REGION 10
SEATTLE, WA 98101

December 2, 2024

Steve Rybolt
Port of Seattle, Aviation Environment and Sustainability
P.O. Box 68727
Seattle, Washington 98168

Dear Steve Rybolt:

The U.S. Environmental Protection Agency has reviewed Federal Aviation Administration's November 2024 Draft Environmental Assessment for the Seattle-Tacoma International Airport Sustainability Airport Master Plan Near Term Projects (EPA Project Number 18-0056-FAA). The EPA has conducted its review pursuant to the National Environmental Policy Act and our review authority under Section 309 of the Clean Air Act. The CAA Section 309 role is unique to the EPA and requires the EPA to review and comment publicly on any proposed federal action subject to NEPA's environmental impact statement requirement.

The DEA evaluates the potential environmental impacts associated with implementing thirty-one near-term projects (NTPs) to meet the forecasted demand of the airport to 2032, including a second terminal with additional gates, an elevated busway, cargo facilities, roadway realignment, airfield updates, parking infrastructure, and facilities for sustainable aviation fuel. The project area is approximately 5.8 square miles in the City of SeaTac in King County, Washington. The DEA identifies and evaluates a No Action Alternative (Alternative 1), the Proposed Action (Alternative 2) which proposes to construct a new second terminal north of the existing terminal, and a Hybrid Terminal Option (Alternative 3).

After reviewing the DEA, the EPA has identified public health and environmental quality concerns about potential project impacts to communities with environmental justice concerns and is providing recommendations to improve the assessment and environmental outcome of the proposed action. In addition, the EPA recommends providing more clarifying information in the Final EA on analysis of impacts related to air quality, climate change, and wetlands. These and other recommendations are discussed in our enclosed Detailed Comments.

Thank you for the opportunity to review the DEA for this project. If you have questions about this review, please contact Emily Bitalac of my staff at 206-553-2581 or at bitalac.emily@epa.gov, or me, at 206-553-2117 or at sturges.susan@epa.gov.

Sincerely,

SUSAN STURGES

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Date: 2024.12.02 10:32:05 -08'00'

Susan Sturges, Acting Manager
NEPA Branch

Enclosure

U.S. EPA Detailed Comments on the
Seattle-Tacoma International Airport SAMP NTP DEA
King County, Washington
December 2024

Environmental Justice (EJ)

Executive Order 12898 *Federal Actions to Address Environmental justice in Minority Populations and Low-Income Populations*, February 11, 1994 was supplemented by Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, April 26, 2023 which directs federal agencies, as appropriate and consistent with applicable law: to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with EJ concerns. Section 3 (b)(i) of EO 14096 also directs the EPA to assess whether each agency analyzes and avoids or mitigates disproportionate human health and environmental effects on communities with EJ concerns when carrying out responsibilities under Section 309 of the Clean Air Act, 42 U.S.C. 7609.

Consistent with EO 14096, the EPA recommends the FEA identify, analyze, and address adverse impacts of the proposed action and cumulative impacts to overburdened communities surrounding the project area.

Assessing the EPA's Environmental Justice Screening and Mapping Tool (EJScreen) information is a useful first step in understanding or highlighting locations that may be candidates for further review or outreach.[1] The EPA considers a project to be in an area of potential EJ concern when an EJScreen for the impacted area shows one or more of the EJ Indexes at or above the 80th percentile in the nation and/or state. At a minimum, the EPA recommends an EJScreen analysis consider EJScreen information for the block groups which contains the proposed action and a one-mile radius around those areas.

The EPA conducted an EJScreen analysis which indicates that for the block group encompassing the majority of the general study area (GSA), all 12 of the EJ Indexes exceed the 80th percentile when compared to the state. Exceeded EJ Indexes include indicators relating to air quality with particulate matter 2.5 at the 87th percentile, ozone at the 80th percentile, nitrogen dioxide at the 95th percentile, diesel particulate matter at the 98th percentile, and toxic air releases at the 98th percentile. Further, EJScreen shows the GSA experiences higher rates of asthma than the state average and are in the 91st percentile compared to the state for lack of health insurance. The block groups surrounding the GSA show similar percentiles.

