

Commercial Aviation Coordinating Commission

Meeting Summary

Location: TEAMS Meeting

Date: August 26, 2021

Time: 9:00 a.m. – 1:30 p.m.

Attendees: David Fleckenstein, Tony Bean, Joseph Braham, Eric ffitch for Jeffrey Brown, Lois Bollenback, Rep. Tom Dent, Steve Edmiston, Mark Englizian, Arif Ghouse, Andrea Goodpasture, Spencer Hansen, Warren Hendrickson, Robert Hodgman, Sen. Jim Honeyford, Shane Jones, Sen. Karen Keiser, Larry Krauter, Stroud Kunkle, Jim Kuntz, Rep. Tina Orwall, Robert Rodriguez, Rudy Rudolph, Jason Thibedeau, Robin Toth, Kerri Woehler, Bryce Yadon, Rita Brogan, Christina Crea, Max Platts, Terri Palumbo, and guests

Absent:

Welcome

David Fleckenstein welcomed everyone; Commission members and the members of the audience, to the August meeting of the Commercial Aviation Coordinating Commission (CACC). He then reviewed the agenda.

Public Comment Period

- Ursula Euler shared her concerns with the Commission meeting times because most people are at work and unable to participate in the public comment period in the middle of the day. Public involvement has been minimal, and she has to seek out information instead of it being provided to her. She finds public involvement lacking which leads to a lack of diversity on comments to the Commission. She doesn't think the public is involved; doesn't have the information and doesn't have the opportunity to be involved. It's important to involve the public and diversity of input at the point of decision making not afterwards and after recommendations have already been made.

Staff Focus Areas

- Scope of work for the Aviation System Plan
- PRR roll up of survey and plans for an online open house
- Strategic vision for Advanced Air Mobility and sustainable aviation

Calendar Update

Rob Hodgman reviewed the next steps. He covered topics which included CACC meetings, aviation system plan tasks which will inform the Commission, CACC outreach to the public, and reports to the legislature.

Commission Business

Lynsey Burgess, PRR, spoke on the community engagement being conducted on behalf of the CACC. She spoke about the public involvement goals and the previous survey conducted earlier in the spring. The survey invitations were mailed to 33,000 randomly selected addresses in King, Kitsap, Lewis, Mason, Pierce, Skagit, Snohomish, and Thurston counties. The survey response rate was 8 percent, with an expected survey result in this current environment (COVID, etc.) being 7 percent. Questions were

generally asked in four categories: first was an understanding of aviation capacity and demand (with no context), then importance of CACC principles and presented statements that described the benefits and consequences of meeting or not meeting demand, then the survey asked again about participant's understanding of aviation capacity and demand to gauge how much that understanding changed after some education about the issue, and finally demographic information. The big takeaway from this survey is that most people want to meet demand, but they want to minimize environmental impacts. Lynsey reviewed some of the underlying survey information with the members. A general conclusion is that people want to fly in a way that is predictable and affordable and relatively easy. They care about the environmental impacts of aviation. We see interest in expanding capacity at existing airports. People are expressing interest in existing airports and also in having options that are dispersed in areas that are not just SeaTac. Also, people are unaware of the capacity issue especially those people that travel less.

Lynsey then spoke about the online open house. This is a website which will be live for a set period of time with information about the project and a way for viewers to provide input. This is different than a webinar style meeting at a specific time or a static website with questions and comment forms. This online open house will be hosted through WSDOT's engaged platform and is set to launch on September 13 and remain live through September 26. It will be available in English and Spanish. (Note: due to a request to allow more time for non-English speaking members of the public to communicate, the online open house will remain open longer than anticipated.) The online open house goals and objectives are to clearly articulate project need and purpose, status, and next steps; build trust in WSDOT and the CACC through open, transparent communication; and provide opportunities for public input. Promotion of the online open house is through project partner toolkits, community-based organization partnerships and toolkit, social media, news media coverage, boosted social media, and paid advertising. This information will be analyzed once complete and brought back to the Commission.

