

University of California, Davis

2019 Airport Noise and Emissions Symposium Community Workshop

Summary of Written Input and
Workshop Results



Workshop: March 3, 2019
Presentation: March 4, 2019

Summary of Process

The 2019 Aviation Noise & Emissions Symposium held its annual Community Workshop on Sunday, March 3rd to discuss recommendations on the processes they would like the FAA and the relevant airports to adopt and implement to engage communities in NextGen PBN procedure development and implementation.

Prior to the workshop all community organizations and members were asked to submit their recommendations. These recommendations were then organized by the Planning Committee and presented at the Community Workshop.

All community members that were present at the workshop discussed the input, offered new input, and assembled the information into six key recommendations to present in the Community Involvement Session during the symposium proceedings.

This document shares those six key recommendations as well as all other recommendations that were offered before and during the workshop. While these recommendations do come from communities affected by noise issues, it must be noted that the recommendations do not apply to all communities. Each community group and geographical area is different. The recommendations should be discussed between the FAA, relevant airports and their communities to determine the best plans of action.

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Community Involvement Suggestions

Our Assignment:

**Create a consensus statement(s) outlining the elements of a preferred
FAA community engagement process
related to NextGen PBN Development and Implementation**

- ✓ **Sunday March 3rd Community Involvement Workshop**
 - 15+ community and roundtable representatives (written input requested)
 - Written input was summarized and condensed as talking points



Community Involvement Suggestions

- Participants discussed, debated and shared experiences





Community Involvement Suggestions

#1 Provide comprehensive public notice and Listening

- The FAA should provide comprehensive and timely public notice, regarding proposed air traffic/airspace changes; use plain language – include AEDT maps and any changes to current and future plans
- Notify people by first class mail and via social media
- Provide notice beyond Federal Register and Classified notices – Define broadly to include all of the community, not limited to elected officials
- Provide notice to city and county officials and airport proprietor
- Opt in/subscription notification for FAA contact for notices in new PBN procedures – avoid falsely reassuring statements when identifying “significant impacts”
- Publicize long term strategic plans, not just each step



Community Involvement Suggestions

#2 Include/Collaborate with All Community Groups

- The FAA should include communities in the decision-making process from the beginning, especially at the initiation of the design process, regarding planning, design, and implementation of NextGen procedures
- Collaboration should also include communities that are not just “close in” to the airport
- FAA should hold public meetings regarding the design and implementation of proposed PBN procedures – to include noise, subject matter experts, and include an iterative process, with defined points for community input
- The FAA should hold public meetings to discuss proposed night flight changes
- Do not confine communications only to formal roundtable groups



Community Involvement Suggestions

#3 Be Transparent

- The FAA and Airports should share data and analyses with communities in a manner that is not cumbersome and is timely (days instead of weeks/months/years)
- Data, information, and analyses should be readily available and easy to understand – use the internet to make data public.
- Visual charts and images illustrating proposed ground tracks should clearly label any noise sensitive areas that lie beneath them.
- Reestablish trust by being more proactive
- Create formal process to allow the public to track FAA deliverables
- All meetings should comply with relevant open meeting laws



AVIATION NOISE & EMISSIONS SYMPOSIUM 2019

JACKSONVILLE, FLORIDA - MARCH 3-5, 2019

Community Involvement Suggestions

#4 Listen and Consider Community Input to Seek Solutions

- The FAA should listen to community input and consider such input to seek mutually acceptable solutions to impacts from implementation of NextGen procedures
- Community outreach should be meaningful with one-on-one conversations and with time for questions and answers in an open forum with a larger audience
- The FAA should hold public workshops early in the PBN procedure development process
- The FAA should listen to all community stakeholders and not cater to one community
- The FAA should consider all community input when considering competing community demands



Community Involvement Suggestions

#5 Establish Best Practices for RoundTable

- Membership open to all communities within a certain distance from the airport
- Educational materials for Roundtable members should be created to help them be productive and effective representatives for their communities, and those materials should be shared with the public
- Properly resourced i.e. funds and subject matter experts
- FAA should encourage and support Roundtables in all Metroplex airport communities
- Roundtables should not be used to circumvent or by-pass communication with other community stakeholders



AVIATION NOISE & EMISSIONS SYMPOSIUM 2019

JACKSONVILLE, FLORIDA - MARCH 3-5, 2019

Community Involvement Suggestions

#6 Expand Community Representation on the NAC

- The FAA should expand the membership of the NextGen Advisory Committee (NAC) to include more community representatives.
- Communities should be considered stakeholders for the purposes of representation in decision making about decisions that affect communities



Community Involvement Suggestions

Our Assignment:

**Create a consensus statement(s) outlining the elements of a preferred
FAA community engagement process
related to NextGen PBN Development and Implementation**

We Provide for discussion:

- **A consensus among community and roundtable participants on the major points**
- **Where we differed, we talked it out - we still differ on a few points**
 - ✓ We added important considerations to the central themes
 - ✓ We added a 6th important consideration - Best Practices for Roundtables

WHAT DID WE FORGET – QUESTIONS ?

University of California at Davis
2019 Airport Noise and Emissions Symposium
Community Workshop

Symposium Overview

The University of California at Davis (UCD) convenes an annual symposium to address important topics facing the US aviation industry regarding aviation noise and emissions. The UCD Aviation Noise and Emissions Symposium (ANES) is the only academic institution-based program of its kind in the country. Because of its academic foundation, it is educational, informational, and interactive. A hallmark of the ANES is its inclusion of all stakeholder groups, including representatives of community groups and affected cities, towns, and neighborhoods, who are always welcome to attend and participate. The program features a Community Workshop to offer community stakeholders a forum to address their concerns and share information related to aircraft noise and emissions issues. The two and a half day program also includes participation and presentations from representatives of the FAA, the airlines, airports, and technical consultants.

NextGen and PBN

An ongoing topic of discussion at the ANES for many years has been the FAA's deployment of the Next Generation Air Transportation System, known as NextGen. The FAA began implementing NextGen in 2007 and hopes to have the system fully operating by 2025. The purpose of this extremely complicated effort is to modernize the national air traffic control system by shifting from a 1940s-era ground-based air traffic management system to a twenty-first century satellite-based air system.

A key component of NextGen is Performance Based Navigation, or PBN. This technology creates precise, repeatable, and predictable flight paths, makes straighter flight paths possible for greater aircraft throughput, and enhances airspace safety and efficiency. The PBN technology also allows more air traffic routes (planes) to fit in the same amount of airspace than can fit in the ground based system. It has essentially restructured air traffic routes at busy airports from historic dispersion patterns to more concentrated patterns for aircraft arrivals and departures.

2019 ANES Community Workshop Focus: Development of Participant Consensus to Identify a Preferred Community Engagement Process for NextGen PBN Development and Implementation

From 2009-2016, PBN procedures nearly tripled at commercial service airports across the country. Although the FAA may have notified the public in some fashion or held public meetings regarding the implementation of many of these procedures, the resulting amount and severity of community noise impacts from the use of these procedures has increased far beyond community expectations and tolerance. From the impacted community perspective, the FAA has failed to adequately engage impacted communities in PBN development and implementation.

The focus of the 2019 UCD ANES Community Workshop will be development of a consensus to identify a preferred community engagement process for NextGen PBN development and implementation to provide to the FAA and the relevant airports as described in the second document: "Solicitation of Written Input and Workshop Participation." The outcome of the Workshop will be presented at the full Symposium.

Please review and reply with questions.

Graciously,
Sandra Hall
Conference and Outreach Manager

University of California, Davis
Air Quality Research Center
sehall@ucdavis.edu
(530) 754-8375

University of California at Davis
2019 Airport Noise and Emissions Symposium Community Workshop
Solicitation of Written Input and Workshop Participation

Purpose

The purpose of this Solicitation is to encourage affected community groups to submit written input, in advance of the Community Workshop, regarding their suggestions and/or recommendations on the process they would like the FAA and the relevant airports to adopt and implement to engage communities in NextGen PBN procedure development and implementation.

Submittal Content Guidelines

1. The content of each submittal should directly address the issue described above, be clear and concise, and not exceed two type-written pages in 12 pt. font. ***The intent of this effort is to collect creative, positive, and feasible input that can be discussed at the Community Workshop and passed on for serious consideration and ultimate implementation.*** The submittal should (1) briefly describe the geographic location of the impacted community, the size and character of the relevant airport, (i.e., small, medium or large commercial service, general aviation or both), (2) the predominant type of noise issue (i.e. arrivals, departures, nighttime runway use, etc.); (3) the number and type of PBN procedures in place at the airport (if available), and (4) indicate if the FAA notified the community about the implementation of those procedures (i.e., a public meeting or some other kind of notification or public engagement effort, or none at all).
2. Each submittal must contain the contact information of the preparer of the document and of the organization he or she represents. Submittals received without this information will not be considered for discussion at the Workshop.
3. We understand that, in some cases, you may have to discuss your past interactions with the FAA, the airlines, and/or the airport in order to proposed ways to improve them. However, we ask that you keep this information brief and refrain from any general or personal criticism of these stakeholders. Our goal is to have all PBN stakeholders begin working together to find consensus on how community engagement should be conducted and keep the discussion at the Symposium at an academic level.

4. Each submittal must be sent to:

David F. Carbone, Symposium Program Committee Member
Email: airmandfc@gmail.com; Phone: 650/219-3329

Anne Kohut, Symposium Program Committee Member
Email: editor@airportnoisereport.com

Sandra Hall, Conference and Outreach Manager, UC Davis
Email: sehall@ucdavis.edu Phone: (530) 754-8374

All submittals must be sent to the above to be received no later than **Thursday, February 14, by 5 pm PST.** Any submittals received after this deadline will not be considered. The submittals received by the deadline will be reviewed by Symposium Program Committee Members to insure that they comply with these guidelines. Those that comply will be considered for discussion at the Workshop.

Workshop Participation/Outcome

Due to the limited amount of time for the Workshop, participants should come prepared to discuss the content of their submittals. The intended outcome of the Workshop will be a final work product to be presented at the full Symposium by a designated Workshop participant. The content of that document will be based on the input from the submittals and the consensus developed in the Workshop.

Thank you in advance for your participation in the Community Workshop.

Please review and reply with questions.

Graciously,
Sandra Hall
Conference and Outreach Manager

University of California, Davis
Air Quality Research Center
sehall@ucdavis.edu
(530) 754-8375

REVISED DRAFT

11/20/18

University of California at Davis 2019 Airport Noise and Emissions Symposium Community Workshop Solicitation of Written Input and Workshop Participation

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University of California at Davis
2019 Airport Noise and Emissions Symposium Community Workshop
Solicitation of Written Input and Workshop Participation
Page 2 of 2

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Email: Phone

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Thank you in advance for your participation in the Community Workshop.