The EPA also recommends considering the Washington State Department of Health Environmental Health Disparities map.[2] This map depicts cumulative health impact as a ranking from 1 to 10, with 10 being the highest impact. These rankings reflect the risk each community faces from multiple environmental hazards and the degree to which a community is more vulnerable to those hazards because of certain sociodemographic factors. Rankings for this map can be interpreted to measure

[1] https://ejscreen.epa.gov/mapper/. Accessed 11/14/2024.
[2] https://fortress.wa.gov/doh/wtnibl/WTNIBL/. Accessed 11/14/2024.

relative environmental risk factors in communities. The GSA rank is 10, with surrounding areas ranking 9 and 10.

These screening tools indicate that the proposed project is located within an area with EJ concerns and that these communities face significant environmental disparities. The EPA has concerns that the historically overburdened nature of the area coupled with any increase in emissions and noise exposure could result in significant disproportionate adverse impacts on communities with EJ concerns. The EPA, therefore, recommends the FEA further consider cumulative effects in the EJ analysis and implications for the proposed projects. The sections below include specific recommendations for public health, mitigation, children's health, and meaningful engagement.

Public Health

The DEA states that Puget Sound Clean Air Agency does not "anticipate exceedances of the NAAQS as a result of the Action Alternatives" and that "action alternatives are not expected to cause an exceedance of USEPA's health-based standards and therefore are not expected to cause adverse health effects to EJ populations."[3] The EPA recommends the FEA clarify the health-based standards this statement is referring to. The EPA recommends the FEA note that although no NAAQS exceedances are anticipated to occur, and the NAAQS are designated to protect sensitive populations, NAAQS attainment does not assure there is no localized harm to populations.

Studies also indicate that proximity to airports and airport activities may cause adverse health effects including increased rate of premature death, pre-term births, and decreased lung function.[4] The EPA also notes local ongoing studies at the University of Washington with assistance from surrounding cities and the Port of Seattle are examining impacts from ultrafine particulate matter.[5]

To fully identify and evaluate public health impacts, the EPA recommends partnering with public health experts including local and state health departments, tribal health agencies, or federal public health agencies. We recommend the analysis consider the cumulative effects of increasing and existing exposures on the affected communities. This is consistent with the Council on Environmental Quality's (CEQ) EJ Guidance which states that "agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards… Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action."[6]

Also consider conducting a Health Impact Assessment (HIA). HIAs are flexible decision-support tools that help to determine the potential effects of a project on the health of a population and the distribution of those effects within the population and can provide recommendations on monitoring

[3] DEA, page 4-54.
[4] A Systematic Review of the Impact of Commercial Aircraft Activity on Air Quality Near Airports https://pmc.ncbi.nlm.nih.gov/articles/PMC8318113/. Accessed 11/14/2024.
[5] https://connect.burienwa.gov/airport-operations-and-public-health/. Accessed 11/14/2024.
[6] https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf. Accessed 11/15/2024.

and managing those effects.[7] Benefits of HIAs include empowering affected communities, raising awareness of health issues, protecting public health, advancing health equity, and building positive health outcomes early in the decision-making process. An HIA may be especially helpful as the FAA continues to plan for long term vision environmental review projects. [8] The EPA notes the Federal Highway Administration and the Washington State Department of Transportation included a local HIA for the State Route 520 Bridge Replacement project which may be a good resource.[9] The EPA's HIA Resource and Tool Compilation also offers resources to collect and analyze data, establish a baseline profile, assess potential health impacts, and establish benchmarks and indicators for monitoring and evaluation.[10]

Mitigation

The DEA concludes that communities with EJ concerns would be exposed to increased air emissions, noise, socioeconomic impacts, and roadways that do not meet mobility standards because of the proposed action but that these impacts are not significant with mitigation. However, the DEA does not identify mitigation to address these impacts.[11] The EPA recommends the FEA identify mitigation measures through robust community involvement (e.g., informed by meaningful engagement with the impacted community).

