Office of Environment And Energy (Accompanied by Beth White, Senior Strategist for Public and Industry Engagement, Air Traffic Organization, FAA Mike Hines, Manager, Office of Planning and Programming, Office of Airports, FAA)**

- In 2012, Congress directed the FAA to accelerate Next Generation air traffic technologies.<sup>4</sup> The introduction of satellite-enabled Performance Based Navigation (PBN) procedures and more precise flight paths has improved the safety and efficiency of the national airspace system.
- It has also provided noise benefits by reducing the geographical area that flight paths cover, resulting in a reduction in the overall number of people exposed to aircraft noise.
- At the same time, however, the implementation of PBN, combined with a growth in air traffic, has increased the concentration and number of flights over certain communities. These changes, both air traffic procedures and air traffic growth, have resulted in new and increased concerns about aircraft noise, particularly by communities that are experiencing an increased number of flights, even if the overall noise levels have decreased.
- As a result, the FAA has significantly enhanced its focus on addressing noise concerns and working with communities, airports, and other key stakeholders.
- They are constantly striving to provide communities with new tools that will help them access noise information resources. As part of our Noise Complaint Initiative, they have taken several meaningful actions to provide greater transparency regarding aviation noise complaints and inquiries submitted by the public.
- Through this initiative, the FAA seeks ways to address the underlying issues raised by the public, proactively educate, inform, and engage in aircraft noise issues, and partner with airports to gather their complaint data and better understand nationwide concerns.
- As part of this initiative, members of the public can, for example, access our web-based noise resources to learn more about aviation noise, access information on FAA noise research and noise programs, as well as understand how to make a noise complaint. The FAA has also designed a noise portal that accepts detailed complaint information and allows users to file noise complaints directly with the FAA.
- For quick answers to frequently asked questions related to FAA’s metroplex program, flight path information, regional administrators, and community engagement in general, users can also access our “chatbot”. The chatbot is an artificial intelligence powered chat function that enables users easy access to the vast information on the FAA website.

## Noise Research and Policy

- A key component of the FAA's noise research program is to better understand the effects of aircraft noise on individuals and communities through research into annoyance, health and human impacts (e.g., sleep, cardiovascular), speech interference, and children's learning. They also conduct noise modeling and develop noise metrics and environmental data visualization tools to help FAA and the aviation community estimate and share environmental impacts of aviation in a way that is accessible and understandable to the general public.
- These activities, including the research and development of tools and models, are critical to addressing aircraft noise, refining our approaches, and periodically updating policy. As part of these efforts, they recently published the results of a nationwide survey regarding annoyance related to aircraft noise—the Neighborhood Environmental Survey.
- This was a multi-year research effort and is one of many current FAA research efforts to update the scientific evidence of the relationship between aircraft noise exposure and its effects on communities around airports.
- The survey results were released along with an overview of FAA's broader noise research program in a January 2021 Federal Register Notice. The notice requested public comment on the scope and direction of FAA's noise research program, and they received over 4,000 comments which are being reviewed to help inform the agency's noise research priorities and noise policy review planning efforts.
- In late 2021, the FAA initiated a review of our noise policy as part of our ongoing commitment to address aircraft noise. This effort will build on our work to advance the scientific understanding of noise impacts as well as the development of analytical tools and technologies. Our review will be evidence-based, thorough, and collaborative. It will consider new evidence from the agency's noise research program, including from the Neighborhood Environmental Survey, and the distribution of environmental risks, tradeoffs, or externalities across communities.
- They expect to review the continued use of the Day-Night Average Sound Level (DNL) as the FAA's primary noise metric for assessing cumulative aircraft noise exposure, as well as whether DNL 65dBA should remain the definition of the limit for residential land use compatibility and the significant noise exposure threshold. They also expect to explore whether, and under what circumstances, supplemental or alternative noise metrics are appropriate to inform research and policy considerations.
- The review process will identify and assess other policy options not noted here, consider feedback on the notice, and, if appropriate, recommend policy updates. They also anticipate that our noise policy review will include stakeholder outreach as we consider any recommended policy changes.

**Heather Krause**  
**Director, Physical Infrastructure**  
**Government Accountability Office**

- FAA issues what is known as a “type certificate” as part of a certification process for new aircraft designs to signify that the design is in compliance with applicable airworthiness, noise, and other standards. Airplanes are certificated to the noise standards that were in effect at the time of the type certificate application.
- In August 2020 they reported that, based on FAA data and GAO estimates, most U.S. large commercial jet airplanes were certificated at the minimum required stage 3 noise standards, but nearly all of them would be able to meet more stringent noise standards.
- By analyzing January 2020 data from airlines and aviation manufacturers, they estimated that 96 percent of large commercial airplanes were manufactured with technologies that are able to meet more recent and stringent stage 4 or 5 standards.
- According to FAA officials and aviation stakeholders they interviewed, the primary reason many large commercial airplanes certificated as stage 3 produce lower than stage 3 noise levels is because engine and airframe technology has outpaced the implementation of noise standards.
- More recently, in response to the decrease in travel amid the COVID-19 pandemic, some airlines have accelerated retirement of certain airplanes, some of which are certificated as stage 3. For example, one airline told us it is retiring its MD-88 fleet— which constitutes the majority of its remaining stage 3 fleet—and MD-90 fleet.
- Stakeholders they interviewed generally agreed that a government- mandated transition (i.e. phase-out) of stage 3 airplanes would not substantially reduce airport noise and could be costly and challenging. Since most U.S. large commercial jet airplanes are certificated at the minimum required stage 3 noise standards, a phase-out could require recertificating them to comply with stage 4 or 5 standards.
- This process could be costly for operators and manufacturers but would provide little reduction in noise since they found that nearly all of those aircraft already meet the more stringent noise standards. Further, airplanes currently unable to meet more stringent standards would require modifications or face retirement.
- For older airplanes that could not be recertificated to meet stage 4 or 5 standards, some operators could incur costs for replacement airplanes sooner than originally planned. Although stakeholders indicated that a phase-out would not substantially reduce noise, they identified other limited benefits newer airplanes generate, such as reduced greenhouse gas emissions and fuel consumption.

