

Federal Way, Washington Mayor's Quiet and Healthy Skies Task Force Report

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I. INTRODUCTION AND ACKNOWLEDGMENTS

In March 2017, City of Federal Way Mayor Jim Ferrell appointed a group of local residents to his Quiet and Healthy Skies Task Force. They were asked to provide the Mayor and City Council with some guidance on the complicated and intersecting issues, (including the environment, safety, noise, and health), surrounding increased air travel, the proposed expansion of Sea-Tac International Airport, and other changes that are occurring or are about to occur with respect to our air traffic system. Mayor Ferrell asked the Task Force to help him and the Council determine what is happening, how our community is feeling, what other municipalities in the area are doing, and finally what the City of Federal Way should do, particularly in interactions with Port of Seattle (POS) and Federal Aviation Administration (FAA) officials.

The Task Force met monthly throughout 2017. In addition, Task Force members have put in dozens or even hundreds of hours on this issue outside of formal meetings in both 2017 and 2018.

This report contains the findings, conclusions, and recommendations of the Task Force after the last year-and-a-half engaged in this important issue.

The Task Force would like to acknowledge the contributions of former Task Force members Robert Blix, Lyn Coring, Michael Kun, Keith Livingston, Ray Miryekta, Doug Painchaud, John Resing, Melinda Robinson, and Kristin Yodock, Ph.D. They have not endorsed or approved this report.

II. EXECUTIVE SUMMARY

The substantive portions of this report are contained in **Sections III** through **VII**.

Section III examines noise impacts from Sea-Tac International Airport (Sea-Tac) flights on Federal Way, as well as potential abatements and mitigations. This examination includes:

- **Subsection a:** History of Sea-Tac's third runway from the inception of that project in the 1990s to the third runway's opening in 2008 and:
 - Resulting **six-fold increase** in "Northflow" landings (i.e. those that go over Federal Way) between 2011 and 2017
 - Lack of any mitigation for increased noise being paid for Federal Way residents as recommended in a 1997 state-funded study
- **Subsection b:** Increased aircraft operations (takeoffs or landings) from **317,186 in 2013** to **412,170 in 2016**
- **Subsection c:** Illustration of how Federal Way is particularly impacted
- **Subsection d:** Data concerning increasing complaints about aircraft noise from Federal Way residents

- **Subsection e:** Projections concerning continued growth in air cargo, with the Port of Seattle having a stated goal of **tripling air cargo** and marketing its **24-hour, no-curfew airport access**
- **Subsection f:** Projections concerning airport expansion, with the Port of Seattle looking to **double its international flights**
- **Subsection g:** Ways that noise impacts in Federal Way could be abated, including:
 - **Sub-subsection i:** Changing glide slopes:
 - For Runway 34R, approaches to which go over Federal Way, from the current 2.75 degrees to the international standard three-degree glide path.
 - For all runways, potentially beyond the standard three-degree glide path.
 - **Sub-subsection ii:** Changing flight tracks so that they no go out of their way over residential areas to the south of the airport, such as in Federal Way
 - **Sub-subsection iii:** Changing flight schedules to minimize traffic between 10:00 PM to 6:00 AM or at least the Port's ceasing to market the 24-hour availability of Sea-Tac to large and noisy cargo operations
- **Subsection h:** An analysis of how Federal Way residents are disproportionately harmed by airport activity, including:
 - Available data concerning the economic benefits of Sea-Tac to Federal Way and other nearby communities
 - An acknowledgment of the current *lack* of good data concerning the harms suffered by Federal Way residents due to airport activity
 - A re-examination of the 1997 state-funded study, which concluded that
 - Federal Way would require mitigation for sound abatement insulation and avigation easements in the amount of \$148,000,000 (\$232,000,000 in 2018 dollars), which was never paid
 - Communities closer to the airport (such as Federal Way) experience a decline in property values
 - An acknowledgment that Federal Way residents are *excluded* from Sea-Tac's mitigation zone, within which residents of neighborhoods to the north have received **\$400 million in noise insulation and other mitigation benefits**
 - Acknowledgments that
 - An inordinate amount of air traffic is brought over Federal Way
 - Flight paths over Federal Way go over more people than necessary and are often on a lower than standard glide path
- **Subsection i:** A discussion of the DNL metric, which the FAA uses to determine noise exposure levels, including:
 - **Sub-subsection i:** Meaning of DNL