The CEQ EJ Guidance identifies important ways to consider mitigation for EJ under NEPA, including:

- "Mitigation measures identified as part of an EA . . . should, whenever feasible, address significant and adverse environmental effects of proposed federal actions on minority populations, low-income populations, and Indian tribes."
- "Each Federal agency must provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices."

The EPA recommends developing specific mitigation measures to address the potential disproportionate EJ impacts. In developing mitigation measures, consider mechanisms to minimize impacts of the proposed project to communities. It is important to shape mitigation efforts through engagement with each uniquely impacted group. Examples of mitigation measures to consider include installing double-paned windows and sound insultation to residential buildings, schools, businesses, places of worship, etc. to reduce impacts from noise. Another example may be to hire a noise liaison to talk to communities to better understand the regulations on noise levels within FAA's policies and the health impacts increased exposures to noise may cause. Additionally, High Efficiency Particulate Air (HEPA) filters and vegetation can be installed and planted to help with air quality concerns.

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[7] National Research Council. 2011. Improving Health in the United States: The Role of Health Impact Assessment. Washington, DC: The National Academies Press.

[8] DEA, page 1-2.

[9] https://wsdot.wa.gov/sites/default/files/2021-11/SR520-report_I5toMedina-FEIS-Attachment14-HealthAssessment.pdf. Accessed 11/20/2024.

[10] https://www.epa.gov/healthresearch/health-impact-assessment-hia-resource-and-tool-compilation. Accessed 11/20/2024.

[11] DEA, page 4-8.

Children's Health

EJScreen indicates that the block group encompassing the majority of the GSA is in the 94th state percentile for children under the age of 5. The DEA also states that there are twelve schools within the 65+ Day Night Average Sound Level (DNL) noise contour.[12]

We recommend the FEA include a discussion of children's susceptibility to noise. For example, young children are more susceptible than adults to the effects of background noise on spoken communication. Short-term noise exposure can hinder classroom learning, while long-term noise exposure correlates with decreased reading comprehension and motivation.[13,14] We recommend working with state and/or local authorities to identify potential mitigation, such as retrofitting schools with insulation, soundproofing windows, adding a second windowpane, sealing gaps, installing sound barriers, adding vegetative barriers, and improving exterior roofing, consistent with radon safety. The DEA states that only two schools have been sound insulated.

In addition, children are especially vulnerable to air emissions due to higher relative doses of air pollution, smaller diameter airways, and more active time spent outdoors and closer to ground-level vehicle exhaust sources. We recommend the FEA include a discussion about reducing child exposure and identify any additional mitigation.

As identified above, the GSA has a higher percentage of asthma rates than the state average. We recommend the FEA include a discussion of existing asthma rates and severity among children and the community and identify mitigation measures such as air filters for schools.[15]

Meaningful Engagement

The DEA discusses two virtual roundtable discussions with community leaders in 2020.[16] We recommend the FEA detail any additional engagement including with the broader community to ensure all affected community members are provided with opportunities to participate in the decision-making process. The EPA notes the FAA hosted four in-person public meetings in different locations during the DEA comment period. The EPA recommends in addition to in-person meetings, to offer virtual options to maximize participation opportunities for communities that will be affected by the project. We also recommend the FEA discuss how community feedback is reflected in the decision-making process.

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[12] DEA, page 4-44.

[13] Assessment of Noise Exposure to Children: Considerations for the National Children's Study. National Center for Biotechnology Information https://pubmed.ncbi.nlm.nih.gov/25866843/. Accessed 11/14/2024.

[14] Assessing Aircraft Noise Conditions Affecting Student Learning, Volume 1: Final Report (2014). National Academies of Sciences, Engineering, and Medicine. 2014. The National Academies Press. https://nap.nationalacademies.org/read/22433/chapter/1. Accessed 11/14/24.