- In addition, some stakeholders noted that factors other than noise from stage 3 airplanes are key contributors to airport noise in recent years. Such factors include a large increase in the number and frequency of flights at some commercial airports in recent years prior to the COVID-19 pandemic and changes to flight paths raising community noise concerns.
- Looking to the future, emerging technologies may present opportunities to further reduce aircraft noise. For example, as they reported in November 2020, companies are developing innovative new aircraft designs, including electrically powered aircraft and aircraft with vertical takeoff and landing capabilities.
- Among these potential future developments is the concept of advanced air mobility, which is expected to take advantage of the potential lower operating costs of electrified aircraft in support of moving people and cargo more quickly between local, regional, and urban places. According to FAA, significant technological improvements are expected to enable electrically powered aircraft that will reduce noise traditionally associated with helicopter transportation.
- As directed in the FAA Modernization and Reform Act of 2012, FAA has continued modernizing the national airspace through NextGen, a multi- billion dollar effort to implement technologies and capabilities, including PBN, which relies on satellite navigation. PBN is intended to allow aircraft to fly more precise flight paths intended to reduce flying time, fuel use, and emissions.
- The precision and predictability of PBN procedures increase safety and may allow more planes to safely fly in a given airspace at the same time or in closer succession, which in turn would allow for increased airspace capacity if demand increases. However, because PBN flight procedures are more precise, noise is likely to be concentrated over a smaller area.
- As a result, while fewer communities overall may experience noise, those communities directly under new PBN flight paths may experience more frequent noise. Community concerns about increased noise after PBN implementation, among other factors, have led to legal challenges and delays, reducing the realized benefits of PBN.
- As they reported in 2021, using additional metrics to assess the potential noise impacts of proposed PBN flight path changes may provide FAA with a better understanding of such impacts. Currently, FAA assesses the potential noise impact of proposed flight path changes (such as PBN procedures) on locations within the area surrounding an airport by using the Day-Night Average Sound Level (DNL) metric.
- Our analysis showed that because DNL takes into account both the amount of noise from each aircraft operation, as well as the average annual flights per day at a given location, the same DNL may be associated with vastly different numbers of flights above that location.
- As such, DNL does not provide a clear picture of the flight activity or associated noise levels at a given location. For example, as shown in figure 1, 100 flights per day can yield the same DNL as one flight per day at a higher decibel level.

- This analysis as well as recent research published by FAA demonstrate the limitations of FAA relying solely on DNL to identify potential noise impacts. In January 2021, FAA issued the results of a survey showing a substantial increase in the percentage of people who are highly annoyed by aircraft noise, including at lower DNL levels, as compared to earlier survey results.
- According to FAA, one factor that may have contributed to this increase is changes to the nature of noise exposure, such as changes to the number of flights overhead. Since no single metric can convey different noise effects, using additional metrics—such as changes in number of flights overhead—in designing proposed flight paths could help FAA identify and address potential noise concerns and better facilitate PBN implementation.
- The recommended that FAA identify appropriate supplemental noise metrics and circumstances for their use to aid in FAA’s internal assessments of noise impacts related to proposed PBN flight path changes. As of March 2022, FAA said it is conducting a noise policy review and plans to consider whether and under what circumstances supplemental, companion, or alternative noise metrics are appropriate to inform research and policy considerations. FAA plans to complete their initial noise policy review by the end of 2022.
- As FAA continues in its efforts to expand the use and types of uncrewed aircraft systems and other emerging technologies into the national airspace system, these new aircraft could present new noise challenges. For example, electric take-off and landing vehicles have the potential for quieter operations but may also operate closer to populations and raise new concerns for communities.
- FAA stated in 2020 that stakeholder concerns about noise will need to be considered when designing corridors (defined airspace) where these aircraft might operate. In addition, continued growth in commercial space launches is expected, but as they reported in 2020, stakeholders have expressed concerns that FAA’s process for licensing launch sites may not adequately consider combined noise effects of commercial space activities with aviation activities on surrounding communities.
- Assessing and addressing community noise concerns will be critical as the nature and extent of aircraft operations continues to evolve and increase. Fully implementing our prior recommendations can help FAA more effectively understand the effects of aircraft noise and address community concerns.

**Sharon Pinkerton, Senior Vice President of Regulatory and Legislative Policy, Airlines for America**

- Reducing noise at the source is inarguably the best way to reduce aircraft noise impacts on communities and deployment of new, quieter aircraft has been a key focus of carriers. Indeed, the FAA has affirmed that “the single most influential factor” contributing to the dramatic decline in the public’s exposure to aircraft noise has been the “transition to quieter



aircraft, which effectively reduced the size of the areas around airports experiencing significant noise levels.”