- **Sub-subsection ii:** Explanation why DNL as a measure of noise annoyance to people is fundamentally flawed, despite the FAA's insistence that it is a valid metric
- **Sub-subsection iii:** Discussion of noise as a health issue, in addition to annoyance, and the failure of the DNL metric to take that into consideration
- **Subsection j:** A discussion of whether the City of Federal Way should invest in portable noise monitors:
 - They would confirm the real sound levels at different locations and thus give better insight as to the real impacts within neighborhoods.
 - But current FAA rules and regulations do not allow readings from noise monitors to be used to determine the noise contours. The regulations only allow the FAA's qualified tool that uses modeling.
- **Subsection k:** Recommendations, including:
 - Support for proposed legislation sponsored by Congressman Adam Smith that would expand the definition of aviation-impacted communities and require the FAA to work with those communities on their concerns with aircraft impacts
 - Support for efforts by Congressman Smith to ensure that the FAA quickly completes its evaluation of the DNL and alternative metrics
 - Engagement with newly-authorized FAA community engagement staff and insistence that alternatives to DNL be examined
 - Lobbying to change glide slopes and flight paths
 - Making the case for the third runway only to be used for inclement weather
 - Purchasing a portable noise monitor

Section IVa examines the dramatic increase in both cargo and passenger flights at Sea-Tac, including a 10.2 percent increase in cargo tonnage in 2016, another 16.34 percent increase in 2017, and (to June 27, 2018) another 5.1 percent increase in 2018. These dramatic increases have led to increasing complaints, particularly with respect to certain middle-of-the-night international cargo flights. While Port staff has indicated that the airport director has asked the airline if it can voluntarily look at an alternative to the middle-of-the-night flight to China that disturbs so many people, it remains a concern that the Port has plans to **triple air cargo** and that it **markets its great availability for cargo, including its 24-hour, no curfew operation.**

Section IVb analyzes the legal history of efforts by local communities and airport proprietors to place limits on aircraft, while **Section IVc** concludes that current law does not allow such restrictions unless agreed to by all aircraft operators, which is unlikely, or approved by the FAA after an expensive and time-consuming "Part 161" submission, which would likely be futile since such a submission has been approved only one time since 1991 at a small airport in Florida. Thus, recommendations in **Section IVd**, while in the long-term include the possibility of pressure on the Port to go through a Part 161 submission if other efforts prove futile, in the short-term involve:

- Support for the Port’s efforts and pressure on the Port to intensify those efforts to get voluntary compliance from the most egregious offenders with respect to cargo flights during late-night hours
- Pressure on the Port to see if some cargo flights could be moved to other airports if feasible
- Pressure on the Port to cease affirmatively marketing its 24-hour availability for cargo aircraft

Section V covers other health impacts of increased air traffic, including respiratory issues from airplane pollution in general in **Subsection a** and from nitrogen oxides in **Subsection b**. **Subsection c** covers the emerging area of ultra-fine particles (UFPs), their relationship to air traffic, and their effects on health. This subsection discusses a currently ongoing University of Washington study on the level of UFPs in areas impacted by Sea-Tac. It also goes over a similar study in another jurisdiction that found a relationship between UFPs and aircraft emissions. Finally, this subsection goes over studies that have shown health impacts of UFPs and discusses the lack of any official environmental standards with respect to UFPs. **Subsection d** goes over recommendations, including:

- Support for state legislation funding a second phase to the University of Washington study that would study the health effects of UFPs
- Support for efforts by Congressman Adam Smith to get a federal bill passed that would mandate a federal study on the health effects of UFPs
- Encouragement for Port of Seattle officials to continue supporting additional research into the relationship between UFPs and aircraft and into the health effects of UFPs
- Ensuring that scoping on the Sustainable Airport Master Plan (SAMP) includes an examination of UFPs, as well as other emissions/pollution, general health, and quality of life issues.

