

Community Perspectives On Legislation

**Aircraft Noise and Emissions Legislation in the Next Congress:
Priorities, Perspectives, and Predictions**

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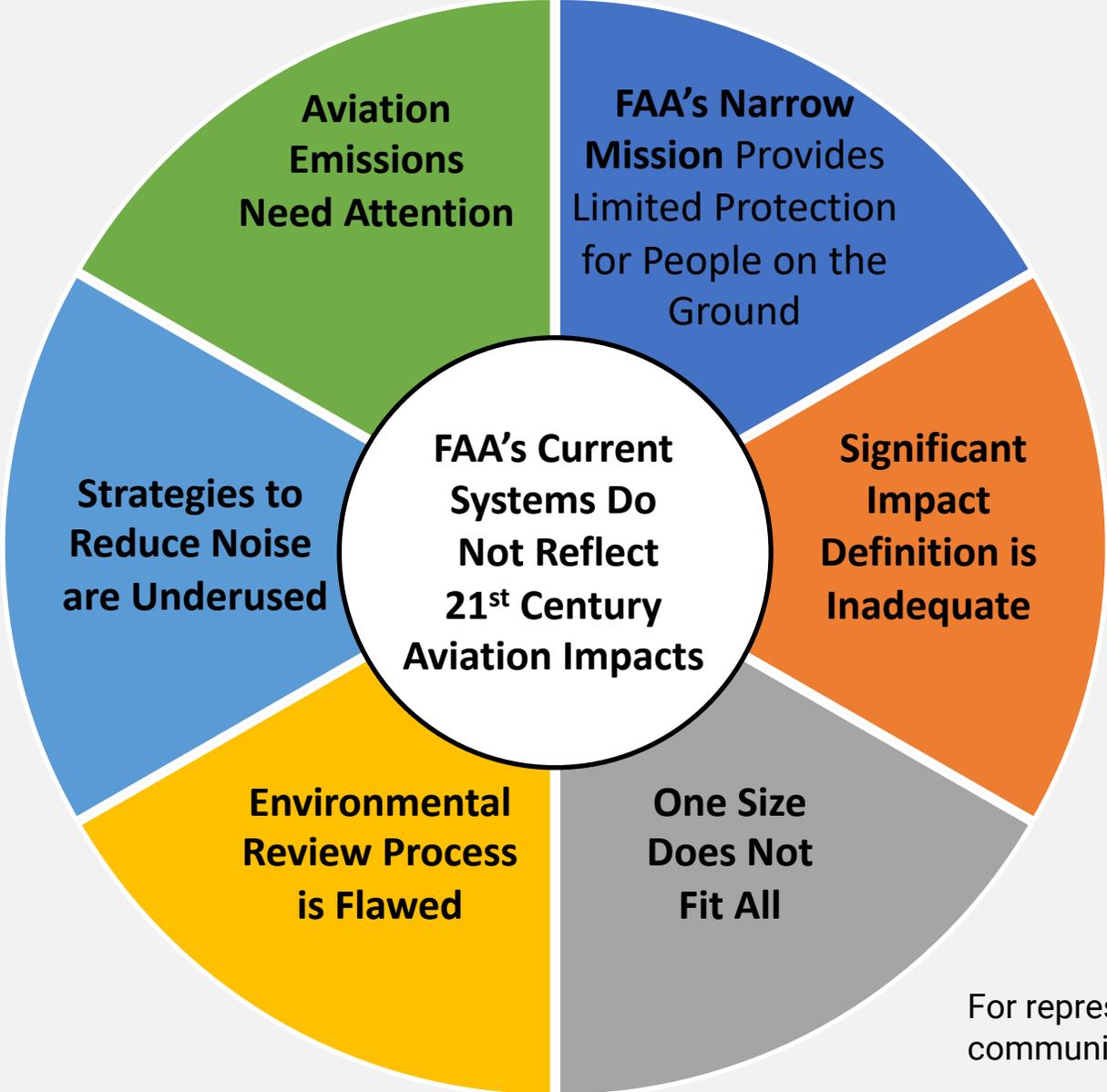
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Overarching Problem

The current systems used by the FAA to assess, report, and address noise and health impacts do not reflect the 21st Century and legislative changes are overdue.

Residents want relief from noise and emission impacts.

Framing the Problems



For representative examples of community input, see Appendix.