- Despite the significant financial challenges posed by the COVID-19 pandemic, airlines have continued to invest heavily in new aircraft. From 2017-2021, U.S. cargo airlines spent approximately \$20 billion on aircraft and related equipment and took delivery of 154 aircraft; for 2022, they plan to spend an additional \$5 billion for new aircraft, with 77 on firm order. U.S. passenger airlines took delivery of more than 1,300 new aircraft from 2017-2021, spending approximately \$48 billion on aircraft, with plans to spend approximately \$15 billion this year<sup>4</sup> and firm orders for 2,198 new aircraft for delivery in 2022 and beyond.
- These new aircraft are 75% quieter than first generation jets and 50% quieter than jets coming off the line 10 years ago.<sup>5</sup> The practical impact of the 75% reduction noise produced by aircraft is to decrease the area impacted by aircraft noise by an even greater amount.<sup>6</sup> Operating much quieter aircraft also enables carriers to provide more service without increasing overall noise impacts to the communities they serve: as the FAA affirms, “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.”
- While the pandemic severely impacted the industry, it also accelerated the turnover of our industry’s fleet as older, noisier, and less efficient planes have been grounded and will ultimately be replaced by quieter and more efficient aircraft as they continue to emerge from the crisis.
- As a result, carriers started 2021 with an operating fleet nearly 20% smaller than at the beginning of 2020, with the bulk of aircraft removed from service being older aircraft with greater noise footprints. In fact, in 2020, the top nine carriers retired 339 aircraft, with 280 more retirements announced to occur in the coming years.
- From 2017-2021, the 11 top passenger carriers and their regional airline partners removed over 1,500 aircraft from service, with over half removed in the last two years. So, as they build back our fleets from COVID-19 they will not only start from base fleet that is quieter but, as demand for air travel recovers, they will meet that demand by expanding our fleets with quieter (and more fuel-efficient) aircraft.
- Implementation of the Next Generation Air Transportation System (NextGen) has been a key priority of both the FAA and airlines as it is essential to improving the safety, efficiency and capabilities of the National Airspace System (NAS).
- Performance Based Navigation (PBN) is a core element of NextGen and a key to delivering its benefits including the potential to reduce environmental impacts on communities. NextGen not only improves safety of flight, it also critically improves efficiency, which directly translates into emissions reductions, not only of carbon emissions but other “criteria” pollutants subject to National Ambient Air Quality Standards (NAAQS), such as oxides of nitrogen (NOx, a precursor to the formation of ozone) and particulate matter (PM).

- Reductions of such pollutants can be particularly relevant in areas that have failed to attain NAAQS (known as non-attainment areas), many of which are urban areas where achieving environmental justice is a particular challenge that must be met.<sup>13</sup> Accordingly, A4A and our member carriers are keen to ensure implementation of NextGen delivers these benefits to local communities.
- Implementation of new procedures can also reduce net noise exposures around an airport. However, they recognize that in some cases PBN procedures may concentrate flight paths such that certain members of the community experience more noise or frequency of noise events, while others benefit from noise reductions. In addition, there have been challenges in communicating to affected communities the potential changes in the noise environment that can come with implementation of new procedures.
- No one benefits when new procedures are put in place after public consultation only for the procedures to be questioned on grounds that potential impacts were not properly communicated. Airlines devote a great deal of time and resources to ensure the successful development and implementation of new procedures.
- Uncertainty regarding newly adopted procedures not only puts their considerable benefits at risk but raises the specter of reverting to less efficient procedures that potentially increase overall noise impacts as well as emissions.
- For these reasons, A4A and our members have championed improvements to the process used to develop new procedures to ensure communities are heard and their views taken into account as the procedures are developed and implemented. For example, A4A and our members were active participants in the NextGen Advisory Committee's (NAC) PBN Blueprint Community Outreach Task Group, which developed recommendations and best practices for community engagement for large and small NextGen projects, much of which centered on engaging with communities regarding aircraft noise exposures.
- More recently, A4A was the principal author of a report prepared to respond to the FAA's request to the NAC for further advice regarding "delivery and use of PBN capabilities and in achieving operational benefits." This report underscored that "the aviation community supports the sentiments in the FAA Administrator Dickson's January 24, 2020 letter to House of Representatives Member, Eleanor Holmes Norton, that the FAA is committed to engagement and dialogue with communities."

**Frank Miller, Executive Director, Hollywood Burbank Airport**

- Additional research should include determination of quantifiable impacts of aircraft noise – such as health impacts, sleep disturbance, education impacts, life expectancy, and property values – that is necessary to put the "annoyance" data in context and also to identify critical environmental impacts that new policies can (and should) address.
- It is understood that the FAA is currently pursuing a number of research projects related to aircraft noise, several of which have been underway for a number of years. Airports would

like to understand whether there are ways in which the studies could be accelerated with increased funding or other methods. The acceleration of ongoing studies relates to our request to understand the road map to updating policy. As pieces of research similar to the NES are released, airports will be required to manage continued uncertainty while waiting for policy updates.

- Research on the change in both noise and operational metrics correlated to the change in annoyance to aid in better understanding the significance of a change.
- In the NES, the FAA stated that “Recent academic research and internal assessments have raised questions about the benefits of sound insulation relative to the costs.” Airports would like to learn more about the internal assessments that the FAA has conducted and the conclusions reached in those assessments. Further research on the cost-benefit of noise mitigation measures may also help inform future aircraft noise policy.
- Airports recognize the likelihood of including benefit-cost analyses as a means to aid in deciding appropriate policy decisions. Accordingly, airports recommend the FAA conduct research defining an appropriate cost effectiveness methodology that is consistently applied in aiding decision-making related to policy. Airports also recommend the findings be documented and coordinated with stakeholders and results be made available to the members.
- The Airport Cooperative Research Program has undertaken several research projects, including an Environmental Research Road Map<sup>4</sup>. Airports request that the FAA’s research portfolio include the following noise items identified in that road map:
  - Assessing Community Annoyance of Noise from Unmanned Aerial Systems
  - Best Practices for Effective Sound Insulation
  - Best Practices for Stakeholder Engagement and Assessment and Reporting on Multiple Noise Metrics – Airports particularly are interested in learning if the dataset from the NES would provide new areas of knowledge related to noise metrics.
- As noted in the Federal Register notice, the FAA has continually developed its high-fidelity modeling capabilities. As AEDT becomes more and more complex, it becomes more of a “black-box” to community members. Research on the soft skills of how to explain the model and make public its results would be helpful to airports
- As the aviation system recovers from the downturn caused by the pandemic, the FAA should conduct research to understand shifting community perspectives and reactions to aircraft noise during the next several years resulting from potential lifestyle changes (e.g., working and learning from home) and psychological effects resulting from stay-at-home orders, limited human interaction, etc.