**List of Responders to 2019 UC Davis Aviation Noise and Emissions Symposium
Solicitation for Community Input for Community Workshop Discussion
RE: a Preferred FAA Community Engagement Process Related to
NextGen PBN Development and Implementation**

Oddvar Tveit

City of Tempe, AZ
Airport: PHX

Thomas Dougherty

Fair Skies Nation
Airport: BOS

David Goebel

Vashon Island Fair Skies
Airport: SEA

**Anne Hollander, Janelle Wright,
And Gretchen Gaston**

Montgomery County Quiet Skies Coalition
Airport: DCA

Catherine Dunlap

O'Hare Noise Compatibility Commission
Airport: ORD

Jennifer Landesmann

Sky Posse Palo Alto
Airport: SFO

Marie-Jo Fremont

Palo Alto, CA resident
Airport: SFO

Mark Shull

Palo Alto, CA resident and
Chevy Chase, MD resident
Airport: non specified

Darlene Yaplee

Palo Alto, CA resident
Airport: SFO

Robert Holbrook

Mountain, View, CA resident
Airport: SFO and SJC

David C. Pearson

Idyllwild, CA resident
Airport: LAX

Steve Dreiseszun

PHX Historic Neighborhoods
Airport: PHX

Ellery Kuhn

Sacramento, CA resident
Airport: SMF

Janet Mceneaney

Queens Quiet Skies
Airport: LGA and JFK

Debi Wagner

Quiet Skies Coalition
Quiet Skies Puget Sound
Airport: SEA

City of Tempe
Department Name
Mail Stop 00-00
PO Box 5002
Tempe, AZ 85280
www.tempe.gov



To: David F. Carbone,
Anne Kohut
Sandra Hall

RE: UC Davis Solicitation of Input to 2019 Airport Noise Emissions Symposium Community Workshop

To help discussions at the 2019 Airport Noise Emissions Symposium workshop the UC Davis has asked participating, affected communities to express what they would like the FAA and relevant airports to adopt and implement to engage communities in NextGen PBN procedure development and implementation.

1. The City of Tempe, Arizona is located directly east of the Phoenix Sky Harbor International Airport (PHX) three parallel runways and the City of Phoenix southeast border. The Phoenix Sky Harbor International Airport is a large commercial service airport, ranked in 2017 as the 13th busiest airport in the US based on passenger volumes.
2. Confined flight paths with the implementation of NextGen is the predominant noise issue together with occasional deviations from RNAV prescribed flight paths; on departure not aligning with initial SID waypoints, and aircraft intercepting a final, stabilized approach late before landing during busy hours causing occasional maneuvers by arriving planes over residential areas at low altitudes with elevated power settings.
3. The implementation of PBN departure procedures on September 18, 2014 expanded PHX RNAV SIDs from 7 to 9.
4. No prior public meetings conducted because the new SIDs were considered to qualify for CATEX under FAA regulations. The published west configurations of the RNAV SIDs were subject to petition for review by the City of Phoenix and the Phoenix Historic Neighborhood Coalition in 2015. The petition resulted in ruling by U.S. Court of Appeals D.C Circuit to vacate the FAA's decision to publish the controversial RNAV SIDs and agreement on community involvement between the FAA and petitioners for the process to revert runway west flow departure headings back to SID headings in place before September 18, 2014.

Community Representation

The City of Tempe has an intergovernmental agreement with the City of Phoenix, the owner and operator of PHX from 1994 regarding noise mitigation flight procedures over Tempe for jet and large turboprop aircraft operating at PHX. To monitor the implementation of the agreement and give the city advice about how to

address airport impacts the Mayor of the City of Tempe has appointed 9 residents to serve on the City of Tempe Aviation Commission.

City Commission Suggestions

1. The Commissioners have recommended that the City establish a regional forum with aviation and air traffic expertise that can serve as a competent and trustworthy communication link between the FAA, ATO and the communities. The city currently hosts Phoenix Airspace Users Working Group (PAUWG) meetings every quarter. The group was created in 1999 by the local TRACON manager and is chaired by the PHX TRACON and the Arizona Business Aviation Association. Air traffic planning is addressed and discussed from a civil and military airspace user's perspective. The group's public meetings are appreciated as forum for keeping the local aviation community updated on air traffic and flight safety topics. The goal is to establish a place similar to the PAUWG where; a) representatives for the agency and the airlines are not feeling trapped by hostile communities, but open to establish communication conducive to disclosure and discussion of plans and procedure designs outside the ATO structure, and; b) include representatives from major airlines to address operational practices and their impact on quality of life under the flight paths, and c) broaden the horizon of possible routing and air traffic operational alternatives that can give something to all parties.
2. The Commissioners also recommended that the City because of its proximity to the PHX runways should be considered a formal stakeholder in actions which impact air traffic movements close to PHX. The Mayor of Tempe asked in a letter dated June 29, 2016 that affected communities should be integrated as formal stakeholders in NextGen implementations process. As supporting arguments, the city mentioned statements made in connection with the FAA Reauthorization Act of 2016 by the late Arizona Senator John McCain and then Arizona Senator Jeff Flake about the need to improve the NextGen flight procedure review process and about the need to create an airspace management advisory committee.

Summary

- The aftermath of the U.S. Court of Appeals D.C Circuit ruling amendment of February 7, 2018, where the court limited the original ruling to the west flow versions of the September 18, 2014 RNAV SIDs and recognized the agreement made on the process to reinstate previous SIDs, has shown that the agency keeps a clear scope of not engaging with the communities unless it is required, and well organized in a workshop format, where plans are well anchored in an internal hieratic structure designed to process action plans for optimized air traffic flow.
- The FAA should establish criteria for when plans for potential airspace actions should require a broadened stakeholder process independently from NEPA requirements and the agency's CATEX authority.
- Communities should organize themselves as they see most appropriate. The FAA's community involvement process needs a permanent regional counterpart that can represent several affected communities and serve as an agency with insights to address impact issues and advocate operational constraints/mitigation practices and alternatives upfront before the FAA's PBN route designs are finalized and ready for publication. So, whether this means creating an office or agency under the cooperative umbrella of a regional Metropolitan Planning Organization (MPO) or through an airport round table, community interests need to have a voice together with airports, air traffic and airlines as a recognized and integrated stakeholder in NextGen PBN procedure development and implementation.

Oddvar Tveit

Environmental Quality Specialist

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2019 Airport Noise and Emissions Symposium Community Workshop

- (1) **The Amendment.** The FAA's statutory mandate is solely to ensure aircraft and passenger safety and air traffic efficiency. Legislative amendment is required to add overflight noise and pollution minimization to the FAA statutory mandate.
- (2) **Purpose.** This proposed amendment to the FAA statutory mandate addresses overflight noise and pollution impacts on communities surrounding commercial airports resulting from Next Generation Air Transportation System ("NextGen") concentrated and low-altitude flight paths and airspace redesign. Communities' should support its enactment.
- (3) **Background.** Using NextGen satellite Performance Based Navigation technology, the FAA has implemented at commercial airports its modernized aircraft guidance system. This includes its Wide Area Augmentation System (WAAS) enabling area navigation (RNAV) utilizing global positioning system (GPS) technology, including Required Navigational Performance guidance. Dates of implementation of NextGen WAAS-RNAV-GPS technology vary by airport and runway following NextGen rollout in 2007 with significant implementation in 2011 and thereafter.
- (4) **The Problem.** NextGen's employment of satellite-based technology comprising Wide Area Augmentation System (WAAS) enabled Area Navigation (RNAV) Global Positioning System (GPS) guidance, including Required Navigation Performance, allows the FAA to specify precise, narrow aircraft arrival, approach and departure paths with planes flying closer together and at altitude less than 3 or more degrees glideslope. As a result, planes fly repeatedly over the same residents as if on a narrow sky-rail causing and concentrating noise and emissions. Recurring noise and highly concentrated emissions of air pollutants resulting from these narrow and low-altitude flight paths are damaging the health and welfare of underlying communities. Aircraft on these narrow flight paths fly closer together and at much lower altitudes than before, seriously exacerbating the harmful impacts of the noise and pollution for underlying communities and residents and creating safety concerns. However, **NextGen** era WAAS enabled RNAV-GPS technology **is fully capable of providing multiple, dispersed aircraft flight paths, a so-called "family of paths" that would relieve the heavy concentration of single-path air traffic over communities by restoring aircraft dispersion to the level prior to the present PBN single-path implementation.**
- (5) **The Amendment: Restoring Dispersion to Approach and Departure Flight Paths.** This amendment would require the FAA to use all currently and historically available methods, and to develop and implement new methods as needed, in order to mimic the dispersion, altitudes, and historical ground paths within 25 miles of airports that were present before it implemented satellite-based technology as utilized by NextGen. These

changes will reduce the impacts of noise and emissions on underlying communities in recognition of the fact that concentrated paths create untenable noise and emissions for citizens on the ground, and that decades of land-use planning and home ownership decisions were based on historical and dispersed paths. Planes flew safely on dispersed paths prior to NextGen implementation using technology which has been improved upon by NextGen itself. The amendment provides that FAA shall implement measures using NextGen WAAS-RNAV-GPS technologies to achieve overflight dispersion levels existing at an airport one year before initial NextGen era test or use of WAAS-RNAV-GPS technology at that airport runway in order to equitably distribute aircraft in the dispersed manner as at that prior year. Modern aircraft flight management systems (FMS) are modular in form, allowing additional flight paths to be added or modified without requiring recertification of the FMS. That will facilitate implementation of a dispersed family of paths for each runway.

- (6) **The Amendment: Approach, Altitude and Glideslope.** Under FAA practice, approaching aircraft should maintain an altitude no lower than that resulting from a three degree glideslope. To alleviate overflight noise, the proposed amendment makes that practice mandatory for all approaching aircraft within 25 miles of an airport, except in specified instances.
- (7) **The Amendment: Highest Safe Departure Altitude.** To alleviate overflight noise, the amendment requires FAA to implement measures that require all departing aircraft to attain and maintain the highest safe departure altitude up to a distance of 25 miles from an airport, except in specified instances.
- (8) **The Amendment: Reporting.** The FAA shall report to the appropriate Congressional Committees its progress in implementing these measures, including a report of single event noise exposure level (SEL) comparisons for arriving and for departing overflights, before and after such implementation.
- (9) **Final Comment:** The concept of using the NextGen technology to implement a family of flight paths rather than a single flight path to/from each runway, so that aircraft are dispersed as they were in the year prior to WAAS-RNAV-GPS implementation, has been adopted in the Netherlands. MIT's Lincoln Labs FAA consultant has noted that a "**family of paths**" is a feasible way to use the same technology to restore overflight dispersion. Because each plane approaching the same runway must follow the plane ahead of it by three miles distance (one minute at 180 mph) a family of paths does not increase the number of aircraft arriving at a runway compared to the present single track path. FAA presently has no mandate to adopt any measures such as those provided by this amendment. Without legislative amendment to the FAA mandates, the extreme burdens imposed by PBN on communities surrounding 45 major U.S. airports in 30 states, and others, will continue. Community efforts without a new legislative directive to FAA are not enough: the FAA will argue that its safety and efficiency mandates are exclusive.