[15] Ambient Air Pollution: Health Hazards to Children. American Academy of Pediatrics. https://publications.aap.org/pediatrics/article/147/6/e2021051484/180283/Ambient-Air-Pollution-Health-Hazards-to-Children. Accessed 11/14/2024.

[16] DEA, page 3-70.

Air Quality

The DEA establishes that the area surrounding the project is in attainment with all criteria air pollutants. The EPA recommends the FEA include a table of existing background criteria air pollutant concentrations to quantitatively disclose existing air quality conditions. Background air quality design concentrations can be calculated using local regulatory monitor datasets or tools such as the NW-AIRQUEST design concentration lookup tool supported by the local and regional air quality authorities.[17]

The EPA recommends the FEA identify specific Best Management Practices (BMPs) and minimization measures related to air quality. For construction activities, we recommend the FEA:

- Identify and disclose the specific BMPs from FAA AC 150/5370-10H, *Standard Specifications for Construction of Airports*, which is mentioned in the DEA, that will be used to reduce potential emissions. Particulate matter (PM) and nitrogen oxides (NOx) emissions from construction activities are of particular concern.
- Develop a dust management plan to ensure PM emissions from construction are minimized. Emissions from construction equipment impact the health and well-being of people working and living near construction sites.
- Establish a Diesel Emissions Reduction Policy for the project to include procedures such as idle reduction practices.[18]

The EPA also notes some errors in Table 3-2 for PM and the same table in Appendix C Table 1 in the DEA. We recommend the FEA correct these errors including:

- The "Form of Measurement" column entry for $PM_{2.5}$ 1-year average is listed as "particulate matter" should be corrected to "Annual mean, averaged over 3 years."
- The third row for PM is listed as "(PM_{10})" should be corrected to "($PM_{2.5}$)" such that the primary and secondary 24-hour standard for $PM_{2.5}$ is 35 ug/m^3.

Climate Change

GHG Emissions

The EPA appreciates the DEA includes a GHG emission analysis that quantifies operational and construction emissions associated with each alternative for select years. The GHG emission analysis demonstrates the proposed action will increase GHG emissions by 2.2% metric tons compared to the No Action Alternative in 2032 and by 7.4% metric tons in 2037.[19] The FAA is pursing to achieve net zero GHG emissions by 2050 from the U.S. aviation sector, while the Port of Seattle's Century Agenda goal is to reach net zero GHG emissions by 2040.[20] Washington State Department of Ecology's Climate Commitment is also to reduce GHG emissions by 95% by 2050.[21] The EPA recommends the FEA discuss consistency with state and other locally relevant GHG emission reduction and climate resilience goals.

[17] https://lar.wsu.edu/nw-airquest/. Accessed 11/14/2024.
[18] https://www.epa.gov/dera/reducing-diesel-emissions-construction-and-agriculture#construction. Accessed 11/14/2024.
[19] DEA Appendix C, page 66.
[20] DEA Appendix C, page 64-65.
[21] https://ecology.wa.gov/Air-Climate/Climate-Commitment-Act#capandinvest. Accessed 11/14/2024.

To help improve the NEPA analysis and provide additional clarity for the public, the EPA also recommends the FEA:

- Identify, where relevant and consistent with the purpose and need for this EA, opportunities that can reduce GHG and other emissions, increase resiliency, and promote adaptation to a changing climate. The CEQ's 2023 NEPA Guidance on Consideration of GHG and Climate Change (CEQ NEPA GHG Guidance) indicates that agencies, "should analyze reasonable alternatives, including those that would reduce GHG emissions relative to baseline conditions, and identify available mitigation measures to avoid, minimize, or compensate for climate effects."[22]
- Include the social cost of GHG (SC-GHGs) to better contextualize GHG emissions from the alternatives. The CEQ NEPA GHG Guidance includes best practices for quantifying direct and indirect emissions and computing the SC-GHGs. The EPA has developed estimates of the SC-GHG which reflect the best available science for estimating the social value of changes in GHG emissions.[23]
- Update the emissions factors with the most recent data.[24] The DEA indicates the 2022 EPA GHG Emission Factors Hub emission factors were used to derive emissions for several stationary sources.[25]
- Discuss considerations taken to determine future annual fuel usage (e.g., whether the total assumes potential future fuel reductions or integration of biofuels and how those assumptions were made).
- Clarify potentially applicable reporting requirements for the proposed action alternative (e.g., reporting under 40 CFR Part 98 Subpart C for stationary fuel combustion).[26]