## **David Silver, Vice President for Civil Aviation, Aerospace Industries Association**

- According to the Federal Aviation Administration (FAA), the number of people exposed daily to significant aviation noise in the U.S.<sup>1</sup> declined from roughly 7 million in 1975 to just over 454,000 today. Over the same time period, the number of enplanements<sup>2</sup> increased from 202 million in 1975 to 890 million today and the U. S. population grew by more than fifty percent.
- Domestically, they continue to work with the FAA and the U. S. Department of Transportation (DOT). AIA commends the FAA's work to better understand, reduce, and mitigate the impact of noise on communities, and its wider actions to increase community outreach to those affected by aircraft noise through community roundtables and other measures.
- AIA strongly supports the data- driven approach the FAA is taking to ensure that aircraft noise policy continues to reflect the latest science on this matter. AIA also appreciates that the FAA recognizes the importance of stakeholder engagement in decisions related to aircraft noise policy and they are committed to continuing our input on all aspects of aviation noise.
- Pleased to receive the most recent update of the U.S. Aviation Climate Action Plan, which set out the U. S. government's plan to achieve net-zero greenhouse gas emissions for the U.S. aviation sector by 2050, a goal in line with our own efforts. The plan builds on our industry's commitment to net-zero and highlights specific actions and policy measures to foster innovation and drive change across the entire sector.
- Though focused primarily on emissions, they believe this plan will have a positive effect on aircraft noise because many of the pathways to emissions reduction have the secondary effect of reducing aircraft noise.
- These improvements will come about largely through: (1) development of new, more efficient aircraft and engine technologies; (2) improvements in aircraft operations throughout the National Airspace System; (3) electrification, and potentially hydrogen, as solutions for short-haul aviation; and (4) advancements in airport operations across the United States.

### **Engine Technology**

- The increase in fan size allows the industry to increase the amount of air, while also reducing the speed of the air as it moves around the nozzle, thereby achieving high- or ultra-high bypass ratios. Historically the nozzle was the noisiest part of the engine. The shift to higher bypass ratios reduces the noise. Today fan noise remains the dominant source.
- With the introduction of ultra-high bypass ratio engines employing geared turbofan technology (GTF), one manufacturer further reduces fan speed. This technology allows

additional slowing of the fan, preventing the tips of the fans from potentially becoming supersonic. This feature can further reduce a major noise source, reducing the noise footprint by over 75 percent.

- Reshaping the nozzles changes the air flow coming out of them to specifically reduce noise, leading to the ‘chevron nozzle’ design. This technology, combined with the use of new materials such as acoustic lining around the sides and underneath the engine shroud (cowl), has also significantly reduced engine noise.
- They have reached a point when it comes to noise that we can no longer concentrate on one area. Every part of the engine plays a role—the fan, booster, compressor, combustor, turbine section and exhaust area. Through public-private partnerships between NASA, the FAA (CLEEN Program), industry, and universities, we expect to see continuous improvements in these areas with each generation of engine.

### **How to Get There Faster and Quieter**

- A critical factor for increased improvement in the noise characteristics of aircraft is continuing the effective partnership between the FAA, the National Aeronautics and Space Administration (NASA), and the aviation industry.
- They believe collaborative support for aviation research and development is vital for aviation’s future, and the opportunity exists today to double down on these public-private partnerships and accelerate the next generation of aircraft and engines.
- AIA member companies are exploring a range of technologies for next-generation aircraft for introduction in the 2030s, offering improvements in fuel efficiency of 15 to 25 percent compared to current aircraft. To realize these benefits, U. S. manufacturers will require support to remain competitive, given the impact of Covid-19 and the billions of dollars in investment being made by European governments in support of similar efforts overseas. Congress can help in these efforts by:
  - Continuing to support increased funding for the FAA’s Continuous Lower Emissions, Energy and Noise (CLEEN) Program to accelerate reductions in noise and other emissions in conjunction with fuel efficiency improvements;
  - Supporting and expanding the Alternate Fuel and Low Emission Aviation Technology grant program in the House-passed Build Back Better legislation and introduced in the Senate as S. 3125 (“Aviation Emissions Reduction Opportunity” or AERO Act);
  - Passing H. R. 6270, the “Advanced Aviation Infrastructure Modernization (AAIM) Act”, to establish a pilot program to provide grants related to Advanced Air Mobility infrastructure;
  - Helping to drive the development of a comprehensive, long-term research agenda that supports transformational aviation technologies, leveraging partnerships between

industry and government agencies including NASA and the Departments of Transportation, Defense, and Energy; and

- Continuing to support NASA's work in the development of enabling technologies for next generation aircraft, such as new airframes and engines that reduce noise and emissions while improving efficiency.
- This should include accelerating the timetable for a NASA subsonic demonstrator 'X-plane' incorporating airframe innovations, to ensure U. S. companies can bring these technologies to maturity ahead of European competitors.

### **Joeben Bevirt, Founder and CEO of Joby Aviation**

- Electric aviation has the potential to truly improve our cities and communities — not just by eliminating emissions, but also creating faster, affordable new ways for people to move around increasingly congested areas. But these benefits can only be realized if industry can design planes quiet enough to blend into their surroundings.
- While replacing noisy combustion engines with electric motors helps to address the acoustics of vertical flight, achieving truly quiet flight requires careful design considerations throughout the aircraft.
- At a high level, our airplane measures 65 A-weighted decibels (dBA) during take-off and landing from a distance of 100 meters, and 40 dBA in overflight. This is roughly 100x less acoustic energy than a traditional rotorcraft, and for comparison, about as loud as a normal conversation at its loudest point.
- However, noise is inherently complex and it's important that when the aviation industry thinks about it, we consider both the measurable quantity of the noise as well as the quality of the sound. The Joby design addresses both in several ways.
- First, we designed electric motors that create very high torque, which enables our propellers to spin powerfully at low revolutions per minute (RPM) while still generating substantial lift and thrust.
- As a result, the Joby aircraft has double the battery capacity of a Tesla Model 3 Long Range automobile, along with six times the torque density and three times the total propulsion power.
- Next, we paired that motor with specially designed lightweight propeller blades optimized for low noise. The progression of our propeller design can be seen in figure 2. High torque motors, combined with a large, purpose designed, propeller capable of spinning at low RPMs has played a critical part in drastically reducing our total sound profile.