Vashon Island Fair Skies
PO Box 1250
Vashon, WA 98070

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



Dedicated to restoring the pre-NextGen dispersed arrival paths and procedures at Seattle/Tacoma International Airport that had been in place since the introduction of commercial aviation to the Puget Sound region, decades ago.

UC Davis 2019 Airport Noise and Emissions Symposium: Written Input 8 February 2019

ATTN: David F. Carbone, Anne Kohut and Sandra Hall

Hello,

Thank you for this opportunity to provide written input to the Community Workshop. This year's location in Jacksonville, FL presents too great a logistical challenge for our organization to participate in person. If future years go back to the West Coast, we look forward to attending.

Vashon is a rural Island in the Puget Sound West of Seattle and accessible only by ferry. The isolation imposed by this three-and-a-half-mile moat imbues a very rural, natural, and almost wilderness character to the Island. The natural peace and quiet are the primary draw for individuals whose quality of life absolutely depends on these attributes and they accept the many burdens of living on an Island as the cost for this peace and quiet. The FAA choosing to concentrate an entire region's aviation noise in a razor sharp PBN RNAV (~250 downwind arrivals a day in Southflow) over a community of people who are so hyper-sensitive to noise they marooned themselves on an Island to get away from noise, is really nothing short of sadistic.

Vashon's natural character was stolen in mid-2015 when two PBN arrival RNAVs (HAWKZ & MARNR) were substantially implemented after a FONSI Record of Decision in November 2012 as part of an EA. There was zero outreach to the only community that would be negatively affected by the introduction of the RNAVs: Vashon Island. This has become a pattern with FAA EAs and EISs: outreach is only conducted in locations far from the areas impacted by the proposed change, which in our case, was literary overseas. Also, by waiting a few years between the official Record of Decision and actual implementation, legal responses become much more challenging by the time the impacted communities are assaulted by the change and frantically try to find out what's going on.

KSEA (Seattle-Tacoma International Airport) is the 9th busiest U.S. airport with 438,391 operations in 2018. While still below the year 2000 record (445,677), it has increased ~38% in the past five years after Delta decided to create their West Coast hub here to compete head to head with Alaska Airlines.

To add insult to injury, the NextGen change was marketed as "Greener Skies Over Seattle" and was supposed to reduce fuel wasting level-offs. In fact, the distance in level flight per arrival has *increased* 40% since the PBN introduction due to substantially lower altitudes. In short, Westside downwind arrivals now get low early, and then fly level for extended distances until final approach.

The below diagram shows the most impactful new PBN: The Westside downwind arrival RNAV in Southflow (~80% of the time around here). The HAWKZ RNAV specifies 6000 feet at waypoint VASHN, but they are often much lower, especially late at night. That's another big problem.

NextGen HAWKZ Arrival (~250 a day in KSEA Southflow)

Longitude: -122.4553



The requested topic for suggestions on “community engagement” really misses the point. While the FAA’s engagement process is intentionally deceptive and designed to keep the changes secret from those most affected by them, the issue is not engagement on PBNs, it’s PBNs in and of themselves. They are fundamentally unjust. Yes, it would be nice if the FAA informed people that everything they cherish in their lives is about to be destroyed, but it’s the drawing of these arbitrary lines of ruined lives and environmental devastation that would be breathtakingly immoral in a police state, but is just astonishing that it’s happening in the United States of America and our government of, by, and for the people is doing nothing to stop it.

That being said, in the spirit of providing “creative, positive, and feasible input” I do have a suggestion. The most cruel aspect of a PBN, its geographical precision, could actually help in “community engagement”.

When a PBN is being proposed, all residents within 1KM on either side of the part of the proposed track which would have traffic lower than 10,000 feet above ground level MUST be notified by first class mail.

During last October’s AAAE/ACI-NA Noise Conference in Indianapolis, this topic actually came up in a surreal moment during the “Implementing NextGen Procedures” presentation. An attendee asked how the FAA informs people that will be affected by a NextGen PBN introduction. Beth White (FAA) – pretty sure it was her, though it might have been Nancy Young (Airlines for America) – answered that they put ads in newspapers and such. He asked again how they notify the people directly under the newly concentrated PBN. She mentioned something about social media I think, and he again asked, with some exasperation, don’t you just mail notices to those people under the proposed PBN? She stared at him as if he was speaking a foreign language, and after an awkward silence said something to the effect of, “why would we do that”? The message was clear. The purpose of community engagement is not to actually engage, but rather to do the least required to check a legal box and avoid, at all costs, tipping off the most affected people that their lives, as they knew them, will soon be shattered, and there’s nothing they can do about it.

Sincerely,

David Goebel, david@vifs.org, President, Vashon Island Fair Skies

Montgomery County

→ Quiet Skies Coalition

February, 2019

Dear Mr. Carbone, Ms. Kohut, and Ms. Hall,

We are submitting the attached recommendations regarding community involvement in NextGen PBN procedure development on behalf of the Montgomery County Quiet Skies Coalition (MCQSC) for discussion at the 2019 ANE Symposium.

MCQSC comprises approximately 30 communities in Montgomery County, MD located between 8-15 miles northwest of the Ronald Reagan Washington National Airport (DCA). DCA serves the greater Washington, DC metropolitan area. It is owned by the Federal Government and operated by the Metropolitan Washington Airports Authority (MWAA). The airport was built to be a regional airport but has grown to become a national hub. A single runway (RWY 1-19) is used for most commercial flights.

Since 2013, the FAA has altered both approach and departure procedures such that our communities, most of which were not previously impacted by airplane traffic at all, are now impacted with either departures or approaches all day, every day. Implementation of PBN procedures has exacerbated the impacts. Noise complaints have skyrocketed. MWAA created a Community Working Group (CWG) in 2015 to recommend noise mitigation measures, but the FAA has not yet acted on any of its recommendations.

In 2015, citizens' associations in the District of Columbia challenged a new DCA departure procedure that created a high-volume departure ground track over historic Georgetown communities. The Court determined that the Georgetown petitioners did not show reasonable grounds for filing beyond the 60 day statute of limitations. In 2018, the State of Maryland filed suit stating that the FAA failed to comply with federal laws prior to creating new, high volume DCA approach procedures over noise-sensitive areas in Maryland. That case is pending.

Like other communities 0-30 miles from major airports, our members seek effective solutions to increased noise and emissions caused by the new high frequency, lower altitude, channelized PBN procedures.

Sincerely,

Anne Hollander, Janelle Wright, and Gretchen Gaston on behalf of MCQSC
(mcquietskiescoalition@gmail.com)

Community Involvement in PBN Procedure Design and Implementation:
Suggestions and Recommendations

Minimizing noise and emissions over homes, schools, parks and recreation areas **must become a key objective in PBN procedure design if the FAA and airports are to gain the trust of aviation impacted communities.** To accomplish this goal, a variety of steps should be taken. It is critically important that *more accurate and meaningful noise data be collected and incorporated into PBN procedure designs.* Noise modeling methods currently in use do not capture the real impact of PBN procedures, especially on communities further from the immediate vicinity of airports; therefore, noise modeling should be validated against actual noise measurements on the ground and noise monitors should be placed in locations that will capture the impacts from PBN procedures. From a procedural standpoint, *noise experts should be involved at every stage of PBN procedure design.* It is also essential that *cumulative impacts of multiple procedures and/or multiple airports be analyzed and considered.* FAA procedure designers should ask, “are the same communities burdened with departures and approaches? Are the same communities burdened by procedures from multiple airports? If so, how can we mitigate the burden on these communities?”

Building trust and effective working partnerships with communities also requires **sharing timely information with the potentially affected communities.** *Notification must actually reach the potentially affected communities,* e.g. by: (1) letters to city and county officials, (2) notices on neighborhood social media sites (such as NextDoor), (3) notices on the FAA’s own social media platforms (such as Twitter) and (4) an opt-in mechanism for people to receive notices about pending PBN procedures. All potentially impacted communities should be notified *at the beginning of the PBN design process,* with sufficient time to provide meaningful input.

Trust will also be improved when the **FAA’s notifications describe in plain English the proposed changes and potential impacts, both positive and negative.** *The FAA should be frank about the fact that PBN procedures will concentrate noise over fewer people and that complex decisions must be made about how to share and minimize the impacts.* Notifications should *avoid misleading or falsely reassuring statements* -- for example, they should avoid stating that new PBN procedures will have “no significant impact” -- terminology that has a very specific regulatory meaning to the FAA and a completely different meaning to the public.

Information that communities need should be understandable and readily available, e.g. on websites. Visual charts and images illustrating proposed ground tracks *should clearly label any noise sensitive areas* that lie beneath them, including neighborhoods, roads, schools and parks. Proposed and actual *changes to the number of flights, noise levels, altitudes, and geographic*

concentration should be provided. The FAA and airports should use *a variety of metrics* (never just the DNL) for modeling, anticipating, and communicating potential noise impacts to communities.

Effective feedback loops must be created. *Feedback opportunities to the FAA and airports should be easy to access and use.* Feedback that is received should be acknowledged and summarized, and information about how it is being used should be provided.

Airport roundtables and working groups should be designed to be effective, with an appropriate mix of expertise and community representation. FAA personnel who engage with communities *should be sufficiently senior level*, ie., have the competence and authority to make changes, and they *should attend the roundtables on a regular basis* because continuity is essential for building relationships and shared knowledge. *ATC personnel* also should participate in these groups, as they have particularly detailed knowledge of the operational airspace constraints within which the FAA must operate. Finally, all airport authorities should *engage the services of subject matter experts* to help bridge the communication gaps that often exist between the FAA and the lay public.