Section VI covers the environmental review process of the Sustainable Airport Master Plan (SAMP).

Subsection VIa explains that the SAMP identifies additional airport facilities and airspace needed to accommodate its forecast of “unconstrained” passenger and air cargo demand at Sea-Tac over the next twenty years. The final SAMP projects an increase in annual passengers handled from **46.9 million last year, to 56 million in 2027, and further increasing to 66 million by 2034**. Federal Way residents have long expressed quality-of-life concerns about Sea-Tac’s overflight impacts. These concerns have been aggravated by the **greater than one-third increase in aircraft overflights during just the past three years**, by the constant use of the third runway that the Port promised was for use only during inclement weather, and by the likelihood of even greater noise and health impacts as a result of the SAMP projections. Thus, the City of Federal Way must use all means at its disposal to hold the Port to a complete, objective and thorough environmental review of the SAMP, meaning that the Port should be required to include full and meaningful mitigation of noise and health impacts on Federal Way residents from any projects that follow approval of the SAMP.

Subsection VIb explains the procedures involved in the Washington State Environmental Policy Act (SEPA) and the National Environmental Policy Act (NEPA). These laws require analysis of a project's potential impacts on human health and the environment, as well as proposed actions or measures to mitigate those impacts. The NEPA and SEPA processes can be integrated. The Port serves as lead agency for SEPA, while the FAA serves as lead agency for NEPA.

Subsection VIc goes over the history of Sea-Tac's third runway project. Communities around the airport were heavily opposed. Nevertheless, the Puget Sound Regional Council (PSRC) concluded that future airport capacity needs would best be met by going forward with the third runway, adding passenger facilities at Paine Field, and constructing a new "supplemental airport" in Pierce or Thurston County. The latter effort ended without success. Though a State commission found that the third runway alone would not be adequate to meet future need, it was unable to find feasible alternatives. Despite receiving extensive public comments from local community groups and the Airport Communities Coalition (ACC), which included the City of Federal Way, the Port and FAA concluded that all of its short- and long-term impacts could be fully mitigated through sensitive design and wetlands mitigation. Despite a PSRC-mandated expert panel concluding that the Port "had not shown a [sufficient] reduction in real, on-the-ground noise impacts," the PSRC decided noise impacts were sufficiently mitigated and officially added the third runway project to the federally-mandated Regional Transportation Plan (which qualified it for future federal funding) in July 1996. The next month, the Port authorized final design, permitting, and property acquisition for an 8,500-foot third runway to be located 1,700 feet westerly of the closest of the two existing runways.

Subsection VI d covers the City of Federal Way's involvement in opposing the third runway. Several City Councilmembers submitted written and oral testimony in the process, commenting that there was "not one word" regarding the adverse impacts of the proposed third runway on Federal Way residents, including additional noise, health impacts, increased traffic congestion, and decline in property values. After approval of the project, the ACC filed suit, resulting in a supplemental process with additional public comments. Ultimately, however, little was accomplished other than additional noise and insulation mitigation for schools in the Highline School District. Most jurisdictions ultimately withdrew from the lawsuit, though the City of Federal Way persisted until dismissal by the Court and ultimate approval of the project. The City of Federal Way spent approximately \$100,000 in the failed lawsuit.

Subsection VI e goes over lessons learned from the unsuccessful opposition to the third runway, concluding that the City of Federal Way must develop a proactive, non-traditional strategy for successfully engaging the Port and FAA in their decision-making processes in the SAMP. Analyzing the official record from the battle over the third runway provides useful insights for predicting noise, health and other environmental impacts on Federal Way residents that may not be fully and fairly analyzed as related to Federal Way. In the end, though its impacts were analyzed assuming use during inclement weather only, the third runway was environmentally "cleared" without operational restriction. Given increasing passenger demand in the ensuing years and the lack of identified mitigation for the additional noise and health effects from unfettered third runway usage, the City of Federal Way and its residents have learned a painful lesson from this process.

