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7/12/22, 9:02 AM Mail - Commission-Public-Records - Outlook
[EXTERNAL] July 12 Port Commission Meeting - Public Comment re the need to protect
urban tree canopy
Anne Miller
Tue 7/12/2022 8:57 AM
To: Commission-Public-Records
WARNING: External email. Links or a achments may be unsafe.

Hello,
I am writing to express my concerns about the Port of Seattle's planned development for North SeaTac Park and surrounding tree covered areas.
As a mother and person of faith, I am deeply concerned about our environment and the legacy that we are leaving to our children. I want a world in which my children, and all children, have clean air to breathe, clean water to drink, food that is safe to eat and wilderness left to explore. I believe that each of us has a duty to protect and preserve our environment but public officials have a special duty because they are making decisions on behalf of the public.
The Port of Seattle Commission has a duty to support, not just the short term economic well-being of their local constituents but, also to the long term environmental health of the wider community. In addition, we will not have long term economic health in a world that is environmentally in peril. With global warming and increased storms, floods, fires etc. public officials need to work to mitigate the environmental challenges that we are already seeing. This means that they need to protect our remaining forests, streams, wetlands, and wild areas which help to sequester carbon, clean our air, and provide needed recreational and cooling areas for people as well as habitat for birds and other wild creatures.
As such, I would ask that the Port of Seattle immediately support the following Community Forest Consensus to defend the people in the community surrounding North SeaTac Park, and all people living within the ten-mile community surrounding this airport, from the negative health and climate impacts posed by near-term plans for extensive deforestation as and green space destruction by the Port of Seattle, the current owner and assigned steward of North SeaTac Park. The Consensus is as follows:

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. This may be
accomplished by changes in zoning and law, by conservation easement, by transfer or sale of this park land to an appropriate governmental entity, or by a combination of these or other means.
The Port caused the removal by eminent domain of thousands of residents, along with their homes and schools, from the land that this park now occupies. The Port has acknowledged that the creation of the park was “the culmination of a long term and very open planning process to compensate the area’s residents for cumulative airport impacts.” (1) This measure would honor that expressed intent of the Port.
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with exceptions only for
targeted
measures to protect public safety or the health of the surrounding natural ecosystem, or to prevent substantial physical damage to existing private or public property, when these objectives cannot be reasonably achieved through other means.
This call for action responds to the recommendation of Public Health - Seattle & King County (PHS&KC) to increase green space and tree coverage, particularly coniferous trees, within ten miles of SeaTac International Airport in order to reduce human exposure to airport-generated pollutants known to cause

disease and shorten lives. (2) PHS&KC has found that, with severity increasing as proximity to the airport increases, lifespans in this ten-mile area are between 1.7 and 5 years shorter than in the balance of the county; premature births, low birthweights, and childhood learning problems are more common; and rates of cancer, and heart, respiratory, and cardiovascular disease are significantly higher. (2)
Furthermore, this call is put forth in order to safeguard human health in a community where residents experience high levels of environmental health disparities as measured by the Washington State Department of Health. (3)
Furthermore, this call holds the Port of Seattle and our greater community accountable to the principles of environmental justice required under Presidential Executive Order 12898 and US Department of Transportation Order 5610.2. That order requires that activities that would have “a disproportionately high and adverse effect on minority populations or low-income populations” be avoided or mitigated when practicable. (4, 5)
As reported by PHS&KC, “the majority of people in King County identifying as Black/African American, Hispanic/Latino, and Native Hawaiian/Pacific Islander live in communities within 10 miles of the airport”, “a greater proportion of people in these communities are immigrants, and a slightly higher proportion are children,” and the percentage of people in near poverty or poverty increased the closer you are to the airport”, ranging from 37.2% - 24.4% within ten miles of the airport as compared with 16.1% in the balance of the county. These poverty rates are even higher for children. (2)
This moratorium must go into effect immediately in order to prevent the Port of Seattle from implementing its current near-term plans that would result in significant reduction of green space and tree coverage in this community, and must continue until the CARE Plan for the Greater North SeaTac Park Community, as outlined below, or a plan with comparable protections for our community’s health, is in place.