Community outreach meetings should be designed to allow effective and meaningful interactions and information sharing. These meetings should include time for FAA and airport personnel to have both one-on-one conversations with the public (e.g., using storyboards) and time for questions and answers in front of the wider audience. A combination of formats helps to ensure that community members can ask narrow and specific questions while also seeing the big picture. It is also essential that the FAA *follow up after such meetings by providing clear statements of next steps.*

For community input at the national level, the NextGen Advisory Committee (NAC) should have better community representation. The NAC provides high level recommendations and policy suggestions to the FAA that often have significant implications for communities near airports. However, this important advisory committee is dominated by industry and currently includes only one community representative. *The NAC charter should be rewritten to give aviation impacted communities meaningful representation on this important national forum.*



O'Hare Noise Compatibility Commission Submission

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Dr. Raymond J. Kuper
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Chair, School Committee

Jamie Rhee
Commissioner of Aviation

Frank A. Damato
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Catherine Dunlap
Chair, Technical Committee

Jeanette Camacho
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Members:

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Downers Grove
DuPage County
Elmhurst
Elmwood Park
Franklin Park
Glenview
Hanover Park
Harwood Heights
Hoffman Estates
Itasca
Lincolnwood
Maywood
Melrose Park
Mount Prospect
Niles
Norridge
Northlake
Palatine
Park Ridge
River Forest
River Grove
Rolling Meadows
Rosemont
Schaumburg
Schiller Park
South Barrington
Stone Park
Wayne
Wood Dale

School Districts:

2, 7, 48, 59, 63, 64, 80, 81, 84,
84.5, 85.5, 86, 87, 88, 89, 100,
205, 207, 214, 234, 299, 401

1. The City of Chicago is located on the western edge of Lake Michigan near Indiana and contains two airports, O'Hare and Midway. O'Hare is the busiest airport in the U.S. and is a very large commercial service airport.
2. Noise at O'Hare is from arrivals, departures, nighttime runway use and ground run ups.
3. There were numerous airspace changes as part of the O'Hare Master Plan with the Record of Decision in 2005 and it would be cumbersome to list them all (RNAV, STAR, GIS etc..) Changes may be under consideration currently as a part of the Fly Quiet Committee work on a plan for full buildout.
4. Changes to the O'Hare airspace were designed through numerous public meetings during the O'Hare Modernization Program's (OMP) major runway realignment. Extensive civic dialogue, agency notification, and public involvement and outreach efforts were conducted for the OMP with the Record of Decision published in 2005. The 2015 re-Evaluation took another look at the plan because runways were built out of order. This re-Evaluation included public outreach with monthly Technical meetings with the ONCC for updates before publication and 4 public workshops upon publication at which ONCC members answered questions for visitors. Once the program is complete in 2021 and in operation for a few years, the FAA may make refinements to the procedures if needed. In addition, the ONCC is discussing changes to the Fly Quiet Program that may involve new procedures. The FAA just held 4 workshops and ONCC was there again.

How public outreach is structured, and how it functions is key for ensuring transparent interactions with the public. A community forum that is open and which functions well provides the widest possibility for discussion, power, and good results.

The O'Hare Noise Compatibility Commission is comprised of representatives from wards and municipalities and school districts surrounding Chicago. The elected leader of each of these jurisdictions either serves on the ONCC or appoints someone to serve in their place. Those entities on the ONCC are admitted by vote of the group and their submission must be accompanied by a legal document affirming joining the ONCC. The ONCC has legal status with the City of Chicago by an official agreement which provides funds for the group to operate, and the 2005 Record of Decision for the O'Hare Master Plan delineates the necessity for the FAA and the City to work with the ONCC on changes to the night flights.

Leadership of the ONCC meets regularly with the FAA Regional Administrator and upper level staff for discussions on controller operations and other management issues. ONCC members frequently tour the O'Hare tower, the TRACON, and the Chicago Center.

The chair of the Technical Committee opened a line of communication by inviting the chair of the Cargo Area Managers Association (CACMA) to a meeting and followed up by attending meetings and speaking at the CACMA monthly meeting especially concerning night flights.

Fly Quiet reports are sent to airlines, the major carriers send representatives to observe ONCC meetings, and ONCC membership tour facilities of the major airlines.

The ONCC provides ample information to the public both on line and at meetings. This information also includes training specifically designed for members, Airport 101 and 201, and Noise 101 and 201. The 201 series were recently debuted at the Technical Committee to further understanding and discussion especially in light of the Fly Quiet Plan currently under consideration and development included input from the FAA.

Geographic representation presents the opportunity for fairness and clarity in discussion.

The public is given information on the representation by listing each entity on the ONCC. Leadership of the ONCC is listed on the website and printed materials. The group must function under the Open Meetings Act and Freedom of Information Rules. There is transparency in this structured community interaction.

The composition of the group also provides opportunity for structuring balanced discussions. For example, the Fly Quiet Committee is appointed by the Chair of the ONCC. The Chair appointed a representative sample of the group to the committee to reflect the population that surrounds the airport, reflecting East & West and North & South of the airport. This body engages in the wide ranging discussions that may lead to further changes for navigation and the airport at night and operates with these guiding principles.

The work of the Fly Quiet Committee will be guided by the following principles in the identification and evaluation of potential modifications to the Fly Quiet Program:

- Maximum safety, reasonable efficiency and noise reduction must be achieved with all potential initiatives, including compliance with current and possible air traffic control directives set forth by the FAA for various operating conditions.
- Runways will continue to be selected to optimize safety, support efficiency and achieve noise reduction based on peak hour arrival and departure demand, wind conditions and runway availability, including consideration of runway scheduling requirements for construction, snow removal, runway maintenance, runway inspection and other operational needs.
- The CDA will analyze alternatives as requested by the ONCC and present the findings to the ONCC. Once the ONCC makes formal recommendations to the CDA, CDA will make a submittal to the FAA. Based on the feasibility and impacts of the recommendations, the FAA will then make a decision on the applicable processes for review and implementation.

Respectfully Submitted by:

Catherine Dunlap

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O'Hare Noise Compatibility Commission Member, 41stWard Appointed Representative,
Technical Committee Chair, Member Fly Quiet Committee

Jennifer Landesmann
Sky Posse Palo Alto
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Thank you for the opportunity to provide input for the UC Davis ANE Symposium Community Workshop. My input reflects personal observations as an activist with Sky Posse Palo Alto.

Palo Alto is 21 miles from San Francisco International Airport; 15 miles from San Jose International Airport; 28 miles from Oakland International. Palo Alto has a General Aviation airport and is 10 miles from the San Carlos GA Airport. The predominant type of noise causing community outcry is from SFO arrivals. Three routes/procedures from the South; North, and West comprising 60% of SFO arrivals converge over Palo Alto - and SJC traffic when in reverse flow.

Notification to the public about Northern CA Nextgen changes was made in public libraries. Days before public comment was due on an Environmental Assessment, Congresswoman Anna Eshoo alerted our City. The City of Palo Alto submitted questions about potential altitude changes, FAA acknowledged the question and responded that it did not need to answer if altitudes would change.

A preferred community engagement process

It should be distinguished that FAA is a regulator, airports are not. The role of FAA is thus greater than that of airports. Community engagement begins and ends with FAA leadership.

The benefits from aviation operations are well recognized; economic; social; access to goods and services; global reach, and more. Aviation by-product - noise and particle pollution, are also known. The core question that I hope the Community Workshop will focus on is - what are best practices for handling industrial pollution? Best practices likely fall into quantifying; minimizing; protecting people and the natural environment, and monitoring. While FAA has set some rules to help regulate aviation impacts, policies and practices are under scrutiny after the Phoenix Catex ruling, and new laws in the 2018 FAA Reauthorization direct FAA to evaluate noise metrics.

With this backdrop, I suggest the following four elements for preferred community engagement.

FAA's environmental role: When FAA leadership and staff engage in airport community meetings, the mission of safety and efficiency is emphasized. Rarely will FAA speakers mention FAA's environmental hat. This results in communities made to feel that FAA is doing the public a favor (by engaging), which in turn reduces the standard and quality of discussions. If FAA staff is unaware or can't acknowledge FAA's privilege and responsibility of setting environmental policies and processes to manage noise and aviation pollution, it's a problem. Preferred

community engagement needs an FAA that will articulate their environmental role and strive for best practices because *the future is here*, and people need to know and see repeated signals about who is in charge of caring about impacts to the natural and human environment.

2018 FAA Reauthorization: Best practices rely on methods, tools, policies, and processes which are **as fair as possible**. The noise provisions in the 2018 reauthorization are critical steps for preferred community engagement. Until FAA follows through on the reauthorization, asking local elected officials or industry to vote/decide up/down on potential airspace changes invites arbitrary treatment. For example communities are being asked to get permission from neighbors to overfly them (without any requirement to analyze potential impacts and an impossible request because everyone just says – no) and when airlines ask for procedures, they get help from FAA to pass them through with Catex. We have heard of 40,000 requests to the IFP gateway, is this why community asks are not attended to for years? –preferred community engagement needs to have adequate conditions and resources to handle competing demands.

Leveling the playing field: Airlines have been leading on the FAA technical working groups. The folks who don't have incentives to be concerned with noise are in charge - resulting in FAA actions which are industry to-do lists. Airports habitually then sell capacity increasing supports as *noise reducing* (“TBFM”, “OPD”, “fixing Class B”, “pilot training”, “reducing vectoring,” “GBAS”), without any substantiation that noise is reduced. Or insist that “nothing is changing” when 2% projected operations growth result in 200% more traffic on a route. Industry asks are rushed to implementation, resulting in a game of “gotcha” as the only recourse for communities, is to appeal in court within 60 days. **A preferred community engagement process would secure representation and involvement in equal standing with industry interests very early on** - in working groups, committees, planning meetings, and for post implementation reviews. As it is, we could use a “time out” on statutes of limitations so that we don't have to spend time using the courts to get FAA attention, or worse FAA threatening to not work with communities (to dissuade people from asserting on NEPA statutes). It would be a giant success for the workshop to recommend FAA to accept tolling statutes of limitations for all projects in 2019.

Timely data, study, and analysis - Documentation: Impacts assessments need to be documented for all proposed airspace actions – a good practice could be AEDT screening maps published alongside every IFP gateway request. In the absence of data and impact assessments NEPA statutes get routinely abused, non-answers are given to questions from the public; and Part 150's have a laissez faire approach. As FAA reminds - everything is interconnected and so we need to employ available state of the art analytic tools and methods to evaluate alternatives in a context of a system wide look. Whether FAA needs more resources to do this, or if airports should help, **this cannot wait**. Citizens have been relying on Freedom of Information Act requests to get data, or to understand how the current routes came about but analytic tools like FAA's own Aviation Environmental Design Tool are barely used (or understood).