Subsection VI f goes over the proposed SAMP itself and potential problems already noticeable such as:

- An apparently underestimated growth forecast that would result in under-analyzed environmental impacts
- A statement that Sea-Tac currently meets federal, state and regional air quality standards for “fine” particulates, despite aircraft engines currently pumping 13 tons of such particulates into the air each year
- Failure to mention the currently underway state-funded University of Washington study on Ultra-Fine Particulates (UFPs)
- Reference only to noise impact mitigation defined by the DNL metric
- Failure to analyze twenty specific airport expansion and redevelopment improvement projects contained in the SAMP’s long-term vision (to 2034) that are in *addition* to the near-term projects (to 2027), potentially violating SEPA’s “phased review” prohibition.

Subsection VI g contains specific policy recommendations, including:

- Closely monitoring, and advocating for Federal Way’s interests, in connection with the activities and recommendations of the Port Commission’s newly formed Regional Airport Capacity/SAMP Committee, including encouragement of and support for the current Port Commission’s prospective efforts to explore alternative airport locations in the region and state.
- Supporting, closely monitoring and advocating for Federal Way’s interests during and after the Puget Sound Regional Council’s (PSRC’s) Central Puget Sound Regional Aviation Baseline Study, which will analyze the potential capacity of regional airspace and airports in King, Kitsap, Pierce, and Snohomish counties to meet future air travel and cargo demand generated by those counties.
- Supporting the siting of a new regional airport once the latter study is completed.
- Actively supporting State Rep. Mike Pellicciotti’s plan to reintroduce an aircraft noise abatement bill amending RCW 53.54.020 and .030 so that the geographic area within which the Port is authorized to operate an airport noise abatement program will include Federal Way.
- Engaging the technical and legal expertise needed for analysis and response to the forthcoming SAMP environmental review process, either by the City of Federal Way’s independent efforts or possibly by joining the other four airport-impacted cities that plan to collectively engage, if their engaged consultants have the proper technical and legal expertise.
- Supporting the State of Washington study of current Sea-Tac Airport impacts, including by contributing a share of the funding.

- Considering asking the Washington Department of Transportation or other appropriate state agency to request designation as the SEPA lead agency for preparation of the SAMP EIS.
- Requesting the Port to underwrite the technical support needed by airport-impacted Federal Way community-based organizations to conduct their own review of and comment on the SAMP draft EIS.
- Forming an Aviation Impacts Committee of the City Council to oversee implementation of the City's various policy actions and initiatives related to Sea-Tac existing operations and future growth, to keep the full City Council apprised of the status of those efforts, to serve as a "sounding board" for concerns of residents in overflight-impacted neighborhoods, and to keep those residents and the entire community informed of the City's various efforts.

Finally, **Section VIa** covers military aircraft, including a meeting held at McChord Air Force Base with the leadership of the 62nd Airlift Wing at which Mayor Ferrell and members of the Task Force explained that exercises with C-17 military aircraft had, at times, impacted residential neighborhoods, including Marines Hills, Browns Point, and Twin Lakes. The wing commander emphasized that the Air Force wants to be good partners with the local community and that she was happy to engage in conversations like this. However, she said that there are constraints on the air space, and the military aircraft have to land where they are aligned. She did say that Air Force traffic has decreased and will continue to decrease. The wing vice commander said that we would have to talk to the controllers at Sea-Tac who direct the military aircraft. Roel A. van der Lugt, Director of Military Affairs & Senior Policy Advisor for United States Congressman Dennis Heck (WA-10), who was also present for this meeting, recommended contacting an FAA controller exclusively assigned to deal with military aircraft at Seattle TRACON (Terminal Radar Approach Control Facilities) at the northwest side of the airport. Following the meeting, a community relations staff person Joint Base Lewis-McChord (JBLM) provided a phone number, email, and website to facilitate reporting about issues with military aircraft noise and low flight complaints. **Section VIb** contains a final set of recommendations, including:

- Publicizing the provided contact information for complaints with respect to military aircraft.
- Following up on the recommendation to contact an FAA controller exclusively assigned to deal with military aircraft at Seattle TRACON (Terminal Radar Approach Control Facilities) to further investigate why military planes are being directed over residential neighborhoods in or near Federal Way.
- Seeking regular meetings with 62nd Airlift Wing Command leadership to communicate issues of concern raised by residents.