Kris Johnson with Public Health Seattle and King County (PHSKC), shared the report on community health and airport operations – related noise and air pollution, and Elena Austin with the University of Washington, Seattle shared information from the MOV-UP study.

The general recommendations from these studies are, 1) address the health disparities of airport communities, 2) mitigate the health impacts of airport operations, 3) continue development and implementation of strategies to mitigate airport-related air and noise pollution, 4) implement new technologies to improve measurement of exposures indoors and outdoors, 5) expand the systematic monitoring of pollutants (both outdoor and indoor exposures) in residences, schools, childcare settings, and long-term care facilities, and 6) support research to address gaps in knowledge.

Steve Edmiston, as a citizen representative member of the Commission shared a citizen perspective on the community health and airport operations – related noise and air pollution report in relationship with the CACC legislative directives. After sharing this information, he recommended three CACC actions.

- Amend CACC guiding principles to expressly add “public health” to “environmental responsibility” and “social equity” principles;
- Add the Public Health Seattle and King County community health and airport operations related to noise and air pollution report to the studies informing CACC analysis; and
- Consider independent experts regarding actual public health mitigation costs added to airport site chosen if we add 100,000s of new flights in higher density communities. Authority: SB 5370 Section 2(9).

Steve commented that he didn't know if he had the power to do so but if so, he would offer a motion to adopt all three recommendations.

Discussion

Eric first offered Jeffrey Brown's apologies for not being at this meeting. Given some of the subject matter being presented Eric asked Leslie Stanton, Sr. Manager, Environmental Programs, Aviation at the Port of Seattle to join the meeting. Eric then commented that regarding this study and the Port of Seattle's role in various studies, they are glad to work alongside those in the CACC on advocacy about airport challenges in the legislature. Eric spoke on some of the studies funded by the Port and that they want to be in these conversations, partner, and help the region understand airport impacts like Steve discussed.

Leslie Stanton appreciated Kris', the county's and UW's work on this. She also appreciated Kris' presentation and the focus being clear about what the study concludes and doesn't conclude about causal relationships. She echoed Eric's statements that they strongly support good science and funded a number of studies and will continue to do so especially around ultra-fine particles. She also echoed strong support for the Commission's work on equity. She thinks a formal exposure assessment would be helpful and help get a good understanding of what the ambient concentrations are. She knows funding is a problem but there is readily available data online from the U.S. EPA's National Ambient Air Toxics Assessment as well as modeling and monitoring data throughout the region that can be looked at to get an estimate of what people are actually being exposed to and then compare that to the toxicity information around causality that Kris was referring to. The last thing they would recommend, knowing Kris touched on parts of the study that was peer reviewed, they would really encourage a formal peer review process that includes the Puget Sound Clean Air Agency and also the U.S. EPA. Both of those organizations are experts in air quality and toxicology, risk assessment and exposure from environmental impacts.

Kris agrees a formal assessment will give us more information and address some of the issues. While some of the data are free, the analysis would be a heavy lift. They stuck to the work that was defined in the proviso and invested more resources than was allocated to do that work. While the data are free and available through the EPA, we don't know the limitations of the data and the analyses we would need to do to control and understand for that was beyond the scope of the task we were given particularly within the timeframe.

Representative Orwall thanked Steve for his leadership and taking his role very seriously and thoughtfully. As a public official, seeing those health outcomes are shocking and it speaks to her heart that we have to see what can be done to impact that. Also, further expansion at SeaTac may only exacerbate what we are already seeing. She agrees more research needs to be done and is excited about the partnership. The last thing is the need for a green site, one that is not in an area that is as heavily populated. Hopefully that is something we can reflect on as a group as we hear about options.

Warren Hendrickson thanked all of the speakers then moved to add "public health" to "environmental responsibility" to the guiding principles and include the PHSKC report to the studies.