(CARE Plan), by the Port of Seattle and other partnering jurisdictions, that is fully funded and professionally managed, in order to restore and maintain for future generations the natural areas within and surrounding North SeaTac Park, including forests and waterways and with emphasis on Tub Lake and its prehistoric peat bog, a type of wetland that is highly environmentally sensitive and increasingly rare in
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King County.
The plan must include control of invasive weeds and preparation for existing and expected climate impacts such as drought, high heat, and pests.
It must, in a manner and at a scale recommended by experts in urban forestry and public health, propose specific steps to implement the recommendation made by the Seattle-King County Health Department to increase green space and tree coverage, particularly coniferous trees, near SeaTac Airport in order to reduce residents’ exposure to toxics from airport operations.
It must protect and retain existing trees, as large-diameter trees can capture more toxic particulates, store “disproportionally massive amounts of carbon,” and “fulfill a variety of unique ecological roles such as increasing drought-tolerance, reducing flooding from intense precipitation events, altering fire behavior, redistributing soil water, and acting as focal centers of mycorrhizal communication and resource sharing networks." (6)
It should set a goal of restoring urban tree canopy coverage in this community from its current low averages, for example, of 21% in SeaTac (25% not including the airport), 30% in Burien, and 29% in Des Moines, to 40% or more, as recommended by Forterra NW in three studies that it prepared for the Port of Seattle Airport Community Ecology Fund. (7-9)
And it must include concrete actions to limit, to the extent reasonably possible, development activities of the Port of Seattle within ten miles of the airport to its existing developed footprint. The Port controls sprawling multi-acre, single-level parking lots as well as other already-paved and underutilized properties, where redevelopment with higher density approaches are feasible and ecologically sound.

Sincerely,
Anne Miller

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7/12/22, 8:56 AM Mail - Commission-Public-Records - Outlook
[EXTERNAL] Public Comment Concerning North SeaTac Park
Isla Scott
Tue 7/12/2022 8:54 AM
To: Commission-Public-Records
2 attachments (452 KB)
TreeEquityFactsheet_3_11_22.pdf; Tree Equity List of Sources.pdf;

WARNING: External email. Links or a achments may be unsafe.

Hello,
I wish to speak at today's meeting (July 12th, 2022) about North SeaTac Park and the Port of Seattle's proposal to commercially develop within the park. I will be speaking on a lot of scientific research, so I have included my document of sources. I have also included a South Seattle Climate Action Network fact sheet on tree equity and a link to their website page about what trees are at risk and why that matters. That link can be found here: https://www.kctreeequity.org/trees.
Most importantly, I have included a link to the Defenders of North SeaTac Park's Community Forest Consensus. This consensus calls for "emergency action and long-term solutions by our elected officials to defend the health of people in the North SeaTac Park community and within the 10 miles of SeaTac International Airport as well as the stability of our climate by protecting this community's forests, waterways, parklands, and trees." You can find more information on the consensus and its sources at this link: https://www.kctreeequity.org/consensus. I encourage you to read through it and consider signing the consensus, as commissioners are a critical factor in helping save our parks and trees.
At the meeting today, I will be saying this:
"Hi My name is Isla Scott, and I am a University of Washington student studying the environment. I am working with the South Seattle Climate Action Network and am here today to speak to you about our concerns for North SeaTac Park. Within the Port of Seattle's Sustainable Airport Master Plan and the Port's Real Estate Strategic Plan, the port proposes to commercially develop 31.5 acres inside North SeaTac park and over 70 acres in neighborhoods around it to expand SeaTac International Airport. Conversely, the Public Health of Seattle and King County has actually recommended an increase in green spaces and tree coverage near the airport to reduce human exposure to deadly airport pollutants.
As a person pursuing environmental science as a career, I cannot urge you enough to honor this recommendation and defend North SeaTac Park. I have done extensive research into the effect of airports and aircrafts on the communities that surround them. The closer one is to an airport, the higher chances of decreased lung and cardiac function, chronic respiratory and heart disease, lung cancer, bronchitis, asthmatic attacks, depression, anxiety, respiratory infections in children, and much more. However, it has been found that green spaces and tree canopy cover can largely mitigate these impacts. And not only that, but they can also reduce crime, contribute to energy conservation,