III. SEA-TAC INTERNATIONAL AIRPORT FLIGHT OPERATION NOISE IMPACTS ON FEDERAL WAY AND POTENTIAL ABATEMENTS AND MITIGATIONS

a. Recent Changes in Aircraft Noise in Federal Way: Third Runway

The Sea-Tac International Airport (Sea-Tac) third runway opened on November 20, 2008. Its usage has gone from 10,079 "Northflow" landings in 2011 to 57,287 such landings in 2017¹, a nearly six fold increase in six years. This change puts many planes directly over homes in the Marine Hills neighborhood of Federal Way, where there were none ten years ago.

This frustration was expected, however, based upon a state-funded study done in 1997 on the proposed third runway's impacts on Federal Way and other communities. The study report specifically named the Marine Hills neighborhood of Federal Way as needing mitigation for noise and vibration in the form of "Sound Insulation and Avigation Easements" in the amount of \$19.8 million.² Considering the 525 homes in Marine Hills, that amounts to \$37,714 per home (\$59,212 in 2018 dollars³).

Marine Hills is just one of eight Federal Way neighborhoods identified in the 1997 report as needing mitigation for noise and/or vibration.⁴ Other Federal Way neighborhoods identified as needing such mitigation were Easter Lake (\$27.3 million), Star Lake (\$19.5 million), Steel Lake (\$13.0 million), First Avenue (\$20.5 million), Kitts Corner (\$11.2 million), Wildwood (\$20.7 million), and City Center (\$16.1 million), for a total of \$148.1 million in all affected Federal Way neighborhoods⁵ (\$232 million in 2018 dollars⁶).

The Port, however, has never paid any of these mitigation costs.⁷

¹ "Runway Use Statistics" (Port of Seattle report run on June 4, 2018 and provided to City of Federal Way Mayor's Office)

² "Sea-Tac International Airport Impact Mitigation Study Initial Assessment and Recommendations" (Prepared in February 1997 under a grant from the State of Washington for City of Burien, City of Des Moines, City of Federal Way, City of Normandy Park, City of Tukwila, Highline School District, and Highline Community Hospital by Hellmuth, Obata & Kassebaum, Inc. and Raytheon Infrastructure Services, Inc.) at Pages 7-9 to 7-10 (Table 7.05 "Neighborhoods Identified for Overflight Sound Insulation and Avigation Easements"); <http://www.seatacwa.gov/Home/ShowDocument?id=13083>

³ Converted time dollars from <http://www.in2013dollars.com/1997-dollars-in-2018?amount=37714>

⁴ "Sea-Tac International Airport Impact Mitigation Study Initial Assessment and Recommendations" at Page 7-6 (Table 7.03 "Neighborhoods Identified for LDN Sound Insulation and Avigation Easements") and Pages 7-9 to 7-10 (Table 7.05 "Neighborhoods Identified for Overflight Sound Insulation and Avigation Easements")

⁵ Id.

⁶ Converted time dollars from <http://www.in2013dollars.com/1997-dollars-in-2018?amount=148100000>

⁷ In a meeting held in Seatac City Hall on July 16, 2018 a Port staffer stated that no mitigation resulted from the 1997 study because it was the Port's position that the study's methodology did not hold up.