- The amplitude, or loudness, of a sound is just one piece of the noise equation; sound quality is also critical to how noise is perceived. We focused extensively on both aspects of noise and designed our aircraft to avoid the “wop wop” of a traditional helicopter. We instead created a sound that closely resembles nature by limiting the impulsive sound coming off the aircraft.
- Taken together, we believe our design approach resulted in an aircraft that is extremely quiet and more pleasing to the ear than today’s aircraft. To validate this, it was critical for us to work with a respected third party and, for that reason, we were fortunate to partner once again with NASA as part of their Advanced Air Mobility National Campaign.
- Together, we conducted a series of test flights over two weeks in September 2021, using NASA’s Mobile Acoustics Facility<sup>9</sup> to analyze the noise footprint of the Joby aircraft.
- Due to the substantially reduced noise profile of our aircraft, along with its enhanced affordability, we believe there will be interest in and opportunities to permit new infrastructure closer to where people live and work, commonly referred to as “Vertiports” or “Skyports.”
- Industry is actively working with the FAA to define this new class of infrastructure, but they are largely envisioned as similar in size to a heliport with electric charging and water available. In the future, I believe that we could consider incorporating noise standards into how we permit infrastructure.
- Quiet aviation is coming, and cities should be able to work with industry to make it a part of their transportation networks – but only with the promise that it won’t be disruptive to their citizens.
- To help cities begin to plan for Advanced Air Mobility, Joby and others in the industry have been pleased to support H.R. 6270, the Advanced Aviation Infrastructure Modernization Act sponsored by Chairman Larsen, Ranking Member Graves, and Representative Titus.
- This legislation would enable one year planning studies for cities to study how Advanced Air Mobility will integrate into their specific community. To paraphrase something that Chair Larsen and I have talked about before, “the most important person may soon become the local city planner”.
- I firmly believe that this piece of legislation is critical to give that local planner the resources necessary to understand how Advanced Air Mobility will benefit their local community.





April 1, 2022

The Honorable Rick Larson  
House Aviation Subcommittee Chairperson  
Committee on Transportation and Infrastructure  
U.S. House of Representatives

Re: Aviation Noise: Measuring Progress in Addressing Community Concerns Testimony

Dear Congressman Larson:

Thank you for allowing the San Francisco Airport/Community Roundtable (SFORT) to enter written testimony into the record for the Aviation Noise: Measuring Progress in Addressing Community Concerns hearing. The SFORT is in its 40th year of providing community noise reduction recommendations related to aircraft and airport operations from the San Francisco International Airport (SFO) to airport management, FAA staff, and airline representatives. The Roundtable Membership consists of 24 appointed and elected officials from the City and County of San Francisco, the County of San Mateo, and most cities in San Mateo County representing nearly 2,000,000 people. As the Chair and Vice-Chair of the Roundtable, we submit this information that we feel represents the group to the best of our ability.

The topics listed below are only some of the items that are very important to the members of the SFORT and the constituents that they represent.

***The reduction of nighttime noise exposure is a critical component to the health of communities around the airport.*** Undisturbed sleep of sufficient length is essential for daytime alertness and performance, quality of life, and health. As aircraft noise is intermittent noise, its effects on sleep are primarily determined by single event noise levels. Repeated noise-induced awakenings can impair sleep quality through changes in sleep quality including delayed sleep onset, early awakenings, less deep sleep, and more time spent awake and in superficial sleep stages. There are numerous studies discussing the effect of sleep deprivation on health and on communities. During the existence of the SFORT, and particularly in recent years since the introduction of the Next Gen procedures, we have heard repeated and numerous examples of residents impacted by aviation noise, and in particular that of nighttime noise. These comments have increased significantly in recent years. These comments include not just the annoyance of being unable to sleep uninterrupted through the night but of the effects

on mental health, physical health, especially impacts on children and their ability to function in school and elsewhere, and just the enjoyment of life in general. We recognize and appreciate the necessity of some nighttime aviation but would strongly suggest that it be limited outside of defined hours, we would recommend 11:00 p.m. to 5:00 a.m., and be limited to that of necessity, e.g., medical, emergency, and needed cargo flights. There is also an increased public awareness of aviation noise, evidenced in part by both the creation of numerous citizen groups that formed due to the concern over this issue and of our legislator's failure to adequately act. More and more citizens are becoming concerned over aviation noise and their perception of a failure to address. There is an increased public concern, which will likely only be more pronounced as passenger and cargo flights increase as we return to normalcy post-pandemic. We desire to have flight paths be more over water and less over land, consistent with the mission around safety, efficiency (AND noise reduction). With the advent of Next Gen, the paths changed and now are increasingly over land versus water, at least around SFO, due to the efficiency standard and reduced attention to noise impacts. However, if noise is added to the considerations, higher use of water paths would likely be the natural result. More opportunities are needed to work with the FAA and airports to limit nighttime operations. As an example, through ongoing advocacy by the SFORT, changes were recently made to the hours of operation and the required path of the NIITE/HUSSH departures from San Francisco International Airport and Oakland International Airport that will benefit the residents of San Francisco and the Bay Area Peninsula. But these changes do not go far enough. We urge Congress to reinstate the ability for airports to institute a nighttime curfew to provide quiet hours for communities.

***The metrics used by the FAA to measure the impacts of aviation noise do not accurately portray the effects of noise on communities.*** The Day-Night Average Sound Level (DNL) metric is currently used by the FAA. The DNL measures the average sound generated by aircraft operations over the course of 24-hours. Given the cumulative nature of this metric, having a small number of loud aircraft flying overhead through the course of a day can have the same DNL as multiple quieter aircraft. Congress should require the FAA to use additional metrics to account for the frequency of noise exposure, not just the daily average. The FAA should replace agency-wide use of the CNEL/DNL metric with a supplemental metric such as NA (Number Above) number of events above a certain decibel level such as in NEPA, Part 150, and AIP/PFC Funding of Noise Mitigation, consider duration within the agency approved metric(s). Using a supplemental metric that factors in duration, such as TA (Time Above), and break out noise metric standards in terms of frequency (such as low and high frequencies) would give a more accurate picture of what communities around the airport are being subjected to. Priority should also be given to establishing a new policy to employ the NES, rather than the FICON/Schultz Curve, to better represent aircraft noise impacts to communities.