Problem 1 FAA's Narrow Mission Provides Limited Protection for People on the Ground

[FAA Home](#) ▶ [About FAA](#) ▶ Mission

Mission

Our Mission

Our continuing mission is to provide the safest, most efficient aerospace system in the world.

Screenshot of <https://www.faa.gov/about/mission/>, Accessed 02/14/2021

Problem 2 FAA's "Significant Impact" Definition is Inadequate

"Significant Impact" under NEPA (1969) is 65 dB DNL

- **The FAA has decided the DNL threshold determines:**
 - Basis for sound insulation programs
 - Level and outcome of Environmental Review (NEPA 1969)
- **"Significant Impact" interpretation**
 - Is based on "a single metric" (DNL), not "a single system" as directed by Congress (ASNA 1979)
 - The threshold of 65 dB DNL is fixed, regardless of ambient noise
 - Does not reflect how people experience noise
- **FAA Neighborhood Environmental Survey (2021)**
 - Casts doubt on 65 dB DNL for determining "significant impact"
 - True number of highly annoyed people is an order of magnitude higher than previously thought

Problem 2 FAA's "Significant Impact" Definition is (Cont.) Inadequate

Example of 65 dB DNL determining the outcome - FONSI

Florida Metroplex

- 29 Public Workshops
- 2 Public Comment Periods
Totaling 120 Days
- 3,239 Comments



Federal Aviation Administration

Finding of No Significant Impact (FONSI)

and

Record of Decision (ROD)

For the South-Central Florida (FL) Metroplex

October 2020

I. INTRODUCTION

This document serves as the Federal Aviation Administration's (FAA) Finding of No Significant Impact and Record of Decision (FONSI/ROD) for the South-Central Florida Metroplex (FL Metroplex) Project, October 2020. This FONSI/ROD relies on the information and analysis described in the Final Environmental Assessment for the FL Metroplex Project, attached hereto and incorporated by reference. The FONSI/ROD has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code (U.S.C.) Section 4321 *et seq.*); implementing regulations issued by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR), parts 1500-1508); and FAA Order 1050.1F, Environmental Impacts: Policies and Procedures (FAA Order 1050.1F). This FONSI/ROD is also used by the FAA to demonstrate and document its compliance with the several procedural and substantive requirements of aeronautical, environmental, programmatic, and other statutes and regulations that apply to FAA decisions on proposed actions.

Problem 3 One Size Does Not Fit All



Near Airport



Away from Airport

Community

Noise Sources

Ambient Noise

Metrics

Thresholds

Noise Reduction Strategies

Departures, arrivals, and ground-based operations

Typically urban or suburban

DNL and non-DNL

Realistic thresholds

Examples: sound insulation, land use, ground-based noise abatement

Departures and/or arrivals: concentrated corridors and high frequency overflights