Larry Krauter asked to go back to the previous motion because he thought there were two motions. The previous one made by Steve Edmiston and now a second motion. He asked if we had voted on the first motion. David responded that we had not. Larry moved to table Steve's motion. He also asked to table Warren Hendrickson's motion. His concerns are that we are going to go through a very thorough and

prescribed EIS process that is defined in federal regulation. He is concerned about modifying definitions around any of these items until we have an opportunity to assess the suitability of doing that against the requirements of what the EIS regulations prescribe. We have to make sure that if we expect to receive federal funding for the development of new facilities, we will have to follow the federal process. If we start defining processes outside of the federal process, he would be concerned that we would run into challenges and problems around that. He's not saying these things are inappropriate in any way, but suggests we look at this in the context of following the EIS definitions to make sure we stay on track with how we're supposed to properly carry out our requirements under federal law.

David agreed, that is a good point. His recommendation, because we don't have all of the members here, some have dropped off to attend other meetings, the WSDOT staff could go back and consult with the Federal Aviation Administration and then get this recommended action out to all the Commission members so that all voting and non-voting members have a chance to weigh in on it. We will put inside of that, the information we received back from the FAA. He's not opposed to what is being stated as well, but also agrees with what Larry said.

Bryce wants to make sure that when we are done we clarify what is going to happen.

Warren's impression was that Steve offered the recommendations (on the slide) to the body of the Commission. He did not take the presentation as actually making the motion. Warren's impression was that his motion was the only motion on the floor, but we can clarify that. He also agrees with Larry's comments that there is an entire federal component to this in terms of the EIS but that will come in terms of the actual implementation of a site and moving forward with that under very strict guidance and regulations. There will be certain principles and requirements which will have to be met through that. He is not sure that the EIS part has an immediate impact in terms of the CACC role. We have to be mindful of it, but it doesn't actually enter into the Commission's recommendation, as he reads it. He sees the EIS piece will occur after the recommendation is done and we then move from the CACC's recommendation to legislative action, federal action and actual implementation of whatever the CACC recommends. Therefore, he doesn't see the harm in adding a public health component based upon the information here. Also, in terms of community and public awareness he thinks it elevates the awareness of the Commission that this is an important component and speaks to that in a favorable way.

Senator Keiser stated she didn't believe we had a second on any of the motions, so they are not actionable in a parliamentary procedure kind of way. Also, the EIS, federal component has nothing to do with the guiding principles of the CACC. Our guiding principles are set by this Commission and not set by federal parameters. She would agree that adding public health to our guiding principles would be of value to our state and a benefit to the public benefit part of the mission we have. We do not have to take that action today; a full discussion is in order with all members. She is fine with sending this out to all members but does not want to defer to the FAA.

Steve appreciated the robust discussion on something like this. It is so important to our communities and our process. He wants to gently but firmly push back on the motion of tabling something that might be as simple as recognizing the work performed by Public Health Seattle, King County, for Washington State. It should be something that is in our quiver of resources we will take into account. He apologized, he had meant to make a motion and thinks if we asked for a second and paused, we would get one. The first two bullets are really appropriate and the reason he doesn't want to wait is the public is watching. We only meet once every quarter and, in this quarter, in this meeting, we have already defined dozens and potentially hundreds of things that will happen in the next three months. By the time we do our

public outreach and system planning the horse is out of the barn. Deciding three months from now that it turns out public health was critical in that process could be too late. He asked, on the record, to see if there is a second to this motion and if there is, we can have a discussion and resolve it or table it.

David asked if there is a second and asked Steve to clarify what his motion is, and if it doesn't take into consideration input from Warren.

Steve would accept as an amendment to the motion the specific insertion of public health in the section of our guiding principles suggested by the Senator.

Bryce Yadon seconded but had questions regarding the order of motions. David clarified the motion in front of us now is to take Steve's recommendation and amend under environmental responsibility to add "and public health" and to adopt the studies into the CACC's analysis. Bryce again stated he seconds that.

Warren withdrew his motion for consideration because Steve's motion is the applicable one and meets the intent and objective he was trying to do.

Larry then asked his motion to table be acted on since there was no second to the previous motions prior to his. He believes his motion to table is something that has to be voted on before the other motions. There is no second required for a motion to table. He suggested that we need to vote on the motion to table Mr. Edmiston's motion and since Mr. Hendrickson withdrew his motion, it leaves only one motion to be voted on to table.