I am Marie-Jo Fremont, a Palo Alto, CA resident who has lived in the same house for 22 years. I was not aware of airplane noise prior to March 2015 when the FAA started to deploy NextGen procedures. I have never been notified of any FAA changes prior to their implementation, before 2015 or even now as the FAA continues to modify procedures in the NorCal Metroplex. I now live like under a runway that operates almost on a 24-hour basis. I live in what was a quiet urban area where now **3 SFO arrival routes are vectored and converge at altitudes between 3500 ft and 5000 ft** (SERFR3, BDEGA-west, and OCEANIC) and where **50% of SJC reverse flow arrivals are also vectored simultaneously at altitudes between 1800 ft and 3000 ft**. At night, I am awakened by **daily cargo plane departures from OAK or SFO, daily Oceanic arrivals** (to SFO or OAK) **between 4 and 5 AM**, and the **daily UA 955 TLV-SFO flight ~ 5:30 AM**. My story is not unique. **Over 350 commercial jets fly over Palo Alto at low altitudes every day. Planes every 90 seconds apart are common occurrences**. Other cities are impacted as well. Hundreds of thousands of residents who do NOT live in the close vicinity of SFO, SJC, or OAK have been deeply affected by NextGen and continue to be despite all our efforts over the last 3 years in asking the FAA to reduce noise.

Since 2016, I have seen 3 different FAA Regional Managers for the Western Pacific Region, attended countless committee meetings in which the FAA participated, reviewed all FAA documentation provided, spent thousands of hours to educate myself on aviation topics, and worked diligently to ask for and propose solutions. I have yet to see the FAA as a partner that is committed to solving the problems they created with NextGen.

I have listed below key questions on Community Engagement that the FAA should reflect on in designing an effective engagement process. I have also indicated my positions on such questions.

Will Community Engagement be an **integral part** of the FAA NextGen program? Community Engagement must be a fundamental mechanism to reduce substantially the noise & emissions impact that NextGen procedures have had and continue to have on populations. The FAA deployed NextGen procedures without considering the impact on populations on the ground and justified the changes using inadequate noise models and metrics.

What is the **purpose** of Community Engagement? What does the FAA want to achieve? The FAA must **commit to reducing substantially the noise & emissions impact of NextGen for existing and future procedures**. Impact on people must be **as important as efficiency**. Designing procedures that minimize noise must be as important as designing them to save fuel or increase throughput. Note that minimizing noise is NOT characterized by the Net Noise Reduction Model developed for CatEx2.

What FAA **resources** will be allocated for Community Engagement? The level of engagement will be based on the resources and type of resources that the FAA will allocate to the process. The Community Engagement process should **not be a PR exercise**. In order to restore the quiet environment that people enjoyed before NextGen, the FAA **must dedicate resources who have**

authority and technical competence and are eager to work side by side with the Community in developing solutions that will reduce noise.

What specific **results** does the FAA want to achieve through Community Engagement? Our Bay Area communities have made the **same requests multiple times for the last 3 years**. To this date, the **FAA has not provided solutions**. Many requests have been deemed “not feasible” without explanations. On the other hand, the FAA unilaterally made changes (such as SERFR3) or is considering changes (such as PIRAT) without community consultation or information about the potential impact of the changes. For instance, is the FAA committed to solving the night Oceanic arrivals problem? Reducing concentration near the SIDBY waypoint? Changing the end of the STAR procedures to take advantage of the future GBAS landing system at SFO? Reducing speeds to reduce noise without compromising safety? Dispersing vectored flights?

How will Community Engagement **change how the FAA operates**? The FAA **does not have any public notification process** about upcoming changes. Why can't the FAA implement a subscription notification process as many companies have? The FAA **does not collaborate with technical consultants from the Community** to develop solutions.

In addition, the FAA needs to regain the trust of communities. Due to the FAA **lack of transparency** (for instance, analyses details are not provided unless one makes a FOIA request) and **repeated examples of uncooperative behavior or questionable statements**, communities no longer trust the FAA. The FAA **must be transparent and demonstrate a real desire to seek solutions working in a collaborative fashion** with communities.

How will Community Engagement **change the FAA priorities, objectives, and procedure changes**? **Noise reduction must be a top priority with specific and quantifiable objectives**. As part of a proposed change, the **impact** of existing or future procedures (including the impact of vectoring) **must be calculated** (either through actual noise measurements or noise modeling) **using multiple metrics** (not just DNL). For communities exposed to more than one procedure, the **cumulative impact of all procedures must be considered**. In addition, **noise models must be calibrated** for areas that are not in the close vicinity of an airport. Finally, **permanent implementation** of changes endorsed by the Community **must be contingent upon validating** that the **actual impact** of the changes is equal to or less than the forecasted impact. This validation can be done through a testing period.

What **role** does the FAA see **community members** playing in the Community Engagement process? Will the Community have an information role, a consulting role, a collaboration role, or a decision role? We need a problem solving forum where issues can be discussed in depth. **True collaboration at the technical level must occur**. The FAA procedure design team and Community Technical resources must work together to identify potential solutions and propose recommendations with expected impact. Such **recommendations must be reviewed and endorsed by** the appropriate body of **elected officials** that represent the affected communities before any implementation occurs.

Community Input Based on Facts and Fairness

My name is Mark Shull. I am a resident of Palo Alto CA, and Chevy Chase MD. After observing the impact of the NextGen Metroplex program, I put considerable effort into understanding how the NextGen Metroplex program came about (i.e., its largely the RTCS's Task Force 5 plan, co-chaired by A4A and Airports Council International, and whose demands were literally written into the 2012 FAA funding legislation, including requiring the FAA to find ways to reduce separation and deliver simpler procedures to improve airport throughput), and why it is so noisy (which comes down to the development and deployment of OPD STARs and SIDs that are optimized solely for throughput, not via advanced technology, but rather via brute-force, Henry-Ford-like assembly-line simplicity, repetition and concentration.)

In this, it became very clear that communities are completely ill equipped to understand what NextGen really is, or to have access to peer-reviewed facts and data to understand what the FAA, airlines, air transport industry and airports are really doing. This is exacerbated by complexity of the subject, and misleading assertions, vocabularies and Noise 101 tutorials provided by the FAA and airports that overwhelm community leaders. Worse, the FAA and airports use pliable astroturfed cut outs to meet community representation requirements, gerrymander who is represented on airport round tables and the play off one community against another with minor concessions that often harm others greatly. These tactics avoid any focus on the core issues or deep discussions about why NextGen is so noisy and so polluting in the first place, and what anything of real significance can be done about it.

There is not only a huge information gap between FAA/Airline Industry and communities, but we also face a massive misinformation challenge – some natural, mostly purposeful. This is exacerbated by the fact that the NAC and airports themselves select and limit who gets to provide community input. This gerrymandering and astroturfing keep community input at a naïve level, and enables the FAA, airlines and airports to avoid having to engage in well-informed or substantive debates about what can and should be done.

Based on these, I would make the following recommendations:

- **Own the narrative** -- Communities (cities and community groups) should pool resources to produced factual documentation, presentations, tutorials, videos, etc. to explain exactly what NextGen is and what it isn't. We need to take the narrative back, make it truthful and fact based, educate our communities and counter misleading NextGen marketing with facts.
- **Close the Expertise and Data Gap** – (Observing from afar) it seems that Boston has at least opened the door to more data and science-based discussion about potential ways to reduce noise by working with MIT. There are projects at Stanford to provide objective decision-making data. We should try to coordinate and organize the power and credibility of our universities – perhaps designate one per Metroplex – to sort through the science and data, to keep the FAA honest and to help push innovative

solutions forward. Moreover, we should ask our legislators (federal, state and city) to require local airports by law to fund these efforts – perhaps including under Title 21 in California.

- **Set Standards for Airport Round Tables and NAC Participation** – We should write and push for best practices and standard definitions of who should be represented on Airport Noise Round Tables (e.g., all those affected by noise) and on the Industry/FAA NextGen Advisory Committee (NAC). Related to this, all airports should be required to have Round Tables, adhere to the impact related membership criteria, operate under open data standards and address a minimum set of issues (to be defined). Membership on the NAC should be elected by a balanced representation of Metroplex airport communities and X percent of NAC seats (25%?) should be community seats.
- **Principles of noise distribution equity** – The strongest tool the FAA, airlines and airports have, as they continue to roll out NextGen, is the ability to provide small favors for one community, at the expense of others. This is very hard to fight, particularly when the FAA follows its usual practice of making sure the few know about changes before they happen. Suddenly one community has lots of traffic, and another was relieved of some. This is nearly impossible to deal with locally -- nobody wants noise back – but it would be really helpful to create standards and principals of noise distribution equity including that stronger or lucky communities should not be able to push noise to the weaker or unlucky, or be used to counter FAA abuses, and using data (NOP historical and ADSB current) to factually model impacts – past, current and future. I would argue that, in principal, all communities should accept some noise and no community should have to endure a lot of noise.
- **Define effective activism** – Federal law continues to get worse from a noise and pollution perspective with each new FAA reauthorization. And, because of the Commerce Clause and Supremacy Clause, local governments can do almost nothing about aircraft noise. The FAA delegates airports and their owners some ability to regulate noise, but it's against their financial interests and they don't. It is a fine line, but purely trying to cooperate with the FAA and airports is not working. They stonewall. But their behavior is often ugly, and bad publicity and law suits do seem to get their attention. I think we need at least discuss how strong our activism vis-à-vis the FAA, the airline industry, our legislators and the press should be. What works, what doesn't? And, how do we end the zero-sum game the FAA plays to appease one activist at the expense of others? How do we effect real change and how do we hang together to do it?

These are my thoughts.

Mark Shull
Palo Alto CA and Chevy Chase MD
mark.shull@gmail.com

Mr. Carbone, Ms. Khout, and Ms. Hall,

I am Darlene Yaplee, a Palo Alto, CA resident who moved here in 2014 prior to March 2015 when the FAA began to implement NextGen in the NorCal Metroplex. The current NextGen implementation shifted airplane noise over communities that were not consulted or represented.

Impact for many cities (especially Palo Alto and nearby communities) has been significant due to the concentration of air traffic in narrow aerial corridors, reduced separation, lower altitudes, faster speeds (including excessive speeds within published STAR procedures) and frequent air brakes over densely populated areas. Three SFO arrival procedures (60% of SFO arrival traffic using SERFR, BDEGA, and OCEANIC) fly within 2 miles of the MENLO waypoint (or increasingly over SIDBY).

Palo Alto residents are subjected to about 350 SFO noisy arrivals per day, almost on a 24-hour basis. In addition, approximately 15% of the time, Palo Alto is impacted by SJC south flow arrivals: 50% of SJC south flow arrivals now make their turns over Palo Alto at altitudes below 3,000 ft (source: FAA presentation to the Ad Hoc Advisory Committee on South Flow Arrivals in early 2018). This is in stark contrast to SFO and SJC historical tracks, at roughly similar overall airport volumes. It is frustrating to share that even today as the FAA makes changes there is no notification to impacted communities.

Thank you for soliciting input from the community and hosting a session on community engagement at the upcoming ANE Conference.