The 1997 study report on the third runway also stated, with regards to the Sound Exposure Level for single noise events (SEL), that “[t]he EIS [Environmental Impact Statement] noise study did not have an extensive evaluation of sound exposure level (SEL)” and that “[t]his information should be developed by the Port of Seattle prior to Master Plan Update implementation and should include the SEL contours relationship to health problems, in particular, sleep and speech interference.”⁸ The report went on to explain that

[t]he EIS for the Flight Plan Project (Puget Sound Regional Council and Port of Seattle, October 1992), included noise assessment information associated with the 55 LDN [DNL] level and a SEL of 80 dBA. This SEL was selected because it is often used to supplement the LDN [DNL] analysis and 80 dBA corresponds to the level at which sleep disturbance and speech interference start to occur. Similar information should be developed prior to Master Plan Update implementation by the Port of Seattle.⁹

Finally, the 1997 study report recommended with regards to air quality that “additional studies [should be conducted] regarding long-term exposure to air toxics associated with Airport operations.”¹⁰

b. Recent Changes in Aircraft Noise in Federal Way: Increased Operations

Aircraft operations (takeoffs and landings) have increased substantially in recent years, as follows:¹¹

Aircraft Operations

- **2016: 412,170 operations – 8% increase**
- **2015: 381,408 operations – 12% increase**
- **2014: 340,478 operations – 7% increase**
- **2013: 317,186 operations**

**The difference between 2013 and 2016 was 94,984 operations.
That’s 260 more aircraft going over homes per day.**

⁸ “Sea-Tac International Airport Impact Mitigation Study Initial Assessment and Recommendations” at Page 7-12.

⁹ Id.

¹⁰ Id. at Page ES-8

The Port's "Long Range Plan" 2018-2022 has the goal of making SeaTac airport the west coast "Gateway of Choice" for international travel.¹²

The International Arrivals Facility (IAF) now under construction will increase international gates by 67% "from 12 to 20."¹³ It will "[i]ncrease passenger capacity by more than double to 2,600 passengers per hour" and will "[i]ncorporate enhanced technologies for faster passport check clearance."¹⁴ The new facility will "[r]educ[e] minimum passenger connection time from 90 to 75 minutes"¹⁵ (thereby, as the Port's marketing material *fails* to state, reducing opportunity for economic impact). This facility is projected to open in the second quarter of 2020.¹⁶

In addition to the IAF, the North Satellite renovation will also be "adding eight new gates with a 240-foot extension of the building to the west, add[ing] an upper level mezzanine, more than doubl[ing] the existing dining and retail square footage, and introduce[ing] a rooftop Alaska Airlines lounge with views of the Olympic Mountains."¹⁷

c. Most Impacted Areas

Neighborhoods on the north side of Federal Way that are aligned with the runways are most impacted. But due to the flight paths, most of the city is impacted to varying degrees. The following diagram shows flight tracks in the area.

¹¹ "Noise Programs & NextGen Briefing" (Port of Seattle Power Point Presentation at May 24, 2017 meeting of Highline Forum held in Sea-Tac International Airport Conference Center) at Slide 4.

¹² "Port of Seattle 2018-2022 Long Range Plan" Objective 6 (slides 7, 9, and 15); https://www.portseattle.org/sites/default/files/2018-05/POS_2017_LRP_Web_Commission_4-26-18.pdf

¹³ <https://www.portseattle.org/projects/international-arrivals-facility>

¹⁴ Id.

¹⁵ Id.

¹⁶ "New International Arrivals Facility" (December 2017 Port of Seattle Sea-Tac International Airport Brochure) at Page 2; https://www.portseattle.org/sites/default/files/2018-07/POS_2018-13_IAF_1Pager.pdf

¹⁷ "Port Breaks Ground on North Satellite Modernization Project" (February 3, 2017 Port of Seattle press release); <https://www.portseattle.org/news/port-breaks-ground-north-satellite-modernization-project>



d. Increasing Federal Way Noise Complaints

All of these factors have led to increasing complaints about noise from Federal Way and nearby residents, as outlined in the table below:¹⁸