There was more conversation. Mark Englizian called for a vote on the table motion. Because voting was done online a roll call vote was taken. 12 – yes, 10 – no, 1 - abstain to table the motion.

Tony Bean - yes	Arif Ghouse – yes	Representative Tina Orwall – no
Joseph Braham – yes	Warren Hendrickson – no	Robert Rodriguez – no
Lois Bollenback – yes	Robert Hodgman – abstain	Rudy Rudolph – yes
<i>Eric ffitch</i> for Jeffrey Brown – yes	Shane Jones – yes	Jason Thibedeau – yes
Representative Tom Dent – yes	Senator Karen Keiser – no	Robin Toth – no
Steve Edmiston – no	Larry Krauter – yes	Kerri Woehler – no
Mark Englizian – no	Stroud Kunkle – yes	Bryce Yadon - no
David Fleckenstein - no	Jim Kuntz – yes	

David stated he would carry on with what he had recommended. The WSDOT staff will put all this together and get it back out to the members. He hopes to achieve some resolution prior to coming to the next meeting. He agrees that this doesn't need to move to the next meeting, but he does want everyone to make an informed decision on this. (Clarification after this meeting: once tabled, the discussion cannot be brought back up until a new vote to remove it from being tabled.)

Video / Lunch

The ***Great Electric Aircraft Race*** video produced on NOVA as part of PBS was shared during the first part of the break for lunch.

AAM Strategic Vision and Sustainable Aviation Introduction

David Fleckenstein shared a synopsis of the Advanced Air Mobility (AAM) and sustainable aviation strategy document WSDOT staff put together. This is primarily informational to inform Commissioners

on other work WSDOT is conducting that has ties to the CACC work especially when it comes to addressing environmental responsibility.

CACC/Aviation System Plan Nexus

Rob Hodgman shared that WSDOT Aviation will be receiving an in-depth, technical analysis as part of the upcoming Aviation System Plan. His presentation explained the connection between CACC and the System Plan regarding aviation capacity. The System Plan is a technical analysis that will provide data and programmatic options derived from the data to the CACC. The System Plan project team will inform but not make any decisions for, or on behalf of the CACC. The CACC will discuss the analyses and options developed through the system plan and make decisions on recommendations to the legislature regarding those options. Information will continue to be shared with the CACC, and through the CACC to the public.

Staff key observations are: surveys indicate the public wants to responsibly increase capacity but is less tolerant of negative environmental and health impacts and increasingly supports social equity; technological advances show promise for reducing the environmental impacts of aviation; and the pandemic is changing the way people work and live, in ways yet to be determined. As a result, we have come to realize the Commission can benefit from revisiting our approach. Other observations include, we understand the interaction between capacity needs and various types of activities and that we probably can't solve the problem with one single site. We also recognize that although we agreed that we were going to pursue either a large new airport or expand existing airports, or perhaps both, Rob thinks the Commission reached a consensus on pursuing both. Current analysis indicates that this is going to be a very complex problem using that framework to solve. Of course, the adverse environmental and health impacts from aviation are a lot more harmful than we originally understood when we started this work. In addition, current aviation technology is highly dependent on fossil fuels. What he means by that is, as aircraft from the Boeing manufacturing facility roll off the assembly line, those airplanes are likely to be in the fleet for 20 to 30 years. Although we anticipate some improvements in engines to be able to burn sustainable aviation fuels, and certainly that is something we want to move towards, we recognize that there is likely to be some combustion engines in the inventory for quite some time. Finally, emerging aviation technology has tremendous potential to not only reduce harmful environmental impacts, and to reduce travel costs, but also to make travel and air transportation for shippers more accessible. So, we believe there is a real opportunity here for the Commission to take advantage of this and work this into the solutions. How do these observations factor into the next phase? We have a proposed refinement of the approach.

Discussion

Rita Brogan asked members if they had any questions on the information Rob presented. There was some discussion.

Larry asked what is the basis for the statement about harmful environmental impacts in the context of this discussion. Why did we pick the word "harmful"?