***Congress should require the FAA to incorporate ground-based noise metrics and standards into the overall analysis of aviation noise impacts.*** Ground-based noise may have a greater impact than in-flight noise on the quality of life for certain communities, especially

those located close to airports. Requirements such as all electric ground equipment and time limitations on auxiliary power units used by aircraft at the gates could lessen the impacts on the nearby communities. The FAA needs to look at all noise from airport operations including those from alternate flow operations and maintenance run ups. The FAA needs to include low frequency noise measurements, the duration of the noise and the fact that all departures add to low frequency noise to close in communities. Failure to include low frequency departure noise results in the FAA statistics on numbers of people impacted by airport noise to be inaccurate and misleading and undermines the impact of aviation noise on many who are the most affected. The impact is not only noise caused by flight, but the cumulation of every flight creating noise for greater duration and in greater decibels due to the additive function of multiple noise events happening at the same time.

***Policymakers should pay particular attention to underrepresented and underserved neighborhoods and communities throughout the country.*** A disproportionate number of communities that are negatively impacted by aviation noise are historically disadvantaged communities. Often, aviation noise is exacerbated by environmental impacts of air travel and can have a significant impact on quality of life particularly in under-resourced communities. The underrepresented and underserved neighborhoods and communities are generally the least able to mitigate aviation noise and are often forced by circumstances to live closest to airports and aviation noise sources. Even if not living within an airport contour, they are often directly under flight routes. They often don't have the resources to minimize the noise. Accordingly, we recommend that in addition to the other noise measurement and reduction recommendations, noise insulation programs should be significantly expanded with federal funding to airports to accommodate added sound insulation treatments on properties outside the 65 CNEL/DNL contours but underneath a flight path.

***NEPA needs to consider environmental noise as well as the environment.*** Environmental noise is defined as unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from sites of industrial activity. The National Environmental Policy Act (NEPA) establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment and it provides a process for implementing these goals within the federal agencies. NEPA requires federal agencies to consider the potential environmental consequences of their proposals, to consult with other interested agencies, to document the analysis, and to make this information available to the public for comment before the implementation of the proposals. Failure to consider noise as an equal factor at least to that of efficiency does irreparable harm to public health and fails to recognize that noise in and of itself is a form of pollution that needs attention. We recommend that the FAA Office of Environment and Energy be reinstated to address community noise impacts as part of the FAA process. Additionally, allowing the use of Categorical Exclusions for projects that will have negative noise implications for the public should be limited. NEPA should be followed and should require all federal agencies, including

the FAA, to assess, consider, and disclose noise impacts and other environmental effects when considering federal approval or funding of airport development projects and airspace redesign. What and who is underneath a flight path is just as important and crucial as the efficiency of that path.

**FAA Community Engagement Officers (CEO) should be given greater responsibility/authority to make decisions.** While having a FAA representative at public meeting is appreciated, the public deserves more than just someone who listens. The FAA established the CEO position within each of FAA's nine regional offices to serve as a regional ombudsman and coordinate public outreach with the appropriate FAA officials. These officials are required to make recommendations to the Regional Administrator to address concerns raised by the public and improve the consideration of public comments in the decision-making process, among other responsibilities. In practice, though, the CEO is merely the go-between for the community roundtables and the FAA. CEOs only take information down and must rely on other departments and branches within the FAA to get questions answered. This process takes months, as questions asked at one public meeting will not be answered until the next one. If CEOs were subject matter experts, **or** subject matter experts were made available on a more timely or real time basis (easier to do because most of our meetings are virtual or likely to be hybrid meetings in which virtual attendance is available), public questions would be able to be answered in a more real time way which would make for a more productive interaction with the FAA.

Our SFO Airport/Community Roundtable again appreciates the opportunity to enter our aviation noise concerns into the official record.

Regards,



Sam Hindi, City of Foster City  
Roundtable Chairperson



Al Royse, City of Hillsborough  
Roundtable Vice-Chair

CC: Congresswoman Jackie Speier

# Airport Noise Report



A weekly update on litigation, regulations, and technological developments

Volume 34, Number 12

April 1, 2022

## Health Effects

### STUDY FINDS LIVING NEAR NOISE POLLUTION TIED TO GREATER RISK OF HEART ATTACKS

*[Following is a March 23 news release from the American College of Cardiology on a study that calculated that high transportation noise exposure accounted for 1 in 20 heart attacks in New Jersey.]*

Living in a noisy environment can be annoying but it might also harm your health. People experiencing high levels of noise from cars, trains or planes were more likely to suffer a heart attack than people living in quieter areas, according to a study to be presented at the American College of Cardiology's 71st Annual Scientific Session.

"When people talk about pollution, they're usually talking about particles in the air or water," said Abel E. Moreyra, MD, professor of medicine in the Division of Cardiology at Rutgers Robert Wood Johnson Medical School and the study's lead author. "But there are other forms of pollution, and noise pollution is one of these."

The study analyzed heart attack rates among nearly 16,000 New Jersey resi-

*(Continued on p. 46)*

## FY 2023 Budget Request

### BIDEN FY 2023 BUDGET REQUEST SEEKS \$74 M FOR NEXT-GEN ENVIRONMENTAL RESEARCH

*[Following are excerpts from DOT and NASA's overviews of priorities in President Biden's FY 2023 budget request that will be of interest to those involved in aircraft noise issues. The budget request was released on March 28.]*

For FY 2023, the President's Budget requests a base funding level of \$18.6 billion for FAA.