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promote economic prosperity, and cool neighborhoods. And I haven't even begun to touch on the environmental benefits and how vital trees are to mitigating climate change.
This is a major environmental health issue. And as shown by the US Census Bureau, this is a major environmental justice issue. Please defend this park and the community that surrounds it. Trees save

lives. Before this meeting, I emailed you all of my sources and more. Please read through them and feel the impact this community will feel if you take those trees away.
I thank you for your time and for allowing me to speak today.
Kindest regards,
Isla Scott

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https://apps.who.int/iris/bitstream/handle/10665/345751/WHO-EURO-2016-3352-43111-60341-eng.pdf?sequence=1&isAllowed=y
Human health:
Lammers A, Janssen NAH, Boere AJF, Berger M, Longo C, Vijverberg SJH, Neerincx AH, Maitland - van der Zee AH, Cassee FR. 2020. Effects of short-term exposures to ultrafine particles near an airport in healthy subjects. Environment International. 141:105779. doi:10.1016/j.envint.2020.105779.
Quote: Short-term exposures to aviation-related UFP near a major airport, was associated with decreased lung function (mainly FVC) and a prolonged QTc interval in healthy volunteers. The effects were relatively small, however, they appeared after single exposures of 5 h in young healthy adults.
Kampa M, Castanas E. 2008. Human Health Effects of Air Pollution. Environmental Pollution. 151(2):362–367. doi:10.1016/j.envpol.2007.06.012. https://www.sciencedirect.com/science/article/abs/pii/S0269749107002849.
Quote: Air pollution has both acute and chronic effects on human health, affecting a number of different systems and organs. It ranges from minor upper respiratory irritation to chronic respiratory and heart disease, lung cancer, acute respiratory infections in children and chronic bronchitis in adults, aggravating pre-existing heart and lung disease, or asthmatic attacks. In addition, short- and long-term exposures have also been linked with premature mortality and reduced life expectancy.
Lin S, Munsie JP, Herdt-Losavio M, Hwang SA, Civerolo K, McGarry K, Gentile T. 2007. Residential proximity to large airports and potential health impacts in New York State. International Archives of Occupational and Environmental Health. 81(7):797–804. doi:10.1007/s00420-007-0265-1.
Quote: Increased relative risks of hospital admissions for respiratory conditions were found for residents living within 5 miles from the airports compared to those living >5 miles
Urban green spaces and health: A review of evidence. 2016 Copenhagen: WHO Regional Office for Europe
https://apps.who.int/iris/bitstream/handle/10665/345751/WHO-EURO-2016-3352-43111-60341-eng.pdf?sequence=1&isAllowed=y.
Quote: This report summarized the existing evidence of health effects of urban green spaces to conclude that there are many public health benefits through diverse pathways, such as psychological relaxation and stress reduction, enhanced physical activity, and

mitigation of exposure to air pollution, excessive heat, and noise as well as other harmful factors in the urban environment
Quote: A city of well?connected, attractive green spaces that offer safe opportunities for urban residents for active mobility and sports as well as for stress recovery, recreation and social contact, is likely to be more resilient to extreme environmental events, such as heat waves (due to the mitigation of urban heat island effect) and extreme rainfall (due to reduced surface run?off). Such a city is also likely to have healthier citizens, reducing demands on health services and contributing to a stronger economy.
Wolf KL, Lam ST, McKeen JK, Richardson GRA, van den Bosch M, Bardekjian AC. Urban Trees and Human Health: A Scoping Review. Int J Environ Res Public Health. 2020 Jun 18;17(12):4371. doi: 10.3390/ijerph17124371. PMID: 32570770; PMCID: PMC7345658.
Quote: Overall, we have found that exposure to trees is associated with multiple health benefits. Underlying this relationship is the importance of access. Studies have found that there are often disparities in distribution of trees in urban areas with greater tree density being found in neighborhoods having higher household incomes, which may in turn exacerbate existing socio-demographic health inequities. For example, people who may not have sufficient resources to operate air conditioning in their homes may also live in neighborhoods that lack the cooling benefits of urban trees, thereby compounding their vulnerability to extreme heat events. Adopting a health equity lens in the planning and management of urban forests can ensure a more equitable distribution of trees across towns and cities and provide residents with access to the health benefits of trees.
Quote: This review will help inform future research and practice, and demonstrates why urban forest planning and management should strategically promote trees as a social determinant of public health.

