The purpose of NextGen was to create efficiencies in the NAS that would do two things:

1) Save fuel
2) Save time

Creating efficiency should be understood as a way of managing aircraft in the airspace to create capacity without compromising safety. In essence, the real goal of NextGen was to increase hourly throughput at airports that experience delays due to constraint, whether that is on-the-ground limits of space/gates or airspace conflicts. NextGen provides a way to reduce spacing between aircraft and manage landing aircraft with reduced spacing while maintaining safety. This is useful for the primary constraint of peak hour arrivals. Peak hour arrival constraint is a product of airline competition for premium slots and sometimes contrived through over-scheduling to capture premium slots. This has ripple effects outlined below.

Effect #1) Accommodating the increased peak hour arrival throughput creates the need for improvements on the ground. Many airports are experiencing the need to add gates, high speed taxiways, expanded passenger and cargo receiving facilities, roadway and parking expansion, etc. At Sea-Tac, the cost of improvements has been stated to be 10 billion dollars (2015 Mark Rees testimony to congress). This is where the partnership between airports and FAA provide funding that come from user fees that translate into individual airline profits for expanded service. This is a unique public private partnership that uses the power of the government and funding providing a limited benefit. If someone says the travelling public and cargo carriers provide vast amounts of economic benefit to a region, that benefit is never balanced against costly impacts to areas around an airport and does not consider reasonable alternatives. If not scheduling a flight or scheduling at a different time of day can alleviate the need for billions in investment for attendant expansion programs, this should be a reasonable alternative. This does not even take into account the tremendous cost of redesigning the airspace to add PBN nor does it consider the cost of the environmental impact of PBN.

Effect #2) Quiet Skies Coalition (QSC) was formed in 2016 in response to a new flight path through the city of Burien (Burien Turn) implemented with no public process by the FAA Region X office in July 2016. The new path was not disclosed and was snuck into a yearly Seafair Blue Angels event that uses the new corridor for five days each year. This new path effects predominately low-income minority residents who have no mitigation for existing airport operations. This takeoff path increased throughput at the airport. The need for increased throughput is a direct result of NextGen concentrated arrivals, introduction of Delta Hub in 2014 and other factors such as airline competition. The increased hourly throughput provided by NextGen creates ripples in the system that demand faster taxiway exits, more gate space and quicker departure rate. It is these ripple effects of NextGen that are major concerns of the residents of and City of Burien among others.

Some of the failures of the FAA to address negative consequences:

a) FAA did not engage with any community groups before, during or after implementation of increased operations. QSC tried many times to get responses from FAA on implementing the new takeoff path through Burien and FAA would not meet with us, would not answer our inquiries in a timely manner or at all, and only when the City of Burien agreed to hire a facilitator would they meet. Key officials still refused to attend the meeting even though the City had paid for and hired the required facilitator and the FAA personnel who arrived said they would not answer any

questions. It was only at the insistence of the facilitator that FAA agreed to take questions back to HQ for review and possible response. The City was forced to sue FAA with a prescribed 60 day window. Delay of justification for the Burien Turn and lack of communication, transparency and disclosure prompted this action as the only alternative.

b) The community identified noise and ground noise increases and safety concerns of the Burien turn. The FAA's own documents admitted an increase in noise above 1.5 db for 5% of the affected community which is the threshold FAA uses to determine significance. However, FAA dismissed this significance.

The community identified lack of mitigation with significant noise increases. The community identified environmental justice eligible populations in the study area in need of outreach and analysis. The community identified air quality and health concerns and problems such as statistically significant asthma cases within the community. FAA dismissed the majority of the community concerns as insignificant. The only response from FAA was to suspend operation of the Burien Turn during the evening hours and then only when it was reasonable to do so.

c) The community has notified the FAA that the area surrounding the airport is heavily populated with schools, homes, nursing facilities, day-care centers within blocks. Most areas, besides a straight out flight path corridor to the north and south, have no mitigation against noise or emissions. As the airport has become busier, increasing throughput by over 30% in just a few years, the noise and air quality has deteriorated significantly. The original noise mitigation done in the 1980 and 90's is outdated and proven ineffective (1996 State of Washington and Puget Sound Regional Council Final Decision on Noise Issues). Multiple project impacts of freeway improvements, added gates, added cargo trucks and cars along with the 30% increase in aircraft operations through the study area have not been analyzed for cumulative effects on the local population. The Port of Seattle and FAA continue to add capacity with incremental projects prior to study of overall effects.

d) The City of Burien won their legal challenge against the FAA in the 9th Circuit Court of Appeals. FAA has continued to ignore the court ruling and continues to drive aircraft through the heart of Burien despite the court ordering them to analyze the Burien Turn along with the Sustainable Airport Master Plan (SAMP) expansion plan.

Effect #3) FAA does not consider arrival noise as significant so the new paths will not receive mitigation even though causing severe disruption to life and health. Even with mitigation, homeowners experience a loss of use of property outside the home.