This budget request works hand-in-hand with the Bipartisan Infrastructure Law, which provides \$5 billion in advanced annual appropriations to invest in the modernization of our aviation infrastructure. When coupled with the FY 2023 President's Budget, this represents a \$23.6 billion commitment that will enable the FAA to further enhance aviation safety, bring new entrants into the national airspace, combat the effects of aviation on the climate, operationalize NextGen, and improve our nation's infrastructure.

Aviation is a significant portion of the U S economy and is critical to the nation's economic growth. This investment will ensure it remains a vibrant source for job creation and opportunity.

*(Continued on p. 46)*

## In This Issue...

**Health Effects ...** Exposure in New Jersey to an average noise level of 65 dB or higher from cars, trains, or planes during the course of a day accounted for about 1 in 20 heart attacks in the state, according to the findings of a study that will be reported at the upcoming American College of Cardiology's Annual Scientific Session - p. 45

**Budget Request...** The Biden administration's FY 2023 budget request seeks \$74 million to support FAA's Continuous Lower Energy Emissions and Noise (CLEEN) program; \$3.35 billion for grant-in-aid to airports; \$4.9 million for unmanned aircraft systems integration; and \$1.3 million to add community engagement liaisons to educate local community noise roundtables and government officials.

President Biden also seeks \$970 million to fund NASA's Aeronautics program in FY 2023, including efforts to develop a sustainable next-generation passenger aircraft - p. 45

### ***Health Effects, from p. 45***

dents hospitalized for a heart attack in 2018 using data from the MIDAS database, a repository of all cardiovascular hospitalizations in the state. The average daily transportation noise experienced at home was calculated using data from the state's Bureau of Transportation Statistics.

Patients were divided into those experiencing high levels of transportation noise (an average of 65 decibels or higher over the course of the day) and those with low noise exposure (a daily average of less than 50 decibels). A noise level of 65 decibels is similar to a loud conversation or laughter. Since noise levels were averaged over the course of the day, Moreyra said that many people may have experienced periods of relative quiet that were interrupted by louder bursts such as trucks, trains or aircraft going by.

#### **Higher Heart Attack Rate in Noisier Areas**

Overall results found that 5% of hospitalizations for heart attacks were attributable to elevated high noise levels in the state. The heart attack rate was 72% higher in places with high transportation noise exposure, with these areas seeing 3,336 heart attacks per 100,000 people compared with 1,938 heart attacks per 100,000 people in quieter areas.

Based on the relative rates of heart attack in different locations, the researchers calculated that high noise exposure accounted for about 1 in 20 heart attacks in the state.

The study is among the first to examine noise and heart disease in the U.S., but the findings align with several previous studies conducted in Europe. New Jersey is a state with many dense urban areas in close proximity to roadways, train lines and three major airports. Moreyra said other urban areas with similar infrastructure and transportation noise would likely see a similar pattern.

"As cardiologists, we are used to thinking about many traditional risk factors such as smoking, hypertension or diabetes," Moreyra said. "This study and others suggest maybe we should start thinking about air pollution and noise pollution as additional risk factors for cardiovascular disease."

While the study did not investigate the biological mechanisms behind the association, Moreyra said noise can cause chronic stress, disturbances in sleep and emotional distress such as anxiety and depression, which could impact cardiovascular health. Chronic stress is known to cause hormonal changes linked with inflammation and changes in the blood vessels that are associated with heart disease.

Living near roadways and other transportation infrastructure also means greater exposure to vehicle exhaust and other forms of particulate air pollution. Previous studies have linked particulate air pollution with cardiovascular damage and increased rates of heart disease.

"Air pollution and noise go hand-in-hand," Moreyra said. "The question is: how much of this effect is due to particle pollution, and how much is noise?"

Researchers are beginning to disentangle those factors, but Moreyra said further research is needed to elucidate the

effects of noise pollution on heart health.

The researchers did not attempt to account for demographic, socioeconomic or other health risk factors in their analysis, and they suggest further research could help tease apart the effect of noise pollution from these other factors. In addition, Moreyra said the study did not account for noise exposure at work or other locations. As a next step, the team plans to examine the data in more detail for insights into which sources of transportation noise may have the greatest health impact.

Moreyra said that a variety of policy interventions could help to reduce an individual's exposure to transportation noise at home, even in urban areas. Examples include better enforcement of noise ordinances, infrastructure to block road noise, rules for air traffic, low-noise tires for vehicles and better noise insulation for buildings.

Moreyra will present the study, "The Impact of Exposure to Transportation Noise on the Rates of Myocardial Infarction in New Jersey," virtually on April 2, at 8:30 a.m. ET.

### ***Budget Request, from p. 45***

The budget includes a proposal to realign FAA organizational resources to meet new challenges in the decades to come. This proposal includes a more focused Research and Development organization to look ahead to the future, an Integration and Engagement Office to facilitate more rapid adoption of aviation industry innovation, and a Chief Technology Officer to drive the continued modernization of the airspace system. Brought together, these organizational elements will position the FAA to meet the challenges of tomorrow.

**Unmanned Aircraft Systems Integration:** \$4.9 million and 28 FTE [full-time equivalent positions] are requested across Aviation Safety, General Counsel, and the Office of Policy, International Affairs, and Environment to support additional staffing for Advanced Air Mobility and examine new entrants' potential impacts on the National Airspace.

**Community Engagement:** \$1.3 million and 2 FTE are requested in the Office of Policy, International Affairs, and Environment to strengthen FAA's community engagement efforts by adding community engagement liaisons. The liaisons will focus on subject areas that work across all regions, while proactively educating local community roundtables and government officials. [FAA could provide no additional information on this new position.]

**Research, Engineering & Development:** \$260.5 million is requested to support continued research and innovation sustain and improve mission performance across all elements of the aviation system. This request includes sizable programs supporting the Administration priority of Climate and Sustainability. Noteworthy investments include:



- **NextGen Environmental Research:** \$74 million is requested to support efforts to develop new aircraft and engine technologies, as well as to advance sustainable aviation fuels in line with the Administration commitments on climate change and the environment Through 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, and improved fuel efficiency.