Typically suburban or rural

Non-DNL e.g. N-Above

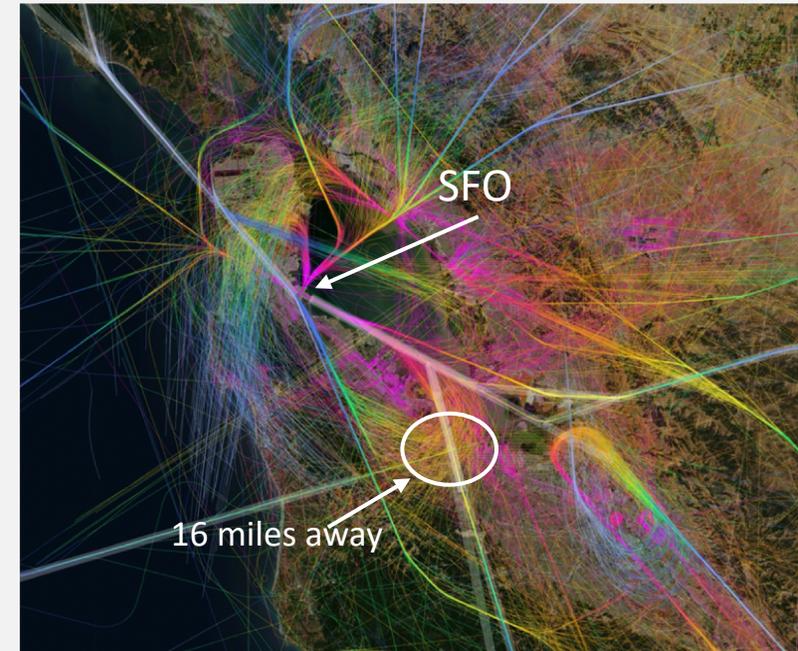
Realistic thresholds

Examples: avoid residential, quiet procedures, low concentration

Different Noise Requires Different Solutions

Problem 4 FAA's Environmental Review Process is Flawed

- **244 SFO noise events/day on average**
 - Palo Alto, CA – located in NorCal Metroplex
 - 16 miles from SFO as the crow flies
 - ~60% of SFO arrivals
 - Monitored Oct 30, 2018 - Jan 4, 2019
- **At representative neighborhood site:**
 - Aircraft CNEL*: 52 dBA
- **To reach a 65 dB CNEL threshold, Palo Alto would need almost 5,000** airplane noise events PER DAY**
 - This would be an airplane every 17.7 seconds throughout a 24 hour period



Away from the Airport - “Significant Impact” definition is a foundational flaw because even communities with very high noise impacts will never reach that threshold

*Community Noise Equivalent Level (CNEL) is like DNL but has an additional 5 dB penalty for noise events between 7 pm-10 pm. Used in CA for land use compatibility.

**Calculation: CNEL 52 dB and need +13 dB to reach 65 dB. 13 dB is a factor of $10^{1.3} = 20$. Need a total of $20 \times 244 = 4,868.8$

Problem 4 FAA's Environmental Review Process (Cont.) is Flawed

RECOMMENDATIONS

- **Add a validation step** to compare the Environmental Review predicted impacts against the actual impacts
- **Eliminate use of the CATEX (Categorical Exclusion)** to implement major changes such as new RNAV procedures
- **Ensure timely, transparent, and meaningful** community involvement
- **Perform accurate impact analyses** for locations under NextGen paths due to inadequate methods, modeling tools (AEDT), definitions, and assumptions
- **Include cumulative impact** over time, multiple procedures **and** airports
- **Etc.**

Problem 5 FAA's Strategies to Reduce Noise are Underused

- STRATEGIES FOR NEAR AND AWAY FROM AIRPORT EXIST TODAY
 - Benefit both noise environments - e.g. nighttime curfews
 - Benefit unique to one noise environment - e.g. quieter arrival procedures
 - Examples of noise reduction strategies (see Appendix)
 - Commercial air tours: noise levels, altitude, and no overflights – e.g. national parks
- STRATEGIES TO REDUCE NOISE ARE UNDERUSED

Problem 6 Aviation Emissions Need Attention

ULTRAFINE PARTICULATE MATTER, GREENHOUSE GAS EMISSIONS, AND UNLEADED FUEL

- Limited regulation
- FAA does not have public health expertise
- One reintroduced bill and one soon to be reintroduced bill for consensus reports - National Academies
- Numerous impact studies available
- Shared cause with environmental advocacy and environmental justice groups
- Unleaded fuel continues to be used for general aviation

STATS ON TOXIC FUMES EMITTED BY SPECIFIC AIRPORTS

SEATAC AIRPORT SEATTLE, WA

The carbon monoxide levels registered above federal guidelines

VAN NUYS AIRPORT VAN NUYS, CA

1.4 tons of lead emissions estimated annually

CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT COVINGTON, KY

All airport terminal services employees tested exceeded the ACGIH carbon monoxide threshold limit value of 25 ppm

LOGAN AIRPORT BOSTON, MA

VOC emissions measured at 667432 kg/yr.

HEALTH RISKS OF LIVING NEXT TO AIRPORTS

Insights for Future Legislation

- Current legislation does not protect people on the ground especially given 21st century aviation impacts
- Legislative changes are required unless FAA issues new regulations
- FAA Neighborhood Environmental Survey (2021)
 - New data strongly support changing the “significant impact” - threshold and metric

Insights for Future Legislation (Cont.)