Green Infrastructure

The DEA explains that King County is advancing green building codes and a more sustainable commercial energy code towards net zero GHG in new buildings.[27] We recommend the FEA discuss how the alternatives align with these plans, and to consider net-zero ready design features. The EPA also recommends using green building practices to the extent practicable to reduce potential greenhouse gas emissions (e.g., operating cleaner diesel fleets during construction, such as the use of Tier 4 engines or ground electric equipment, electrification of airport operations and fleets, diversifying fuel sources, improving energy efficiency, and considering renewable energy such as on-site solar photovoltaic).

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[22] Council on Environmental Quality. National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change. January, 2023. https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate. Page 1201. Accessed 11/14/2024.

[23] U.S. Environmental Protection Agency. (2023). Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review": EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances. https://www.epa.gov/environmental-economics/scghg. Accessed 11/14/2024.

[24] https://www.epa.gov/climateleadership/ghg-emission-factors-hub. Accessed 11/20/2024.

[25] DEA Appendix C, page 47.

[26] DEA Appendix C, page 56.

[27] DEA Appendix C, page 64.

Sustainable Procurement

Executive Order 14057 *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability* requires federal agencies to set annual targets for cutting GHG emissions, including by way of sustainable procurement via a Buy Clean policy. The EPA recommends the FEA discuss strategies to ensure sustainable procurement of construction materials (e.g., steel, concrete, etc.) in accordance with the federal guidance. We recommend requiring suppliers and contractors to publicly disclose GHG emissions and set science-based targets to reduce emissions. The EPA announced expanded technical assistance opportunities to businesses, the federal government, and other organizations by offering Environmental Product Declaration (EPD) development support to help estimate embodied carbon emissions. A map of manufacturers that provide EPDs and links to plug into a whole-building embodied carbon model is linked below.[28] General Services Administration also provides tools for measuring embodied carbon in buildings and actionable strategies for reduction and procurement approaches.[29] The EPA also notes additional tools and resources for EPDs and life cycle assessments.[30]

Climate Resilience

Green infrastructure techniques can also reduce stormwater runoff. Given the Port's recent vulnerability assessment that found stormwater and industrial wastewater system infrastructure was moderately vulnerable to climate effects,[31] the EPA encourages the implementation of low-impact infrastructure to reduce stormwater runoff in onsite stormwater management. Green infrastructure (e.g., raingardens and bioretention systems) may help enhance resilience to increased rainfall intensity by reducing potential for operational disruptions due to flooding and filter pollutants transported in runoff. The EPA notes additional resources related to green infrastructure, which can be consulted.[32]

Wetlands

The DEA states that projects will protect wellhead protection areas (WHPAs) from groundwater contamination.[33] The EPA recommends the FEA include additional analysis on the hydrologic connectivity between wetlands and WHPAs to fully evaluate the potential impacts to groundwater that may result from altering potential recharge areas. If additional analysis suggests that impacts to wetlands in the project area will impact recharge zones and groundwater quality within the WHPAs, we recommend the project and the FEA commit to avoiding impacts to those wetlands or finding ways to mitigate these potential impacts to WHPAs.

[28] https://www.buildingtransparency.org/resources/maps/. Accessed 11/29/2024.
[29] https://sftool.gov/learn/about/658/embodied-carbon. Accessed 11/29/2024.
[30] https://www.epa.gov/greenerproducts/tools-resources-and-funding-opportunities. Accessed 11/29/2024.
[31] DEA, page 4-62.
[32] https://www.epa.gov/green-infrastructure. Accessed 11/13/24.
[33] DEA Appendix M, pdf page 56.