Beyer KM, Kaltenbach A, Szabo A, Bogar S, Nieto FJ, Malecki KM. Exposure to neighborhood green space and mental health: evidence from the survey of the health of Wisconsin. Int J Environ Res Public Health. 2014 Mar 21;11(3):3453-72. doi: 10.3390/ijerph110303453. PMID: 24662966; PMCID: PMC3987044.
Quote: A 25% increase in the proportion of tree canopy in a neighborhood is associated with a decrease in the DASS score for depression of approximately 1 point.
Quote: We found in our sample that higher levels of neighborhood green space

[Link]
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correspond to better mental health outcomes, when controlling for a wide range of confounding factors. The associations between green space and mental health are significant and sizeable and persist with different measurement techniques. Furthermore, the estimated effect of environmental green space is similar in magnitude to that of other well-known and studied contributors to symptomology for depression, anxiety and stress. For example, results indicate that the difference in depressive symptoms between an individual living in an environment with no tree canopy and an environment with 100% tree canopy is larger than the difference in symptoms associated with an individual who is uninsured compared to an individual with private insurance.
Salmond JA, Tadaki M, Vardoulakis S, Arbuthnott K, Coutts A, Demuzere M, Dirks KN, Heaviside C, Lim S, Macintyre H, McInnes RN, Wheeler BW. Health and climate related ecosystem services provided by street trees in the urban environment. Environ Health. 2016 Mar 8;15 Suppl 1(Suppl 1):36. doi: 10.1186/s12940-016-0103-6. PMID: 26961700; PMCID: PMC4895605.
Quote: We show that by ensuring that the specific aim of the intervention, the scale of the desired biophysical effect and an awareness of a range of impacts guide the choice of i) tree species, ii) location and iii) density of tree placement, street trees can be an important tool for urban planners and designers in developing resilient and resourceful cities in an era of climatic change.
Quote: The presence of street trees can also modify indoor temperatures by shading buildings and significantly reducing the risk of indoor overheating) [42]. This can benefit human health where economic resources are unavailable to cool buildings or could provide further co-benefits by reducing energy demands for building cooling [43]. One

study shows that tree shade can reduce wall temperatures by 9 °C and air temperatures by up to 1 °C [44].
Carbon sequestration
Buotte PC, Law BE, Ripple WJ, Berner LT. Carbon sequestration and biodiversity co-benefits of preserving forests in the western United States. Ecol Appl. 2020 Mar;30(2):e02039. doi: 10.1002/eap.2039. Epub 2019 Dec 27. PMID: 31802566; PMCID: PMC7078986.
Snehlata, Rajlaxmi A, Kumar M. Urban tree carbon density and CO2 equivalent of National Zoological Park, Delhi. Environ Monit Assess. 2021 Nov 25;193(12):841. doi: 10.1007/s10661-021-09619-5. PMID: 34822017.
Nair RK, Perks MP, Weatherall A, Baggs EM, Mencuccini M. Does canopy nitrogen uptake