FOR EXAMPLE, EFFECTIVE LEGISLATION WILL:

- ❑ Recognize that the Public wants less noise, not more research
- ❑ Task independent bodies of recognized experts with a track record of accelerating policy changes to review existing data and issue recommendations in a timely fashion

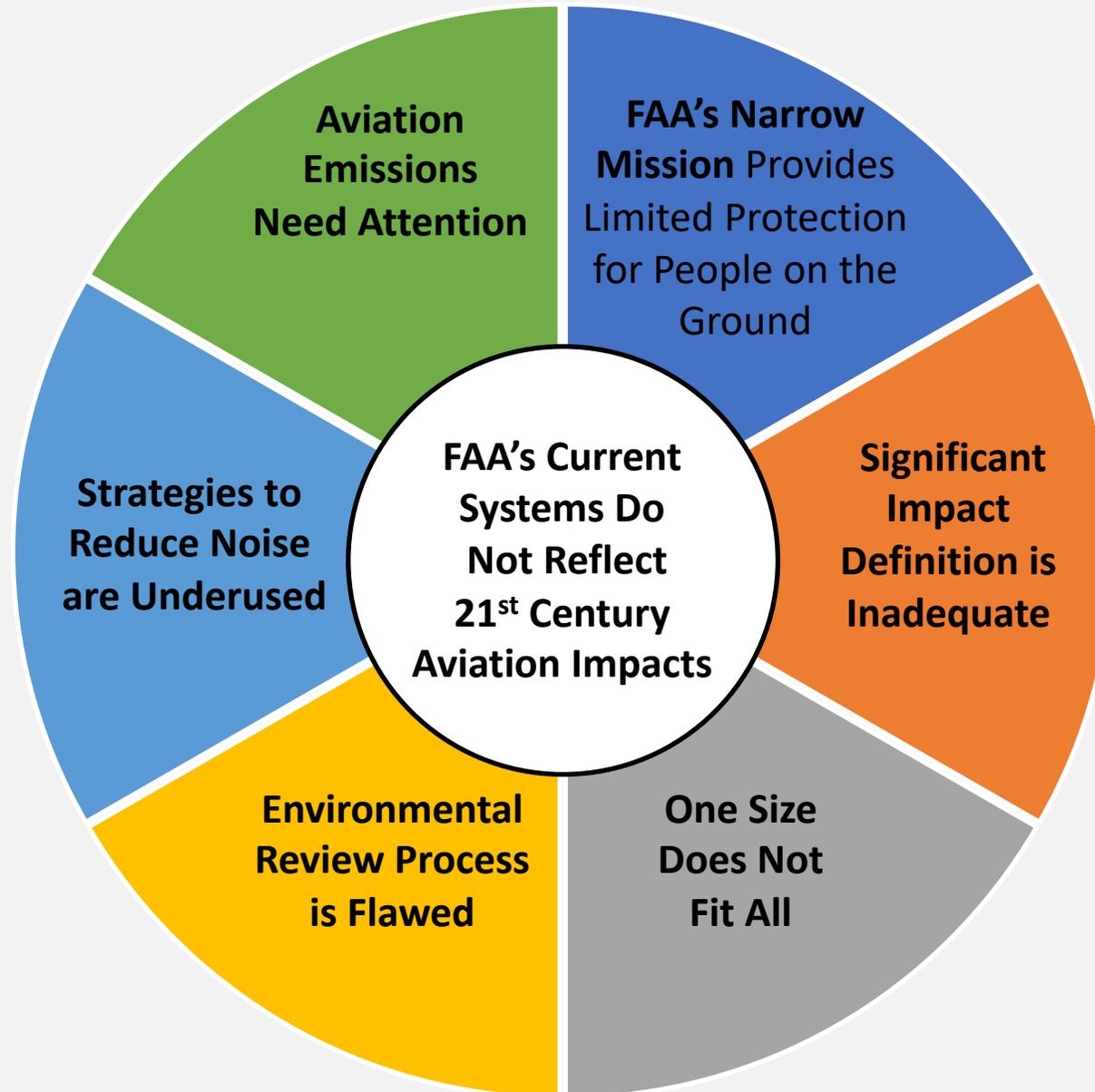
(e.g. H.R. 712: Division of Medicine within the National Academies for health impacts of noise & pollution)
- ❑ Be specific and hold FAA accountable: deliverables, actions, and timelines
- ❑ Give the FAA (or another agency) a mandate to protect aviation-impacted communities

Critical Legislative Items to Change

- Lower emissions

- Local control (e.g. curfew)
- Lower concentration and frequency
- Quiet procedures
- Etc.