Below are my recommendations:

1. **Notify impacted communities** of FAA/airport changes and be allowed to comment.
 - Implement a **subscription notification** for individuals to sign up and receive information on new procedures, cancellations or modifications of procedure changes that may impact them. Currently the IFP gateway does not serve the purpose of proactive notification and requires a daily monitoring to detect changes. Additionally, there should be a mechanism to **submit comments**. At the San Francisco Roundtable in late 2018 attendees were told by the FAA that the IFP Gateway is only for industry experts and not for the public to use for comments. The FAA also shared there is currently no way for the public to provide comments.
 - Citizens should be notified at the **beginning of the design process** so they can provide input during development and before plans are solidified.
2. **Consider the community** by FAA and airport representatives.
 - The cumulative impacts of multiple procedures and related vectoring from multiple airports must be considered for any new or changes to procedures.
 - FAA and airport personnel should be trained on and understand how to design procedures and vector traffic to minimize impacts over communities.

3. Make transparent and available the FAA analyses & data to the public without having to go through a FOIA request process.

- Currently the FAA makes changes without making the analyses and data they used. Transparency is key to engaging successfully with the community. Information must be made available using a subscription notification process or similar. Today to receive the data a FOIA must be requested--the FOIA process is lengthy, time consuming, and costly.
- FAA must make clear what information is based on actual experience and previous community feedback. The reality of OPD is not less noise because the planes do not glide in the one-size-fits-all OPD model; planes are concentrated, and often descend at less than optimal angles. Vectoring is not less noisy for impacted communities. Vectoring creates loud noise because planes are concentrated over the same vectoring path, make speed adjustments (up or down), and do not fly in a clean configuration (e.g., they deploy flaps and slats).
- The FAA stating that there is “no significant impact” to their changes is misleading given the on the ground experience of the community. The groundswell of community complaints and activity to mitigate airplane noise is an indication of the problem. More complete information must be made available to tell the story such as using a variety of metrics for modeling versus DNL alone, showing visual charts labelled with cities and neighborhoods with the changes in # of flights, noise levels, altitudes, and speeds.

4. Allow membership on airport roundtables based on NextGen impact to Cities.

- NextGen arrivals impact cities for 40+ miles away from the airport but historical roundtable membership is based on cities located near the airport and/or counties where the airport is located. Such legacy situations must change given that flight paths and noise from arrivals/departures transcend political voting boundaries that go beyond close proximity to the airport. Cities impacted by airplane noise **must be included** in forums where FAA and airports are engaged.

5. Resource community engagement with FAA technical consultants who can problem solve and work cooperatively.

- The community seeks engagement with the FAA for outcomes to improve the noise problem past and future. Resourcing should be for skilled FAA consultants who perform this role.
- The engagement must move beyond being allowed to ask 3 specific questions every two months to include deeper collaborative problem solving to minimize noise over residential communities.

6. Increase community representation at the NextGen Advisory Committee.

- Membership should be beyond the current one community representative and the charter should be updated accordingly to provide this increased and important representation.

Thank you for your consideration.
Darlene Yaplee

Robert Holbrook
Bay Area Jet Noise
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**Process Suggestions for the FAA and Airports
to Engage Communities in
PBN Development and Implementation**

I am a resident of Mountain View in the San Francisco Bay Area. I am impacted by arrivals to the San Jose and San Francisco International Airports (SJC and SFO). For the past two to three years, I have been a community advocate, working particularly closely with the Ad Hoc Advisory Committee on South Flow Arrivals to SJC. I attended the meetings of the Select Committee on South Bay Arrivals in 2016, which focused on SFO, and regularly attend the SFO Roundtable. I spoke to the NextGen Advisory Council in Washington, DC. I plan to attend the newly formed South Bay Roundtable, which will soon represent residents of Santa Clara and Santa Cruz Counties on issues involving airports in the Bay Area Metroplex.

The predominant issue in my community is South Flow arrivals to SJC. Arrivals which, prior to 2012, were more or less evenly dispersed across a corridor two miles wide have been placed on a 'rail', with the center of traffic shifted west by one nautical mile. Avoiding airplane noise was my number one criterion when I selected my house in 2005. Now I have a rail directly over me.

Technically, there are two PBN approaches to SJC that concern residents in the cities near me. The first is the STAR procedure that ends at the ZORSA waypoint. This takes airplanes at 4000' and below over Cupertino, Sunnyvale, Mountain View, Palo Alto and sometimes East Palo Alto. The second is an RNP procedure whose use is increasing. It directs airplanes arriving ZORSA to the Bay via a semicircular 'rail', and from the Bay to the airport.

Was notice given? I expect that the new procedures were listed in the IFP Gateway. Maybe there was public notice in a newspaper. Certain officials might have been informed of the changes, with reassurance that they would not be significant. Those officials did not understand that the FAA uses the term 'significant' in a narrow technical sense, which the courts (cf, *Phoenix*) found to violate common sense.

Suggestions

Preserve Access to the IFP Gateway

A spokesperson for the FAA mentioned at a Roundtable meeting that the IFP Gateway was intended for feedback from pilots who would fly the proposed procedure, not people affected by the noise of those procedures. She said that the FAA had been discussing, at least informally, withdrawing public access to the IFP Gateway. Later, she suggested that perhaps the Gateway could be limited to members of the Roundtable and perhaps a select group of residents who might affiliate themselves with the Roundtable somehow. This is misguided: the FAA should offer more transparency in the development of PBN procedures, not less. Any effort to limit access to the IFP Gateway should be opposed.

Members of the FAA should Engage Directly with Residents

Airplane noise, its causes and potential solutions are complex topics. Members of the community have devoted hundreds or even thousands of hours to understanding NextGen and how the issues it brings might be ameliorated. In my experience, the FAA does not engage with these individuals directly in a meaningful way. Instead, the FAA takes pain to channel its communication through elected representatives. Unfortunately, these representatives, while well-meaning, have rarely spent the time required to come up to speed, so they are not prepared to engage at the levels of detail and specificity needed to engage effectively with people far more expert than they are. While elected officials can come prepared with provocative questions, they are often not able to address the FAA responses effectively. If the desire for solutions on the part of the FAA is genuine, their subject matter experts should engage with subject matter experts in the community directly.

FAA Program Management of Follow-Up Commitments

The FAA response to the Congress members who chartered the Select Committee, and who submitted their suggestions in November 2016, is still not complete. In addition, the FAA is now late in delivering its first response to the Ad Hoc Committee on South Flow Arrivals, which submitted their report along with a spreadsheet of suggestions in May 2018. Members of the public could be forgiven for thinking that work on these important documents lies dormant until a deadline approaches or a Congress member weighs in. In addition to appointing Ombudsmen, the FAA should appoint Program Managers who will ensure that the FAA follows up in a timely manner. These people would track that FAA responses are being worked on even when a deadline is not imminent. They could provide the requestors with meaningful status updates until the final product is ready. This would build trust.

Other Stakeholders at the Table

The FAA insulates airlines and agents of the FAA who implement NextGen from direct interaction with the public. We recently received two pieces of advice from one such agent: 1) maintain a good relationship with the FAA Regional Administrator, and 2) work with the airlines. If this is possible today, I don't know how to do it. The FAA should facilitate forums that promote this engagement. Lacking that, major airport operators should do so.

That many airlines are not proceeding to retrofit Airbuses with vortex generators at an estimated cost of \$3000-\$5000 per airplane (if replaced during scheduled maintenance) is proof that the process is badly broken. I believe that if airlines were at the table with the people being affected, this retrofit would be further along. It would humanize the situation and make it harder to reduce the decision to stock price.

Thoughtful people from the public have other suggestions for addressing noise (and pollution) that groups working on NextGen might appreciate and could potentially implement. These groups might find that the public has ideas that could lead to more contracts with the FAA; contracts that would benefit the organization, the public and ultimately the FAA and the airlines by providing them with more flexibility in rolling out new procedures. As it stands today, NextGen will constrain the ability of the FAA to make changes to flight procedures as they did in prior years. PBN has raised the stakes too high for communities to accept rails over them without a fight.

Regrettably, I will not be attending the Symposium this year. Perhaps next year on the West Coast.

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*Lily Rock above Idyllwild
with Moon and Overflying Jet*

2019 Airport Noise and Emissions Symposium Community Workshop Written Input from Quiet Skies Idyllwild (California)

Overview:

Since the implementation of the Southern California NextGen solution on March 2, 2017, the number of audible commercial jet overflights of Idyllwild, California has jumped from ten (10) per day to more than two-hundred-fifty (250). On a typical day, these flights begin before 5 AM and last until 2 AM. More than 95% of these overflights are east-bound departures from LAX, sixteen minutes after take-off and still climbing at over 30,000 ft above sea level.

Owing to Idyllwild's location on the western slope of Mt. San Jacinto and its characteristic granitic bowl valleys, the sound from each overflying jet reverberates between 2 and 3 minutes. Thus, we experience prolonged noisy interruption of the peace and quiet that residents and visitors have cherished in Idyllwild, Riverside County's only mountain community. Our US Congressman, Dr. Raul Ruiz, has recently written on our behalf to the FAA adding that disrupted sleep patterns from overflights are known to prompt stress-related anxiety.

It appears that no consideration was given by the FAA to the environmental and safety impact of the NextGen changes as the agency evaluated only the standard 25 mile and 10,000 ft zone immediately surrounding LAX. Indeed, Idyllwild is located 100 miles east of LAX, far outside of the evaluation area, and jets fly over us at more than 30,000 ft, well above the typical altitude of concern for environmental impact studies. Nonetheless, Idyllwild residents and visitors are seriously impacted by the noise and are voicing concern about air and water pollution, changes in wildlife behavior and pressure on property values.

On March 2, 2017, the FAA implemented changes to the previous east-bound route HOLTZ9-TRM which had directed traffic south of the Mt. San Jacinto massif over lightly inhabited mountain and desert terrain. The new route is forked, with the northern branch, DOTSS2-CLEEE, impacting Idyllwild with 250 flights a day, and DOTSS2-CNERY, about 20 miles to the south, carrying 200 flights a day. In the event of severe inclement weather conditions on Mt. San Jacinto, traffic is often shifted southwards from DOTSS2-CLEEE to DOTSS2-CNERY.

In addition to the adverse effect on the quality of life of Idyllwild residents and disruption of the peace and quiet of the surrounding mountain wilderness, the use of DOTSS2-CLEEE exposes half-a-million more Californians to overflight noise and air pollution. Inland from the coastal Santa Ana Mountains, approximately 600,000 people live under the DOTSS2-CLEEE route which overflies cities such as Perris, Menifee, Hemet, San Jacinto, Idyllwild, Palm Desert, La Quinta,

Indio and Coachella. In contrast, only Temecula and its 100,000 residents are situated under DOTSS2-CNERY.