Effect #4) Increased operations cause increased emissions. There is no regulatory framework that oversees emissions at airports. While airport emission inventories equal or exceed those of major sources such as steel mills and refineries which are normally required to scrub out a percentage of their emissions, airports are not regulated as sources and are exempted from local source regulation. On a federal level, new aircraft engine certification is the only regulatory oversight. Meeting the standards for any new aircraft engine never takes into account the thousands of older, dirtier engines operating daily at a single geographic location. Because federal air quality regulation is done at a regional or state level, emissions at an airport are never analyzed. For instance, the FAA relies on regional compliance with air quality standards without ever analyzing the local conditions. For the Burien Turn, no analysis was done

even though there were issues raised by EPA in the 1990's indicating the airport would be exceeding the federal air quality standards by 2010 due to increased aircraft operations. Both EPA and the State Department of Ecology recommended site specific air quality monitoring to assure continued compliance which has not been done.

Effect #5) Health effects in the communities surrounding the airport have been analyzed in the past and found to be statistically significantly higher than average within the county for various respiratory and brain cancers, asthma and other illnesses that seem to be typical for people living near airports. Risk analyses have found an increased risk of cancer for people exposed to airport hydrocarbon emissions. Risk increases when those emissions increase. Some effects of noise overlap with increased emissions such as metabolic and cardio-vascular effects. Cumulative effects of these two environmental impact categories are never analyzed together.

Effect #6) Ultrafine particle emissions (UFP) that have been analyzed at LAX, Atlanta Hartsfield, Boston Logan and Sea-Tac have found a ground level effect from each arriving aircraft at 3,000 feet and below. Not only are these particle emissions considered dangerous to public health and blanketing large areas of homes, schools and other sensitive land uses, they are small enough to enter homes, pass through the lungs, enter the blood stream, enter the brain through the nasal passages and have the potential to carry toxics and metals into organs (UW DEOHS MOV-UP, Hudda Boston Logan).

People underneath these concentrated arrival paths are sitting ducks for significant health impacts. Where aircraft are lower to the ground, there will be an impact to human health that is always missing from any Environmental Impact Assessments. These assessments always lead to a FONSI despite community outcry and objections.

Effect #7) The negative impact of both noise and emissions happening at the same time is never considered. For instance, Keck School of Medicine has found a potential relationship with exposure to UFP and cognition. Another study has found that noise, especially lower frequency noise typical of aircraft, have negative effects on cognition. I am providing the research links for two studies of interest on the combined effects where one found pre-born children exposed to noise had lower birth weights while the other found UFP associated with pre-term birth. Pre-term is bad enough but adding low-birth weight to that outcome is more negative than if each were isolated.

People living in flight paths are subject to both high noise events and emissions of UFP at the same time. Study of the cumulative impact of multiple stressors on dense populations underneath flight paths, especially predominately low-income minority communities is long overdue. In the landing path north of the airport, the cheaper property has drawn a population that is primarily Environmental Justice eligible, ELL, extremely poor, with higher than average children per household, experience no outreach to protect themselves and have little understanding of the potential effects on their health. These children are more susceptible to negative outcomes because they are still growing.

Summary

Airports produce the highest overall noise levels in their respective states (US DOT Noise Map) and unknown to most people, they are a major indirect source of dangerously high levels of toxic and criteria emissions that can reach people up to 10 miles from runway ends and 5 miles in a circle. NextGen increases the ability of airports to provide a greater level of throughput that translates into a higher level of impacts to the general population. The fact there are so many lawsuits in cities around the country over NextGen flight paths should be a clear indication there are major flaws in either the process, evaluation, implementation, some or all. I believe the process, purpose and need , as well as the evaluation is flawed.

In 2012/2013 the airport and FAA were conducting meetings in the south end of King County for a FAR 150 process noise evaluation resulting from use of the new third runway. The runway had been built and opened in 2008. Residents experienced noise impacts for 5 years before this process was complete and most properties identified for mitigation were still not insulated by 2018 so 10 years after the start of the impacts. While the FAR 150 process was running in the south county, the Greener Skies meetings were held in the north end. The two never crossed paths or were disclosed to each of the groups of citizens. Both of these had an effect on both ends of the county. In the future, FAA should be required to implement mitigation first and test and prove its effectiveness as NEPA outlines.

The process does not adequately address increased noise incidences of concentrated paths on health, does not adequately address overall emission increases or the ground level impact of localized and flight path impacts. The evaluation does not consider the human health impacts of the combined noise and emissions. Because Jet A fuel use is going up dramatically all over the world, the savings of fuel for NextGen should not be a justification. Because the benefits are limited and the impacts so profound, the achieved efficiency should be deferred to demand system management and/or peak hour pricing.

Further study should include a thorough cost/benefit analysis considering the costs of expansion needed as a result of NextGen increased throughput, costs of increased road/congestion and airport projects, environmental and human health impact and mitigation costs, healthcare costs such as sleep loss and asthma, etc.

Recommend a government oversight committee or task force to review FAA and airport proposals for compliance, justification and review of analysis including verification of data used for AEDT modeling.

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