¹⁸ Compiled from reports provided by the Port to the City of Federal Way Mayor's Office on June 2, 2017

| Zip Code | City | Complaints January 1, 2014 through June 30, 2015 | Complaints July 1, 2015 through May 26, 2017 | Total complaints January 1, 2014 through May 26, 2017 |
|--------------------|--------------|---------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------|
| 98001 | Algona | 6 (0.33/month) | 0 (0/month) | 6 (0.15/month) |
| 98001 | Auburn | 6 (0.33/month) | 10 (0.44/month) | 16 (0.39/month) |
| 98003 | Federal Way | 36 (2.00/month) | 174 (7.62/month) | 210 (5.14/month) |
| 98023 | Federal Way | 91 (5.06/month) | 120 (5.25/month) | 211 (5.17/month) |
| No zip code listed | Federal Way | 1 (0.06/month) | 3 (0.13/month) | 4 (0.10/month) |
| TOTAL | TOTAL | 140 (7.78/month) | 307 (13.44/month) | 447 (10.95/month) |

e. Will it get worse--Air Freight?

In 2017, SeaTac experienced a 16-percent growth in metric tonnage of air cargo, a 20-percent increase in domestic freight service, and an 8.5-percent increase in international cargo.¹⁹ And the Port’s stated goal is to “[t]riple air cargo volume to 750,000 metric tons.”²⁰ In their cargo marketing publications, the Port emphasizes Sea-Tac’s “24-hour operation with no curfews.”²¹ Their website section concerning “Cargo Facilities and Region” also states Sea-Tac has “[m]ore than 200 acres of land for airport-related logistics park development.”^{22 23}

f. Will it get worse--Airport Expansion?

Port staff has stated that the planned growth of Sea-Tac will include an increase in the number of gates by about 50%.²⁴ And as mentioned earlier, The Port’s “Long Range Plan” 2018-2022 has the goal of making SeaTac airport the west coast “Gateway of Choice” for international travel.²⁵ The Port also seeks to “double the number of international flights and destinations.”²⁶

¹⁹ “Sustainable Airport Master Plan – Responding to Regional Growth” (Port of Seattle Power Point presentation to Puget Sound Regional Council (PSRC) Executive Board Meeting February 22, 2018) at Slide 3.

²⁰ “Port of Seattle 2018-2022 Long Range Plan” Objective 3 (slides 9 and 12). At a May 30, 2018 meeting on the Sustainable Airport Master Plan (SAMP) held at Burien Community Center, Port officials said that this tripling of cargo was a 20-year goal/target of the Port’s “Century Agenda”, not a forecast. It was an “aspirational goal” set by the Port commissioners.

²¹ “Air Cargo at the Port of Seattle” (Marketing Piece provided by Port staff on July 9, 2017)

²² “Cargo Facilities and Region” (Section “Our Cargo Facilities”); <https://www.portseattle.org/page/cargo-facilities-and-region>

²³ The expansion of cargo flights and the ability to regulate them by, e.g. a curfew, is discussed more fully in **Section IV** below.

²⁴ Port of Seattle presentation to Federal Way Mayor’s Quiet and Healthy Skies Task Force (Held September 14, 2017 in Federal Way City Hall)

²⁵ “Port of Seattle 2018-2022 Long Range Plan” Objective 6 (pages 7, 9, and 15)

g. Can it be abated?

Efficiencies and mitigations could be gained by raising the glide slope path of arriving aircraft on the longest runway to the much safer industry standard. Changing the flight patterns to modern designs (focused on most efficient and safest paths) would also reduce the impact to Federal Way residents. Having aircraft traveling to and from Asia and Alaska fly over the Puget Sound would nearly eliminate the impact of those flights to Federal Way residents, while reducing their flight time, emissions, and fuel burn. Finally, flight schedules offer another means of abatement.

i. Glide Slope

All runways on the north side (i.e. south flow approaches to Sea-Tac, those *not* over Federal Way) use the international standard three-degree glide path. Three degrees is the optimum profile descent to minimize fuel burn and emissions.