Quiet Skies Idyllwild’s demand of the FAA is to cancel DOTSS2.CLEEE for health and safety reasons for a half-million people, routing traffic to other existing routes over the largely uninhabited lands south of the Mt. San Jacinto massif. By shunting to DOTSS2.CNERY there would be a less than 1% increase in distance travelled (relevant for jet fuel consumption and carbon footprint), making this a “win-win” for the FAA and the public.

Answers to Specific Submittal Questions:

1. Geographic Location of Impacted Community

Idyllwild is the sole mountainside community in Riverside County, California. It is located at 33°44'24.1"N 116°43'08.1"W at 1-mile elevation on the western slope of Mt. San Jacinto.

Idyllwild is approximately 100 miles directly east of LAX.

The noisy overflights in question are all LAX-departing east-bound commercial jets, including both passenger (e.g., American, American Express, United, Southwest, etc.) and cargo (e.g., FedEx, UPS, ABX). *N.B.:* The other major SoCal airports’ (e.g., San Diego, Long Beach, Ontario, March ARB, John Wayne, Palm Springs, etc.) jet traffic does not overfly Idyllwild.

While Quiet Skies Idyllwild is filing this report based on our noise problems, there are 600,000 persons impacted who live under the new DOTSS2.CLEEE flightpath who potentially could have air, water and noise pollution concerns.

2. Predominant Type of Noise Issue

Exclusively departing aircraft from LAX heading east-bound from the DOTSS2 waypoint.

3. Performance Based Navigation Procedures

This report concerns only DOTSS2.CLEEE.

4. FAA Community Notification

We have not found any record of the Idyllwild community being notified, nor even considered, by the FAA during their planning of the implementation of DOTSS2.CLEEE.

Recommended Learning for ANE Symposium Community Workshop:

- When FAA is conducting community and environmental noise pollution impact assessments of proposed PBN changes, or review of existing routes, build in consideration of long-range communities and protected lands out to 200 miles along the proposed routes and engage with affected federal, state, county and local constituents.

PHX Historic Neighborhoods Input Submission UCD 2019 ANES Community Workshop

Background:

On September 18, 2014 the FAA made significant changes to the flight paths in and out of Phoenix Sky Harbor International Airport as part of its “Next Generation Air Transportation System” initiative (NextGen), an effort to modernize airspace navigation in the U.S. These changes were made without public input or notice. Residents woke up with air traffic flying overhead along Grand Avenue literally overnight where there was none before.

In summer of 2015, after months of effort by the City of Phoenix and residents to convince the FAA to make adjustments or revert to historic flight tracks failed, these Historic Neighborhoods filed a Petition for Review in the U.S. Court of Appeals, an unprecedented step. The Neighborhoods’ action was in addition to a Petition filed by the City of Phoenix. The cases, though separate actions, were consolidated by the Court to be considered together.

On August 29, 2017, the Court found for the City of Phoenix and the Historic Neighborhoods, ordering the FAA to return to the original flight paths and to “start over.” In November, a Court approved Joint Agreement between the City, the Historic Neighborhoods and the FAA was reached that brought changes to the westerly departures which affected most residents. The Grand Avenue flight path affecting the Historic Districts was eliminated.

Per the Agreement, on May 24, 2018 the westerly flight paths were fully reverted to their 2014 historic tracks using the satellite-based technology that is the goal of NextGen. The FAA is reviewing potential for additional adjustments to other flight paths at this time.

PHX Sky Harbor International Airport:

Ranks in the top 10 in commercial airline operations in the US. The airport was originally built in the 1930s along a natural terrain river bed, the Salt River. Flight paths were developed to follow the river which runs roughly east/west near Sky Harbor and is sparsely populated. The prevailing winds generally dictate the flow of air traffic (east flow/west flow) with about equal departures/arrivals in each direction.

The westerly departures impacted the historic neighborhoods when they were changed in 2014. Prior to PBN (RNAV), westerly departures would fly approximately 8-9 miles before initiating any turns. After RNAV implementation in 2014, turns were initiated sooner, at 2 miles. That brought new aircraft traffic over these neighborhoods and at a lower altitude than when they turned at 8-9 miles.



THE ROOSEVELT
NEIGHBORHOOD



Lessons Learned:

PHX has become a national model for what NextGen implementation can be, not by the difficult path we experienced but, by the ultimate result. A FULL public process must be undertaken before making changes. Public input cannot be over emphasized.

- Public Notice - Must be meaningful. The Federal Register and Classifieds Public Notices are wholly inadequate. Outreach to the city, community and airport authority must be donej
- Public Involvement - Must be meaningful. Community Workshops such as those conducted in PHX AFTER the Court decision were useful. They must be included at the earliest stages. Public Comment periods must be long enough to allow outreach.

Balance is essential. Managing the National Airspace System is vital. However, it must be done with consideration of real potential effects to those on the ground. The mandated benefit of “efficiencies” for NextGen implementation cannot be borne at the expense of those on the ground.

- Legacy flight paths used for decades must be considered when designing PBN.

One-size doesn't fit all. Every city's airspace and operations are different. Consideration for long standing land use must be part of the evaluation when reviewing changes. People make life investments based on environmental conditions. The design process for RNAV procedures must respect what came before.

Other design considerations or mitigation procedures to reduce impact of air traffic on people on the ground include:

- Altitudes - Arrivals and departures. Higher is better.
- Schools - Avoid
- Parks / Recreation - Avoid
- Historic properties - Avoid
- Night time respite - Curfew

Modeling: The 65DNL threshold to determine excessive noise impacts is outdated. It does not account for the harm done by additive overflights. Consider this... if one is hit on the head by a hammer for an hour, then by a feather for another hour, does the average of the two mean the hammer didn't hurt? Modeling procedures are flawed.

PHX is an obvious case study that provides incredible opportunity. NextGen implementation need not have happened the way it did here. It need not happen that way elsewhere. Lessons must be learned and applied from our experience here

Contact: Steve Dreiseszun / PHX Historic Neighborhoods. Steve@viewpointphoto.com

Despite the name, Sacramento International Airport (SMF), is a regional airport with quite modest international traffic, although with both domestic and international flight expansion announced. Annually, SMF hosts about 12 million passengers. It first opened in 1967. In addition to passenger traffic, some commerce occurs related to package transit. The principal problem currently is associated with what is termed “south-flow” departures.

Most of the airport’s air traffic occurs over open or very sparsely occupied areas, minimizing both noise experienced by those on the ground as well as maximizing alternatives to residential impact should some kind of mid-air emergency occur, and a return to departure airport foreclosed. Because of its location in the pacific migratory flyway, SMF has always been recognized as high risk for engine incapacitation by way of midair bird strike. As frequently as twice in the past year, this in fact has taken place. In both instances the outcome was severe enough to require the departing flight’s SMF return soon after liftoff, under power of a single engine.

The residential area closest to SMF is Natomas. And in Natomas, there are neighborhoods with more exposure to overhead plane traffic than others. This is because when the wind prevails from out of the south, departures from either SMF runway are accordingly headed into the wind. Thanks to Sacramento’s pattern of development, in order to travel between SMF and eastern and southern destinations, departing flights have to pass over residential mid-Natomas. The south-flow departure pattern has always been somewhat problematic, as low flying flights can be at least annoying, if not of greater concern for those underneath. One clear cause for such concern in Natomas are the migratory bird populations who habituate, on a year-long basis, the same mid-Natomas areas where homes have been built around water features. These larger birds can be frequently seen flying in formation at the same altitude of departing flights, throughout the year. As concerning as was this situation originally, risk for any one part of Natomas was relatively low in the past. This thanks to the fact that pre-NextGen, south-flow was disbursed, and path concentration was generally over the airports “strategic reserve,” or what had mostly been open or land under a seven-year long building moratorium with no new residential construction.

With Next-Gen, south flow departures now commence at very low altitude and then pass in a concentrated path over highly populated residential areas, coupled with very early banking almost immediately after runway liftoff at low altitude. The directly affected live in the Westshore, Westlake and Sundance neighborhoods of mid-Natomas. With respect to noise intensity, these three neighborhoods are now typically exposed, night and day about 70% of the time, to noise so loud that normal outside conversations cannot occur, individuals are aroused from sleep or resort to ear plugs, and windows or sliders typically have to be kept constantly closed because of the loudness of overhead flights. Departure concentration at low altitude leaves insufficient time for a pilot to safely land the plane if both engines are incapacitated. What had in the past been a shared risk, with low probability for any one location, has now become laser focused on mid-Natomas.

Exposure Creep – Deep Deflection!

The safety and noise concerns of affected residents began to be voiced almost immediately after NextGen practices were put into place at in 2015. Soon afterwards, airport staff participated in at least one “community information event” and issued Frequently Asked Questions (FAQ) as residents pressed local officials for answers and relief from departure pattern changes. While a notice of NextGen changes may have been published at least once locally, there has never been a broadly announced or convened gathering for public input. On behalf of constituents, locally elected and the area’s Congressional Representative did communicate in writing with the FAA, but were at the time were led to believe in response that no relief was possible. SMF staff have, in the past, uniformly held to the position that NextGen was imposed (“overlaid”) by the FAA and accordingly, any relief must be obtained from the FAA. Also, as recent history with respect to other major catastrophes has demonstrated, inconvenient or uncomfortable risks get pushed aside, resulting in “exposure creep” over time. Because community concerns were initially discounted and deflected and the increased exposure ignored, the notion that no relief was possible prevailed until about a year ago.

With the lifting of a construction moratorium (to allow levee reinforcement, reducing flood risk), lightly populated neighborhoods are now becoming densely occupied, and increasingly, new residents are alarmed by existence of the safety and noise exposures of mid-Natomas. In 2017, a mixed group of new and old residents re-approached locally elected officials and asked for help in obtaining relief, resulting in another round of letters to the FAA. Meanwhile, with some involvement from the elected official staff, the airport agreed to engage with the advocate group in trying to determine whether relief was possible. This has led to two major engagements and a couple of smaller interactions, the results of which haven’t been terribly helpful. On the basis of how things unfolded, airport staff saw as their primary job overwhelming participants with why the status quo exists and beyond their capacity to change. The group of advocates, on the other hand, actually thought the engagement was for the purpose of finding options which the airport and residents could jointly pose to the FAA in a roundtable.

Community Engagement Suggestions:

- Rather than doing everything possible to defend against what are generally recognized to be real community concerns and frustrations, the FAA should reach out to all airports and surrounding communities to insist that they engage in issue identification exercises that can then be taken up by stakeholders, aviation officials and locally elected officials. This may require FAA intervention, perhaps in conjunction with the local Representative’s staff, to start the ball rolling and in order to correctly identify the core problem and to acknowledge who has responsibility for solution formulation.
- One of the most frustrating aspects of our efforts has been to have airport staff who apparently have come to rather immutable conclusions dictate to everyone to abandon all hope (or to be quiet and accept what is) insist on pushing the issue onto the FAA, only to find out later that the proper roundtable process was never initiated. Some FAA leadership is needed to set the stage for proper community engagement.