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Fu D, Bu B, Wu J, Singh RP. Investigation on the carbon sequestration capacity of vegetation along a heavy traffic load expressway. J Environ Manage. 2019 Jul 1;241:549-557. doi: 10.1016/j.jenvman.2018.09.098. Epub 2018 Oct 11. PMID: 30318160.
Zhao C, Sander HA. Quantifying and Mapping the Supply of and Demand for Carbon Storage and Sequestration Service from Urban Trees. PLoS One. 2015 Aug 28;10(8):e0136392. doi: 10.1371/journal.pone.0136392. PMID: 26317530; PMCID: PMC4552758.
Mitigating climate change:
Arshad S, Ahmad M, Saboor A, Ibrahim FH, Mustafa MRU, Zafar M, Ashfaq S. Role of trees in climate change and their authentication through scanning electron microscopy. Microsc Res Tech. 2019 Feb;82(2):92-100. doi: 10.1002/jemt.23106. Epub 2018 Dec 3. PMID: 30511479.
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Chapman M, Walker WS, Cook-Patton SC, Ellis PW, Farina M, Griscom BW, Baccini A. Large climate mitigation potential from adding trees to agricultural lands. Glob Chang Biol. 2020 Aug;26(8):4357-4365. doi: 10.1111/gcb.15121. Epub 2020 Jun 2. PMID: 32301542..
Law BE, Hudiburg TW, Berner LT, Kent JJ, Buotte PC, Harmon ME. Land use strategies to mitigate climate change in carbon dense temperate forests. Proc Natl Acad Sci U S A. 2018 Apr 3;115(14):3663-3668. doi: 10.1073/pnas.1720064115. Epub 2018 Mar 19. PMID: 29555758; PMCID: PMC5889652.
Shahmohamadi P, Che-Ani AI, Etessam I, Maulud KNA, Tawil NM. 2011. Healthy Environment: The Need to Mitigate Urban Heat Island Effects on Human Health. Procedia Engineering. 20:61–70. doi:10.1016/j.proeng.2011.11.139.
Salmond JA, Tadaki M, Vardoulakis S, Arbuthnott K, Coutts A, Demuzere M, Dirks KN, Heaviside C, Lim S, Macintyre H, McInnes RN, Wheeler BW. Health and climate related ecosystem services provided by street trees in the urban environment. Environ Health. 2016 Mar 8;15 Suppl 1(Suppl 1):36. doi: 10.1186/s12940-016-0103-6. PMID: 26961700; PMCID: PMC4895605.
Energy conservation:
Akbari H. Shade trees reduce building energy use and CO2 emissions from power

plants. Environ Pollut. 2002;116 Suppl 1:S119-26. doi: 10.1016/s0269-7491(01)00264-0. PMID: 11833899.
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Noise reduction:
Ozkurt N, Hamamci SF, Sari D. 2015. Estimation of airport noise impacts on public health. A case study of ?zmir Adnan Menderes Airport. Transportation Research Part D: Transport and Environment. 36:152–159. doi:10.1016/j.trd.2015.02.002.
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Zhao N, Prieur JF, Liu Y, Kneeshaw D, Lapointe EM, Paquette A, Zinszer K, Dupras J, Villeneuve PJ, Rainham DG, Lavigne E, Chen H, van den Bosch M, Oiamo T, Smargiassi A. Tree characteristics and environmental noise in complex urban settings - A case study from Montreal, Canada. Environ Res. 2021 Nov;202:111887. doi: 10.1016/j.envres.2021.111887. Epub 2021 Aug 20. PMID: 34425113.
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Stormwater management:
Janke BD, Finlay JC, Hobbie SE. Trees and Streets as Drivers of Urban Stormwater Nutrient Pollution. Environ Sci Technol. 2017 Sep 5;51(17):9569-9579. doi: 10.1021/acs.est.7b02225. Epub 2017 Aug 11. PMID: 28756675.
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Bartens J, Day SD, Harris JR, Wynn TM, Dove JE. Transpiration and root development of urban trees in structural soil stormwater reservoirs. Environ Manage. 2009 Oct;44(4):646-57. doi: 10.1007/s00267-009-9366-9. Epub 2009 Aug 26. PMID: 19707704.
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Burley BA. Green infrastructure and violence: Do new street trees mitigate violent crime? Health Place. 2018 Nov;54:43-49. doi: 10.1016/j.healthplace.2018.08.015. Epub 2018 Sep 19. PMID: 30240934.
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Tan PY, Wong NH, Tan CL, Jusuf SK, Schmiele K, Chiam ZQ. Transpiration and cooling potential of tropical urban trees from different native habitats. Sci Total Environ. 2020 Feb 25;705:135764. doi: 10.1016/j.scitotenv.2019.135764. Epub 2019 Nov 27. PMID: 31806315.
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Bosch M, Locatelli M, Hamel P, Remme RP, Jaligot R, Chenal J, Joost S. Evaluating urban greening scenarios for urban heat mitigation: a spatially explicit approach. R Soc Open Sci. 2021 Dec 8;8(12):202174. doi: 10.1098/rsos.202174. PMID: 34909207; PMCID: PMC8652265.
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Ozdemir H. Mitigation impact of roadside trees on fine particle pollution. Sci Total Environ. 2019 Apr 1;659:1176-1185. doi: 10.1016/j.scitotenv.2018.12.262. Epub 2018 Dec 18. PMID: 31096331.
Pace R, Guidolotti G, Baldacchini C, Pallozzi E, Grote R, Nowak DJ, Calfapietra C. Comparing i-Tree Eco Estimates of Particulate Matter Deposition with Leaf and Canopy Measurements in an Urban Mediterranean Holm Oak Forest. Environ Sci Technol. 2021 May 18;55(10):6613-6622. doi: 10.1021/acs.est.0c07679. Epub 2021 Apr 28. PMID: 33908766.
Quote: Trees and urban forests remove particulate matter (PM) from the air through the deposition of particles on the leaf surface, thus helping to improve air quality and reduce respiratory problems in urban areas.
Letter, C., Jäger, G. Simulating the potential of trees to reduce particulate matter pollution in urban areas throughout the year. Environ Dev Sustain 22, 4311–4321 (2020). https://doi.org/10.1007/s10668-019-00385-6
Quote: Particulate matter pollution, especially in an urban environment, is a health risk that affects many people, and the current trend shows that these problems will increase in the near future…In this study, we explore the idea of using trees in an urban area to reduce particulate matter concentration. Since the absorption of fine dust by trees is a complex problem, influenced by many factors, we use a computer model to simulate the