- Eliminate CATEX usage
- Accurate impact assessments
- Effective community engagement
- Add validation step
- Accountability



- Must be broader – FAA or another agency

- Change "Significant Impact" – metrics and thresholds

- Different solutions for different noise types

APPENDIX

EXAMPLES: Strategies Exist to Reduce Noise Need Legislation for FAA to Take Action

Near the Airport	Away from Airport
Design quieter departure procedures ⁽¹⁾ (thrust level, climb rate, ground track)	Design quieter arrival procedures ⁽²⁾ (speed brakes, angle of descent, ground track, altitude, speed)
Increase sound insulation ⁽³⁾	Design GBAS arrival approaches without increasing capacity ⁽⁴⁾
Allow airports to put in place night curfews	
Design nighttime procedures to minimize noise impact over residential areas	
Design curved daytime procedures to avoid residential areas as much as possible	
Design additional procedures to reduce concentration and disperse traffic	
Increase in-trail spacing ⁽⁵⁾ to reduce frequency of planes and vectoring due to airport congestion	
Require noise exposure capacity limits	

Different
Noise
Requires
Different
Solutions

(1) Also applies to some extent to communities away from airport.
 (2) Per the FAA Reauthorization Bill 2018, report on Section 179 (December 2020), a Delayed Deceleration Approach proposed by MIT could reduce arrival noise **per aircraft** by 4 to 8 dBA for areas 10 to 25 nautical miles away from the runway.
 (3) Sound insulation may also be appropriate in communities further from airports if other noise reduction measures are insufficient.
 (4) The FAA has communicated to SFO that it will not consider changing the end of arrival procedures until 2025. Doing so could reduce noise for many communities under a well-designed GBAS approach.
 (5) In-trail spacing is the minimum distance separating 2 consecutive planes on the same procedure or approach.

List of Aircraft Noise and Emissions Bills for 117th Congress

See posted on ANE site “Supporting Documents,” ANES 2021 Legislation
Courtesy of Anne Kohut, Airport Noise Report/Aviation Emissions Report

- New bills introduced
- Previous bills reintroduced
- Previous bills expected to be reintroduced
- Previous bills – TBD if will be reintroduced

Representative input from
community members around
the country regarding their top
national priorities for legislation.

Problem 1 FAA's Narrow Mission Provides Limited Protection for People on the Ground

Reestablish the EPA Office of Noise Abatement and Control (ONAC)

FAA defunding should occur if aircraft noise and air pollution issues are not actively addressed with satisfactory metrics within a specified period of time

Change the mission statement of the FAA to require consideration of community health and environmental impacts

Congress to stop giving inconsistent input e.g. FAA to create supersonic airplane standards when it will result in new noise problems

Problem 1 FAA's Narrow Mission Provides Limited Protection for People on the Ground (Cont.)

Remove any powers of self-regulation of aircraft noise and environmental impacts from the FAA and reassign to an independent body

There is ZERO oversight or control of the FAA. Congress needs to create more oversight and policy that does not give the FAA carte blanche to do whatever they want in the skies over our country

The FAA has failed for years to develop, evaluate, and utilize noise metrics that have “a highly reliable relationship between projected noise exposure and the surveyed reactions of people to noise...” as already required by law. Rather than leaving this task to the FAA, which is a captured Agency, Congress should fund the EPA ONAC

Prioritize noise and emissions at a higher priority than efficiency

Problem 2 FAA's "Significant Impact" Definition is Inadequate

DNL metric and threshold used to determine noise impact are seriously flawed, resulting in inaccurate information used to justify a "finding of no significant impact"

The current metric is not a good measurement of what people experience on the ground. A new metric that measures single events and incorporates the frequency of single events is needed

Current noise standards in DNL expressions are impossible to meet as they are unrealistically high. Need to be lowered to levels that will represent real world scenarios

Despite millions of complaints there have only been Finding of No Significant Impact (FONSI) for all NextGen implementations

Problem 2 FAA's "Significant Impact" Definition (Cont.) is Inadequate

65 DNL standard is antiquated and outdated...calculated forty years ago, needs to be reevaluated – ineffective and well above the international standard

Need a non-DNL metric that measures single events and addresses concentration to accurately reflect NextGen impacts

The World Health Organization determined after a study and review of the scientific literature that generally outdoor noise levels should not exceed 55 dB in the daytime and 50 dB at night

Modernize and greatly reduce the threshold for significant noise to allow airport sponsors to use funds for soundproofing

Problem 3 One Size Does Not Fit All

Hawaii Island is the most tour copter impacted County in the Nation. The State of Hawaii is the most tour copter impacted State in the U.S.