COMMENTS FROM QUEENS QUIET SKIES
FOR ANE SYMPOSIUM COMMUNITY WORKSHOP

Queens Quiet Skies represents residents of northern Queens County in New York City, as well as residents in Brooklyn, the Bronx and northern Nassau County. They are impacted by arrivals and departures primarily at LaGuardia Airport and JFK International Airport, but also occasionally at Newark Liberty International Airport, Teterboro Airport, MacArthur Airport and White Plains Airport. Our members reside within 8 Congressional districts.

The organization was founded in 2012. Recommendations for involving our community in NextGen/PBN planning and implementation are based on our experiences with aviation stakeholders and NextGen operations. Our experience is that, more than once, the FAA has implemented flight procedures without the required notice.

The FAA, the airports and the industry have squandered one opportunity after another to create trust and interact constructively with our community. Now Congress has mandated that they consider the concerns of communities and involve us in NextGen planning and implementation. The following recommendations will assist in complying with the new Congressional mandate.

1. Involve communities substantially and meaningfully in decision-making from the early stages of planning, design and implementation. Treat communities as equal partners in planning and decision-making.
2. Hold public hearings in advance of changing flight procedures or implementing new flight procedures. Then integrate community input and feedback into planning and design.
3. Provide a formal process for verifying and challenging FAA documents. Use objective criteria made available to the public, to verify statements and plans.
4. Operate transparently.
5. Tell the truth. Be trustworthy. Keep your promises.
6. Believe us when we say, “we already understand NextGen.” Stop explaining NextGen to us; instead, take our concerns seriously. Don’t talk down to us.
7. Use metrics that measure the impact of noise on communities on the ground.
8. Obey laws, rules, regulations and your own policies. Don’t force us to go to court to communicate with you.
9. Make information readily available, using the internet to share documents and livestream meetings. Post public meeting information well in advance of meetings.

10. Answer questions, meet deadlines and don't make excuses. Stop stonewalling.
11. Appoint the Quiet Skies Conference, the association of community advocacy organizations, as a voting member of the NextGen Advisory Committee, the FAA ASCENT Committee, the Northeast Corridor Improvement Committee and any other entity that makes decisions affecting communities impacted by aviation operations.
12. Make public health, sound mitigation and environmental protection mandatory criteria when designing flight procedures.
13. Create a formal, transparent process to track the progress and completion of deliverables due pursuant to the FAA Reauthorization Act of 2018.
14. LISTEN to our communities and learn from our experiences. Do not confine communication only to the Roundtables.

Particulate matter including Ultrafine particulate

Criteria pollutants

Greenhouse Gas emissions

Air toxics

PARTICULATE/ULTRAFINE PARTICULATE (UFP)

I am an advisory board member of the University of Washington (UW) Ultrafine Particulate (UFP) investigation currently ongoing. The UW team has confirmed that ground level UFP impacts are occurring in flight paths for Sea-Tac Airport. These UFP can be source appointed to aircraft by their uniquely small sizes. Sea-Tac is surrounded by densely populated residential neighborhoods so these impacts are affecting the public. Health and welfare impacts include much higher than average asthma in the areas of highest impact, predominately landing patterns which have no other potential sources besides residential roads. These patterns are affecting several hundred thousand residents. Aircraft altitudes are lower due to restructuring spacing by height for efficiency but placing an unknown and potentially high risk on large areas of residential and school uses under 3,000 feet altitude.

My concerns:

- No current plan or ideas for mitigation of UFP
- UFP infiltrating homes (Hudda, Boston Logan)
- UFP size is uniquely small, can enter through the eyes, cross the membrane barrier, enter the bloodstream affecting the heart and brain
- Limited study on UFP effects but plenty on diesel and fine particulate indicating serious effects on lung, inflammation, immune system effects, brain effects, cancer
- Surface of particulate can carry toxics, metals into the body systems
- Limited study or investigation on what is attached to the UFP, assays needed

CRITERIA POLLUTANTS

As diesel trucks transition from high sulfur fuels, aviation fuels is one of the last outstanding with a high sulfur content. SO_x and atmospheric conditions can produce SO₂. Very short-term monitoring at Sea-Tac Airport indicated a potential violation of the SO₂ federal standard.

Aviation, high flame temperature, high bypass engines produce a high quantity of NO_x. This is known to cause lung irritation. Acreage around Sea-Tac airport has the highest contribution of NO_x and hydrocarbons produced per acre than any other in King County. Atmospheric conditions are conducive to the formation of ozone and nitrogen dioxide, both known to cause lung effects including permanent lung structure damage in developing children.

AV-gas contains lead. General aviation is the nation's greatest source of airborne lead emissions. There is no known safe level of lead exposure. Study of children's blood lead level confirmed exposure near a GA airport in the US and adults near Santa Monica Airport. Unleaded aviation gas is available but more expensive. As regulation drags, children and residents are exposed and damaged by lead emissions from airports.

My concerns:

- Criteria pollutant monitoring information is limited around the nation's airports
- Modeling doesn't capture what might be short or long term exposure health effects
- Most studies contain industry bias and few exist from independent sources. Investigation of atmospheric impacts of criteria emissions around airports is limited so mitigation is not discussed, planned or implemented. Land uses are too close to many of the nation's airports and although compatible with noise (industry standard, not health based) but not with emissions
- Invisible nature of emissions helps the industry to remain in denial although some independent studies indicate airports are a major source of criteria emissions
- Many state and regional monitoring networks are strategically placed for compliance purposes rather than public health and welfare protection.

GREENHOUSE GAS EMISSIONS (GHG)

The AEDT model allows a truncated emissions fraction of carbon dioxide from aircraft, only 10% or less of the actual emissions. The use of the Landing/Takeoff Cycle (LTO) for estimating criteria pollutants in the models of the past was to gather data on area and inventory for ground-level effects. This philosophy doesn't fit with carbon dioxide emissions from aviation because the global impact rather than the local impact is concerning.

Nitrogen oxide emissions from aviation in the upper atmosphere has twice the global warming effect of ground level emissions yet this emission along with methane, black carbon and sulfur are never considered additive in the overall climate impact analyses.

An example of the missing information is at Sea-Tac Airport, the AEDT model estimated 390,000 metric tons of carbon dioxide for the number of operations, approximately 400,000 annual. The real figure based on fuel pumped is 5.4 million metric tons (2015) which does not add in the additional 2,300 tons of NOx, 250 tons of SOx, 53 + tons of particulate etc, just for aircraft. None of this included the cars, trucks, busses, ground support equipment etc., an airport typically draws to its environment. King County is the largest producing county in the State of greenhouse gas emissions. Sea-Tac Airport is the single largest producing facility in the county. The carbon dioxide from the airport alone is 25% of the county total. With a doubling of operations at this airport envisioned in the next 15 years, the airport will effectively be equal to a coal fired power plant and half the county total by 2034 and may be already if other GHG contributors are properly inventoried.

My concerns:

- Inaccurate inventory of greenhouse gas emissions in AEDT for aviation CO2 in the US
- Lack of information on contribution of other emissions to GHG of pollutants other than CO2
- While aviation is the fastest growing sector in the world contributing to GHG emissions, there is a clear lack of a plan to address aviation GHG emissions by EPA, even though an endangerment finding occurred several years ago. The delivery of reduction goals has been deferred to ICAO with no current plan to address besides MBM

AIR TOXICS

Limited information is available on independent robust analysis of air toxics and their drift into residential and other sensitive land uses around airports. One such short-term study of air toxics around Sea-Tac Airport in 1993 found unacceptable (levels higher than new source regulation in state law) levels of benzene, formaldehyde, acrolein and some other toxic pollutants in neighborhoods near the airport. Other studies around some airports have found emissions of 1,3 butadiene creating a cancer risk increase to nearby neighborhoods.

Risk analyses around Oakland and Santa Monica Airports has found a marked increase in risk associated with a number of pollutants typical of airport operations. Many of these emissions have their source as jet produced emissions. At Midway Airport for example, EPA found a 10 times increase in lifetime cancer risk for 1,3 Butadiene alone in areas downwind of the airport and found that jet aircraft combustion was 99% of the source of this increased risk.

EPA EJ Screen also identifies many areas around airports in the 90 to 100th percentile of risk, exposure and negative health outcomes.

Metals associated with jet engines and jet fuel have been found in vegetation, air, within bodies of people and hair tested around Santa Monica and Sea-Tac Airports. Previous EPA testing of air toxics around Sea-Tac Airport found unusually high quantities of certain atmospheric metals.

Polycyclic aromatic hydrocarbons (PAH) including benzo(a)pyrene and others considered more dangerous and carcinogenic have been found on patio's and in snow under the landing paths for aircraft. Besides some limited Air Force admission of PAH in jet exhaust in the 1980's, very little has been done to define and analyze. Although studies have indicated a concern since these are some of the most carcinogenic compounds and regulated at very small quantity, no thorough investigation has occurred. As example, nitrobenzanthrone is one of the most carcinogenic compounds known to man. It is a combination of nitrogen oxides, benzene and PAH all of which are present in jet exhaust and has been found in diesel truck emissions.

My concerns:

- Limited information on air toxics but indicative of impact and risk
- Areas of impact around an airport have not been defined (NJIT found ten fold increase in risk from air toxics in a 10 mile radius around airports)
- Types of pollutants have not been disclosed. Benzene emissions are a well known emission from jet fuel combustion and although concern has been raised about benzene relationship to leukemia, no current monitoring is being done around airports to assure public health and welfare is not at risk
- Synergistic multiple pollutant impacts are unknown. There is great potential danger since many different chemicals are released and interacting with other compounds, atmosphere conditions and even other sources. We haven't even begun to scratch the surface on what may be the most dangerous chemicals or combinations of chemicals in an airshed around an airport. We haven't even begun to understand whether development of disease is due to one or more combinations of chemicals, whether one time or multiple times or for years of exposure and at what rate a developing child may be affected. The high number of unknown risks associated

with the zoo of toxic chemicals infiltrating our neighborhoods at 100% thrust should create a high level of concern. Yet this has failed to happen despite decades of real and anecdotal heightened mortality and morbidity statistics around airports.

Debi Wagner

Author, "Over My Head"

Former Burien City Council Member

Member of: Aviation Justice

Burien Airport Committee

Quiet Skies Coalition, Quiet Skies Puget Sound

Co-founder of Citizens Aviation Watch 1998