Rob replied that not only from the presentations this morning but about a year ago, when Professor Larson from the University of Washington presented the first round of the MOV-UP we recognized the implications there. We went into a little more detail in that presentation about understanding that as airplanes arrive that is really where the concerns are. Although things have not been completely proven as some aspects as you heard from the experts, we recognize that there is enough evidence we need to consider commercial aviation as having harmful impacts.

Larry would like to see the sites for what Rob is using there. He thinks the issue in terms of what we are trying to accomplish with regards to solving the problem we have been charged with, is how to address airport capacity needs in the region. He wants to make sure we are focused on what our obligations are to mitigate identified environmental impacts associated with any given scenario that we may recommend. He is concerned about statements like this with regard to managing expectations about what we are supposed to do. So we want to choose our words carefully around the traditional procedures that have to be followed when we are siting aviation facilities. This does not, in his view, speak to that.

Rob referred back to the presentation from the FAA many months ago regarding the environmental analysis that is required as part of the FAA process. One of the reasons we asked the FAA to present is we wanted to clarify what the CACC's role is and is not. We understand the importance of the federal process and we are certainly not trying to get in the way of that. We also recognize that we are doing some preliminary analysis to try to understand various different sites and what the potential impacts across the spectrum of environmental impacts could be. As previously mentioned, relating to a green field site, we understand less populated areas are more desirable. He thinks the Commission understands that trying to find a location like that in Western Washington is a real challenge. Hopefully Larry's question is answered that we are not trying to supersede the federal process.

Larry thinks the way we might want to frame that discussion is a little differently, which is that emerging aviation technology will actually make it easier to expand the current system or to develop new facilities because of their cleaner nature. If we are looking at it that way, that is a more appropriate way to frame how we might want to consider the emerging benefits of new technology. He would prefer that we always frame it in how it enables us to accomplish our mission and it doesn't become the mission in and of itself. He wants to keep taking us back to why we are here, what we are trying to do, the process around it and the fact that emerging aviation technology will help enable us to be able to accomplish the mission of adding capacity to the system.

David added that we have a responsibility, it is laid out in legislation that we have to be cognizant of the impacts to the environment of the recommendations this group might make. So, looking at future technology is a way of being conscience with that and injecting that into the plan so what we achieve at the end does not take away from what we were tasked to do but it is a path that gets us there in a much better light, considering the impacts on the environment.

Bryce stated the current language seems sound especially based on what David said. We are supposed to talk about the environment and make sure we are not increasing the environmental impact and then trying to mitigate that. The idea that aviation does not have any environmental impacts and that we only have to look at the positives of aviation kind of ignores the fact that we do not take into account greenhouse gas emissions in our NEPA standards currently. SEPA does on a larger basis. We need to make sure that we know that aviation fuels increase greenhouse gas emissions and increase the threat of severe weather storms due to climate change.

Rita stated, the reasons for proposing what we think about explicitly refining our focus are; these are things that were implicit in prior recommendations, we talked about having a system-wide strategy and for purposes of increasing public understanding the nature of the problem we must address. We thought it would be helpful and are asking for concurrence from the Commission in saying we explicitly say we are pursuing a system-wide strategy that accomplishes the following. 1) Addresses the unique

requirements of air passenger, air cargo, and general aviation, 2) Requires environmental emissions and noise reduction/elimination strategies be included and addressed in each of the solutions for each of those modes to avoid disproportionate impacts, 3) Ensures equitable access to air transportation for underserved regions, and 4) the strategy would be developed with an eye towards enhancing economic opportunity for all, throughout Washington State.

Rita asked for input after her comments. The only comment was to clarify that our approach is for commercial aviation.

Rob discussed more information on how the process and the deliverables of the System Plan will inform the CACC.

Rita then presented some topics to refine our focus on how the state System Plan can inform the Commission. There was some discussion before David shared the next steps.

Next Steps

David shared the next steps for the Commission and staff.

