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June 22, 2021

Dr. Kris Johnson
Senior Social Research Scientist, Assessment, Policy Development & Evaluation
Public Health—Seattle & King County (PHSKC)
Sent via email: krijohnson@kingcounty.gov

Re: Initial Concerns and Questions for Public Health-Seattle & King County

Dear Kris:

Thank you for our recent discussion with you regarding the PHSKC report, *Community Health and Airport Operations Related Noise and Air Pollution: Report to the Legislature in Response to Washington State HOUSE BILL 1109*.

We understand the County was tasked with completing this report. However, we do not understand why the County chose not to notify or coordinate with the Port of Seattle in developing such a report.

The Port of Seattle works closely with Puget Sound Clean Air Agency and other regulatory agencies in managing its airport-related noise and air pollution and if contacted, we would have supplied additional rigorous scientific and technical information that could have aided this study.

We have reviewed the report and have a number of questions and concerns regarding the County's methodology, data sources, scope, analysis, and conclusions. We appreciate the chance to have had a preliminary discussion with you, and we look forward to submitting a more detailed follow-up letter to the County soon.

In the meantime, we plan to share some of the attached concerns at the June 23 SeaTac Stakeholder Advisory Roundtable (StART) meeting, where the County will be presenting this report. These items are a partial list and represent some of our biggest concerns. Our overarching intent is that accurate, scientifically supported information be presented regarding the airport's role in the larger regional contribution of air and noise pollution.

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We do not expect the County to answer these questions during the StART meeting. We will include the questions along with additional information in our more detailed letter, and we look forward to talking to the County about how they can be answered, as well as opportunities to update the report with best available science and information. It is worth restating that our overarching intent is not to sidestep the issues of community health but to ensure that accurate, scientifically supported information be presented regarding the airport's role in the larger regional contribution of air and noise pollution.

Thank you for your consideration.

Best regards,

A handwritten signature in blue ink, appearing to read "Arlyn Purcell". The signature is fluid and cursive, with the first name "Arlyn" and the last name "Purcell" clearly distinguishable.

Arlyn Purcell
Director, Aviation Environment & Sustainability

***Community Health and Airport Operations Related Noise and Air Pollution:
Report to the Legislature in Response to Washington State HOUSE BILL
1109***

Initial Port of Seattle Concerns and Questions for Public Health-Seattle & King County (PHSKC)

1. How did PHSKC evaluate the relative air pollutant contributions from the Seattle-Tacoma International Airport (SEA) as compared to other sources, such as surface traffic and other aviation activity in the region? For context, (p. 34) describes SEA aircraft emissions as approximately 0.25% of total PM_{2.5} emissions in the Seattle-Tacoma region and 0.87% of all PM_{2.5} emissions from mobile sources, yet we don't see source or exposure levels in the report's later statements regarding health impacts and causality. Information is available that could have been used to do this work; did your literature review include that information and how did you incorporate it?
2. Similarly, the PHSKC report documents a number of conditions that could lead to community health disparities: extent of medical care, number of smokers, access to health insurance, and level of physical activity, among others. How and where did the report consider those conditions as potential contributing factors?
3. How does the Report reach the conclusion that SEA's air and noise emissions lead to harmful health effects when the Report does not include a discussion of each of the steps typically required to complete a toxicity assessment necessary to support any such conclusion?

The intent of the Legislative proviso seems to be to evaluate the likely health impacts from airport operations. To do that effectively requires a toxicity assessment where the researcher reviews existing toxicity studies (usually from USEPA documents and the Integrated Risk Information System or IRIS database) to understand what levels of exposure or dose of each pollutant results in adverse health impacts (e.g., toxicity or dose-response information), an exposure assessment to determine what levels of exposure the community might encounter (e.g., exposure concentrations) from an emission source, and a risk characterization where these first two steps are combined to determine if the exposure could result in some kind of toxic impact or adverse health outcome (e.g., potential health risk).

This step would also involve a discussion of the uncertainties associated with the assessment and if the potential risk is likely to be overestimated or underestimated, given the assumptions in the previous steps. Although the report includes some hazard identification, we do not see the other steps reflected; yet even without these steps, the report seems to be concluding that SEA's air and noise emissions lead to harmful health effects. Robust scientific studies from USEPA and the Puget Sound Clean Air Agency could

have been used to do this work at a high level. Did your literature review include that information, and how did you use it?

4. The report states that “common concentration levels” are “likely” affecting population health (p. 22) and “all air pollutants released by airport activity have the potential to cause harmful health effects at commonly observed concentrations” (p. 26). Does the report note what those concentrations are, and the health effects shown to occur at those levels?
5. In particular, the report seems to say that air pollutant and aircraft noise levels near the airport exceed agency standards. We coordinate regularly with the Puget Sound Clean Air Agency (PSCAA), who have confirmed that regional air quality is in attainment. PSCAA has concluded that occasional particulate exceedances are due to woodsmoke. Did PHSKC discuss its conclusions with PSCAA? (And for noise, please note that the “standard” cited by the report, which comes from a World Health Organization European Region report, is an aspirational guideline, has not been enacted as policy in Europe, and draws its conclusions based on evidence that is (by its own admission) either low or moderate in strength.)
6. We understand that the study areas used in the report were specified in the Legislative proviso. The speaker notes for the PHSKC presentation state that these distances “are based on methods from prior studies of airport pollutants” and cite a study conducted near Los Angeles International Airport, an airport with substantially more activity and with different flight patterns, meteorology, and air pollutant levels. The areas used in the PHSKC study are not specifically related to flight paths or regional conditions and include almost half of the King County population. Does the report document (or did PHSKC think about) the implications of using such a large study area on the report comparisons and conclusions?
7. Did the County consider the inherent limitations monitoring the noise produced by aircraft in flight and the FAA requirement to use noise modelling, rather than monitoring (due to these limitations)?
8. Does the Report’s reliance on the 24-hour individual noise monitoring done on Beacon Hill take into account the fact that the 65 DNL FAA standard should be calculated over a full year?
9. Please explain how the County used the airport annoyance studies (References 7-9 cited on page 32 of the Report), which included annoyance factors other than noise levels and did not study noise levels specifically, to support the statement in the Report regarding noise levels specifically?
10. The report discloses a “gap in knowledge” with respect to the “levels of pollutant exposure resulting from airport operations” (p. ii), and PHSKC staff have stated that the report is meant to be descriptive. It appears that the report could be misinterpreted to mean that SEA is causing the health disparities noted. Would you please confirm that the report describes adverse

health outcomes and disparities for a broad area of southern King County, and does not have enough information to make conclusions about the causes of the health disparities?