effect of various trees throughout the year to find the optimal candidate. We find that coniferous trees have a significant advantage, since they also absorb during the winter months, where the air quality is worse. We also conclude that a large enough area of a well-suited tree species is a feasible way to increase air quality and in some cases even to reduce the particulate matter pollution to an acceptable level.
Economic/ Inequity:
Healy M, Rogan J, Roman LA, Nix S, Martin DG, Geron N. Historical Urban Tree Canopy Cover Change in Two Post-Industrial Cities. Environ Manage. 2022 Jul;70(1):16-34. doi: 10.1007/s00267-022-01614-x. Epub 2022 Mar 8. PMID: 35258643.
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Tree Equity near SeaTac International Airport
Selected comparisons for those living close to SeaTac
Airport and all King County residents
1. American Forests: Trees are a Pathway to Creating Social Equity https://www.americanforests.org/what-drives-us/social-equity/
2. Report to the Legislature in Response to Washington State HOUSE BILL 1109, Public Health Seattle King County, 12/2020 https://tinyurl.com/mwk9p7vn
3. Port of Seattle Equity Index Map https://tinyurl.com/5n6pw23u accessed 3/10/22
4. King County 30 year forest plan, 2/21. page 17 https://tinyurl.com/ydbw74u5
Trees are a Pathway to Creating Social Equity1
“a map of tree cover is too often a map of income and race — especially in cities. That’s

because trees are often sparse in socioeconomically disadvantaged urban neighborhoods and some neighborhoods of color. The inequitable distribution of trees exacerbates social inequities."

Trees Protect Health and Lives Near SeaTac International Airport

Public Health Seattle-King County recommends increasing trees and green space near the airport to protect residents from airport-generated pollution that shortens lives and disproportionately impacts health. 2 But the Port of Seattle proposes to build on dozens of acres of tree-covered land in this community, including 31 acres inside N. SeaTac Park.

King County Residents People living within two miles of the airport	EQUITY RATING
How Equitable is this neighborhood for health and income?3	MODERATE EQUITY VERY LOW EQUITY
Tree Canopy4 versus Tree Canopy Cover	Poverty rate
Poverty rate3	Normandy Park: 46% 6%
	Bellevue 37% 7%
	SeaTac, home of the Burien 30% 11%
	Des Moines: 29% 8%
airport, ranks 40th out	Seattle 28% 10%
of 45 King County	Tukwila 24% 12%
cities for tree canopy4	SeaTac 22% 12%
	White Center 21% 17%
Median Household income3	$106,000 $76,000
Households below poverty3	7.6% 11%
Life Expectancy2	Years of Life Distance from Airport
82.9	More than 10 miles
79.4	Less than 5 miles
81.2	Less than 10 miles
Race and Ethnicity2	Years of Life Distance from Airport
King County is 64% White, 10% Hispanic, 6% African American, 1% Native Islander3	Within 2 miles of the airport: 50% White, 18% Asian, 18% Hispanic, 14% African American, 4%Pacific Islander3
	77.9 Less than 1 mile
	White, 15% Asian, 1%Pacific