- Address the recommendations Steve Edmiston made today
- Conduct the open house and collect feedback
- Contract a consultant for the 2022 Washington Aviation System Plan Update
- Work with the System Plan consultant to focus on potential siting options and environmental sustainability opportunities
- Prepare for a social equity and environmental justice webinar and CACC meeting of 11 October

Round Robin

- Steve thanked all the members for allowing him to share his information and the robust discussion.
- Representative Orwall thanked David and his staff for the work and to organize these meetings. She appreciates the dialogue and thanks everyone in attendance.
- Representative Dent appreciates all the work David and his staff do. He also thanks the entire group that is willing to serve on a volunteer basis on a commission like this. We have a heavy lift and it will take a while to sort all of this out. He also appreciates the dialogue and the willingness to share.
- David reiterated the point Representative Dent made; this is a long process. We have taken time to talk about a lot of issues, but he thinks these need to be well thought out, well-planned, and at the end of the day, we need to come up with recommendations that are executable, that people will latch onto, and legislators can move on those recommendations. He appreciates everyone's time.

Adjourned

Approximately 1:10 p.m.

Addendum

This addendum includes more of the information shared by Kris Johnson with Public Health Seattle and King County (PHSKC), and Elena Austin with the University of Washington, Seattle. With additional information from Steve Edmiston's perspective.

Kris commented that both studies were part of a state legislative proviso in different bills. The proviso asked Public Health and King County for a comprehensive literature review and community health needs assessment, and community health profile using existing data resources. Then, what recommendations for next steps based on this information. The community health profiles were areas within one mile of Sea-Tac airport, one to five miles, and five to 10 miles. These radii are based on studies that others have done. The comprehensive literature review used standards and strengths of evidence criteria borrowed from the Environmental Protection Agency (EPA). The health outcome cannot be linked in a causal way to the effects of air pollution that came out of the literature review. This is a descriptive study.

While King County's population is approximately 40 percent people of color, the majority of several communities live within 10 miles of the airport (airport communities). Over 70 percent of Native Hawaiian/Pacific Islander and Black/African American live within 10 miles of the airport and over 50 percent Hispanic residents of King County also live within 10 miles of the airport. A larger proportion of immigrants live within the airport communities compared to the rest of King County.

From the community health profile, compared to the rest of the county, it showed people in airport communities face disparities in health, health risk factors, and resources and are more vulnerable and more likely to be exposed to air and noise pollution. For some measures, health outcomes worsened with proximity to the airport and included hospitalization rates for heart disease, rate of death from all causes, rate of death from heart disease, and life expectancy was two to five years lower.

The comprehensive literature review looked at existing evidence. A lot of it had a starting place of assessments being conducted per pollutant by the EPA. Public Health Seattle conducted a strength of evidence analyses based on the EPA standards. So, when there is discussion around causal or likely-causal relationship between a pollutant and a health outcome, they are talking about multiple studies and a high level of evidence that controlled for potential other causes. The literature shows significant evidence of causal or likely-causal relationship between noise pollution and hypertension and heart disease among adults, and poor school performance among children. There is some suggestive evidence of a link between noise pollution and memory retention in adults. Air pollutants tied to airport operations include the particulate matter of different sizes, ozone and black carbon, carbon monoxide, and Sulphur oxides. Exposure to these pollutants are linked to respiratory problems, cardiovascular issues, nervous system issues, metabolic issues, and reproductive health concerns. The literature review showed that we need to know more about these exposures.

Elana shared the results from the MOV-UP study which was to study the implications of air traffic at Sea-Tac airport, assess the concentrations of ultrafine particulate matter (UFP) in areas surrounding and directly impacted by air traffic (10-mile radius), distinguish between and compare concentrations of aircraft-related and other sources of UFP, and coordinate with local governments, share results and solicit feedback from the community.

Ultrafine particles are currently unregulated by the EPA in terms of their emissions and community air concentration levels but are potentially important in determining health outcomes. Health effects are more uncertain compared to PM_{2.5}, which is currently regulated by the EPA, and UFP are associated with neurological and birth outcomes. Sources include diesel combustion, wood smoke and photochemical processes. UFP are variable over spatial and temporal distribution. Important characteristics of UFP are they have a larger surface area, relative to their size; they are small enough to enter the bloodstream, cross the placenta, and cross the blood-brain barrier; they have very little mass; and they are measured differently than PM_{2.5} (UFP is counted vs mass for PM_{2.5}).