A broader array of mitigations is needed to address the negative effects of airplane impacts. Current mitigations deal with the area within a few miles of an airport, but the vast majority of complaints filed since NextGen are from areas beyond that perimeter where today's thresholds of significance are irrelevant

Comprehensive reassessment of Next Gen's unintended consequences on communities from the perspective of increased noise pollution and heightened risks to neighborhoods experiencing departures and landings passing overhead at an altitude insufficient to guarantee the safety of those beneath should catastrophic engine failure occur

Problem 3 One Size Does Not Fit All (Cont.)

Noise events are undercounted using “threshold and duration method” for away from airport monitoring data - need “actual flight track method”

Ambient noise differences of 15-20+ dBA for near versus away from the airport must be factored into assessments

Require general aviation planes doing touch and go practice to attain an altitude of 1000 ft on takeoff before turning to circle over residential areas, and no longer consider touch and go operations as take offs and landings to avoid the FAA altitude requirement of 1000 ft. min. altitude for fixed wing aircraft

Require FAA to create noise exposure maps and install noise monitors for impacted areas, not just for at the airport

Problem 4 FAA's Environmental Review Process is Flawed

Community review is not timely, transparent or meaningful. Current focus is explaining what has been decided

Extend the FAA 60 day rule: require FAA to disclose accurate impacts and in language the public can understand

Need total impact of multiple changes: FAA assesses impacts on an incremental basis (one at a time) not the combined impact - all changes over time (procedures, all airports). This voids triggering the 65 DNL. Should not reset the "noise baseline" after each change

FAA can use noise screening tools and questionnaires which are too simplistic, poorly phrased and omit modeling for analysis of impacts

Problem 4 FAA's Environmental Review Process (Cont.) is Flawed

Eliminate use of the CATEX, it is not acceptable

Moving of flight paths over communities without prior notification; should not expect residents to track the IFP Gateway

FAA should not be allowed to create a procedure using "Segmentation" and "Presumed to Conform" regulations to exclude it from proper environmental review per NEPA

Implementing procedures just prior to Metroplex implementation and not including them in any Metroplex analyses

Problem 5 FAA's Strategies to Reduce Noise are Underused

Dispersion of arrivals similar to legislation that was passed for departures

Delaying the deceleration of the aircraft on approach could reduce noise between 4 and 8 dBA (noticeable) 10 to 25 nautical miles from touch down - per FAA Section 179 report

Realignment of the National Airspace System routes and schedules for safer, fuel efficient, and more conservative maximum flight operation/runway use rates at connecting-hub airports

Allow restriction nighttime operations: curfews

Problem 5 FAA's Strategies to Reduce Noise are (Cont.) Underused

General Aviation (includes Helicopters): increase minimum altitude to fly and at takeoff before turning over residential areas

Increase landing fees to cover lost property value, insulation programs, health effects, and annoyance; increase fuel taxes to account for environmental and public health damage

Our pre NextGen routes were ENTIRELY OVER THE OCEAN and did not disturb ANYONE. These new routes, over densely populated residential areas, could be more preventable when old routes are close-by, over open water, and disturb no one

More sound insulation

Airplane noise that cannot be eliminated must be equitably shared

Problem 6 Aviation Emissions Need Attention (Cont.)

A significant portion of airline stimulus funds should be used to hire engineers that would work on immediate aircraft noise and air pollution reduction or elimination on their current aircraft fleet

Require general aviation airports to offer unleaded fuel for propeller driven planes, alongside toxic leaded avgas that only a minority of general aviation planes need to use for safety

Air and water pollution are a concern. Emission residue and soot are evident on our schools, properties, plants, furnace filters and cars. Can there be independent testing for pollutants? Deicing fluid runs off into near by streams and rivers. That should be tested too

There is more than enough scientific information from studies to know that PBN negatively affects the nation's health

Problem 6 Aviation Emissions Need Attention (Cont.)

When people talk about aircraft noise and emissions, they must be considered together. For the area around Sea-Tac Airport, the importance of this combined multiple pollutant impact on human health poses a greater risk than one in isolation. Considering that the communities near the airport have hundreds of thousands of people living in the highest noise levels in the state and highest emissions in the region, you would expect health consequences. And that is exactly what the King County Department of Health did find in a report recently released. Higher risk, higher health consequences, higher exposure

Need to address lead, PM2.5, and other pollutants - and global warming

An emerging concern for us is the need to regulate ultrafine particles and its relationship with pre-term births