Funding from this program also supports efforts by ASCENT — the FAA’s Center of Excellence for Alternative Jet Fuels and Environment The CLEEN program is estimated to save the aviation industry 36 billion gallons of fuel by 2050, resulting in CO2 reductions that are equivalent to removing three million cars from the road from 2020 to 2050.

- **Unmanned Aircraft Systems (UAS):** \$14.9 million is requested to support research that informs capabilities such as expanded operations, small drone package delivery operations, large carrier cargo operations, and passenger transport operations. The integration of drones into the national airspace is evolving to operations predominately using electric propulsion. These operations will have a transformative impact on reducing aviation-related emissions and the goal of net-zero emissions for our economy by 2050. The requested funds also support continued efforts using drones as a learning platform for science, technology, engineering and math outreach efforts with minority K-12 students.

**Grants-in-Aid for Airports:** \$3.35 billion is requested in obligation limitation for airport grants. This request is strengthened by the Bipartisan Infrastructure Law’s further support of the nation’s airports Airport grants traditionally support projects that keep the pavement of our nation’s airports in good, safe condition. The Bipartisan Infrastructure Law includes an additional \$15 billion over 5 years that allows the program to further support pavement and other typical airport infrastructure projects plus projects that mitigate the effects airports have on our environment [including noise], as well as another \$5 billion over 5 years for projects that support airport terminal and airport-owned tower improvements and multimodal connections to airports.

- **Airport Grants:** \$3.16 billion is requested to preserve and improve critical airfield infrastructure at more than 3,300 public-use airports nationwide. This request supports our continued focus on safety-related development projects, including projects to help reduce runway incursions, mitigate the severity of runway excursions and reduce the risk of wrong- surface takeoffs and landings This request also supports the Administration’s strategic focus areas of Climate and Sustainability, Equity, and Organizational Excellence.

- **Airport Cooperative Research Program:** \$15 million is requested to carry out applied research on problems that are shared by airport operating agencies and are not being adequately addressed by existing Federal research programs.

## NASA Budget

The Biden administration’s FY 2023 budget request seeks \$970 million for NASA aeronautics research. This includes \$500 million to reduce aviation’s climate impact through efforts including a Sustainable Flight National Partnership to develop a next-generation passenger aircraft.

With the FY 2023 budget, NASA is leading the transformation of aviation in several ways:

- **Locally** – through Advanced Air Mobility (AAM), Unmanned Aircraft Systems (UAS), and use of electric Vertical and Short Takeoff and Landing vehicles, NASA is working to transform the way people and goods move through the air transportation system.

NASA is rallying emerging markets to tackle the challenges of creating an air transportation system featuring all-electric, highly automated or autonomous, efficient, and safe systems operating over the most rural countryside to the densest, skyscraper-filled urban environment. The FY 2023 budget funds NASA’s AAM mission, which aims to ensure U.S. leadership in an emerging aviation market that studies have projected to generate an annual market value of \$115 billion by 2035.

The AAM mission will collaborate with industry to mature system concepts and technologies for safe operations. NASA will complete the first in a series of four National Campaign demonstrations by industry of their vehicles and airspace management technologies. The Airspace Operations and Safety (AOSP), Advanced Air Vehicles (AAVP), and Integrated Aviation Systems (IASP) programs will execute NASA’s AAM mission.

- **Across the Nation** – NASA is enabling transformative improvements in the efficiency of commercial aviation, with particular focus on the single aisle fleet (Boeing 737-size) through developing and demonstrating integrated electric propulsion in small to large aircraft, advanced materials, advanced propulsion systems, and new ways to design and build aircraft.

The FY 2023 budget funds NASA’s Sustainable Flight National Partnership (SFNP) to accomplish the aviation community’s aggressive sustainability agenda. Through advanced vehicle technologies, efficient airline operations, and sustainable aviation fuels, collectively we are focused on reducing carbon emissions from aviation by 50 percent by 2050, compared to 2005, and achieving net-zero aviation emissions by 2060.

The SFNP will demonstrate the first-ever high-power hybrid electric propulsion system for large transport aircraft, ultra-high efficiency long and slender wings, advanced composite structures and manufacturing, and advanced engine



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technologies developed from NASA-industry innovation. The SFNP's centerpiece will be a large-scale sustainable flight demonstrator ("X-plane") to validate integrated systems and their benefits. NASA will complete the activities and projects by the late 2020's in order to transition new tools, technologies, and procedures into the next generation of large commercial aircraft. The AAVP, IASP, and AOSP execute NASA's SFNP activities.

- **Globally** – NASA is working to sustainably connect the world through high-speed commercial flight. NASA is removing barriers to commercial supersonic flight over land by demonstrating how to reduce sonic boom impacts, tackling the next challenges in local noise and investigating the potential of even higher-speed flight.

The FY 2023 budget funds NASA's Low-Boom Flight Demonstration (LBFD) mission to enable U.S. industry to lead the development of a new commercial supersonic market. Currently there exists a global prohibition on commercial supersonic flight over land that has resulted from concerns about sonic boom impacts. NASA has developed guidelines for supersonic vehicle design that, when followed, significantly reduce the annoyance factors associated with sonic booms.

NASA will build and fly a supersonic X-plane that has been designed using these guidelines over a diverse set of communities, collect the noise and community response data, and provide the data to U.S. and international regulators. These data will be used by the domestic and global regulatory communities to reassess the current commercial supersonic flight over land prohibition.

The AAVP and IASP execute the LBFD mission.

- **System wide** – NASA is transforming the efficiency and safety of the entire global aviation system through future airspace tools and system design that supports a transformed airspace system that is safe and secure, supports all these new vehicles, and is less harmful to the environment. NASA, along with industry stakeholders, is developing a long-term future airspace vision called Sky for All with a horizon of 2045.

Detailed information on the Biden administration's FY 2023 budget request is provided on the home page of the DOT and NASA websites.

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## AIRPORT NOISE REPORT

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