The MOV-UP study equipped a car with high quality air sampling instruments for mobile monitoring which was conducted for a year over 2018-2019. The main results from this study identified two features in the UFP being sampled; roadway and ultra-ultrafine. High values were found on the roadway feature and positively correlated with black carbon and high total particle number concentration. The roadway feature median diameter from the Nanoscan was approximately 30 nanometers. The second feature identified was the ultra-ultrafine particle feature which was not correlated with traffic roadways or black carbon. They were positively correlated with ultra-ultrafine particles and the median diameter from the Nanoscan was approximately 15 nanometers.

They did additional analyses to identify the association between the ultra-ultrafine feature and aircraft traffic. They found the ultrafine feature was associated with landing aircraft and have higher emissions of particles per kilogram of jet fuel burned as compared to the emissions of ultrafine particles as seen on the roadway per kilogram of diesel fuel burned. Their main conclusions were, the ultrafine particles are emitted from both traffic and aircraft sources and the total concentration of UFP (diameter between 10 – 1000 nm) did not distinguish between roadway and aircraft features. The spatial impact of traffic and aircraft UFP emissions can be separated using a combination of mobile monitoring and standard statistical methods. There are key differences in the particle size distribution and the black carbon concentration for roadway and aircraft features. Fixed site monitoring confirms that aircraft landing activity is associated with a large fraction of particles between 10-20 nm. (MOV-UP Project Website <https://deohs.washington.edu/mov-up>).

Emerging research includes a systematic literature review of air quality in close proximity to airports (<https://www.sciencedirect.com/science/article/pii/S2590252021000118?via%3Dihub>); association of aircraft UFP and preterm birth at LAX (<https://ehp.niehs.nih.gov/doi/10.1289/EHP5732>); association of aircraft UFP and risk of malignant brain cancer at LAX (<https://cancerres.aacrjournals.org/content/81/16/4360>).

Steve commented that he is one of two voting commissioners appointed to represent the interest of the citizens of Washington State. As such, he is assigned to represent the public interest in the communities that are included in the Commission's site research and understand the impacts of a large commercial aviation facility on a community.

Steve shared that the CACC's guiding principles direct us to use the learnings from the above public health report [along with other published information] in siting a new airport. We are seeking the greater good, we are not here to benefit a specific group, we are here to ensure social equity, and ensure our needs today will not jeopardize the ability of future generations to meet their needs. We are here to ensure underrepresented individuals have a voice.

Steve believes this PHSKC report is critical information for communities we consider for siting a large commercial aviation facility moving forward. This report matters for communities being considered because people face significant disparities in health, resources, and other risk factors. Airport communities have deaths from cancer between 1.1 and 1.4 times higher than expected, heart disease deaths were between 1.3 and 2.3 times higher, and stroke deaths were between 1.4 and 1.9 times higher than expected. The closer you are to the airport, the higher the number of excess deaths associated with these causes. He wants the Commission, when promoting the economic needs and benefits of an airport to a community, have a real vision/plan/intent to fully address the public health consequences.

The report talks about causal relationships. A relationship is considered causal when multiple, high-quality studies conducted by multiple researchers shows that exposure leads to the health outcome in question, the biological pathways of harm are supported by the evidence available, and alternative explanations have been ruled out.

Based on evidence to date.

Health outcomes resulting from noise pollution:

- Cardiovascular – causal
- Sleep disturbance – causal
- Annoyance – causal
- School performance – likely causal

Health outcomes resulting from fine particulate matter:

- Cardiovascular – causal (short-term exposure), causal (long-term exposure)
- Respiratory – causal (short-term exposure), causal (long-term exposure)
- Nervous system – suggestive evidence (short-term exposure), likely causal (long-term exposure)
- Birth outcomes – suggestive evidence (short-term exposure), likely causal (long-term exposure)

This report is a tool to assess public health impacts at new/expanded sites.