However, the approaches to the longest runway (34R) that go over Federal Way are on a lower 2.75-degree glide path. A shallower glide path means not only that the aircraft is lower and closer to the homes, schools, and businesses below, but it is also no longer in the optimized profile descent and may be forced to increase power and emissions to stay on its shallow path. This has a compounding effect on those below. Sound disperses similar to a rock dropped in a puddle, so moving the source closer increases the concentration and amount received, and then it is further exasperated by the increased throttle.

At the north end of Federal Way is Nautilus School. The .25-degree glide path difference changes the experienced noise level on the ground at that location at a level equivalent to the change were the school raised from one to thirteen floors.

Changing the glide slope will also make the approach safer. The wake turbulence risk analysis by the Federal Aviation Administration (FAA) on Runways 34C and 34R (the two parallel runways with approaches that fly over Federal Way) was conducted using a three-degree glide slope for both runways, and the procedure is already authorized at three degrees.²⁷ By publishing the procedures using the lower 2.75-degree glide slope, planes are lower and at higher risk of hitting a crane or obstacle. Therefore, aircraft landing on Runway 34R are lower and louder, burn more fuel, expel more pollution, and are less safe than if they were flying on the authorized three-degree glide path.

Raising the glide slope beyond three degrees would further reduce the noise impact. Frankfurt Airport has tested to 4.5 degrees²⁸ solely for noise mitigation prior to settling on 3.2

²⁶ Id. at Slides 7, 9, and 16.

²⁷ See FAA Order JO 7110.308C “Simultaneous Dependent Approaches to Closely Spaced Parallel Runways” (January 26, 2018) at Page A1 (Appendix A, Note 3)

degrees.²⁹ Sea-Tac should investigate raising all glide slopes above three degrees. San Diego's approaches to Runway 27 are at 3.5 degrees. While this glide slope was set for obstacle reasons, it shows that it is possible routinely to have a steeper glide slope.

ii. Flight Tracks

The Port claims that “[p]rocedures are designed to minimize noise impact.”³⁰ But the flight tracks show exactly the opposite with respect to Federal Way and other impacted communities south of the airport. The tracks headed to and from the northwest go out of their way over the residential areas, when flying over the Puget Sound would be more efficient with a greatly reduced noise impact.³¹

Using well-designed Required Navigation Performance (RNP),³² approach flight paths could take advantage of the unpopulated areas (Puget Sound) to reduce track miles, fuel burned, emissions, and time spent for airline carriers flying from Asia and Alaska. FAA criteria state that the final turn should be completed by 1000-feet above the threshold. On a standard three-degree glide path, that is 3.1 nautical miles (nm) from the threshold. However, exceptions to these criteria are granted. For example, at Reagan National Airport, the RNP path completes its final turn at 0.6 nm from the airport. At Sea-Tac, the ideal rollout for the fewest number of homes to be impacted is 2.2 nm, which is *four times further than the Reagan National RNP to runway 19*.

RNP approaches from the south and from the east could follow I-5 straight toward the airport over the South 272nd Street Park and Ride and then the uninhabited former dump north of it. I-5 is ten lanes of concrete with shoulders, a median, and ditches on both sides and has significant ambient noise.

But even using *standard* criteria, a 3.1nm Final Roll Out Point (FROP) would allow an approach to Runway 34L that avoids flying over all residents of Federal Way by flights coming from Alaska and Asia. (A 3.1 nm FROP is depicted in the two images below, the second being a zoomed-in view of the first.) Today, most approaches flying over Federal Way have a FROP of more than six nm.

²⁸ “Tests at Frankfurt airport of steeper approach path at 4.5 degrees –details awaited” (October 11, 2013); <http://www.airportwatch.org.uk/2013/10/tests-at-frankfurt-airport-of-steeper-approach-path-at-4-5-degrees-details-awaited/>

²⁹ “Frankfurt Airport pioneers active noise abatement” (www.internationalairportreview.com Volume 19, Issue 4, 2015); https://ec.europa.eu/transport/sites/transport/files/modes/air/ses/ses-award/projects/doc/internationalairportreview_2015_q4_frankfurtgbas.pdf

³⁰ “Noise Programs & NextGen Briefing” at Slide 10

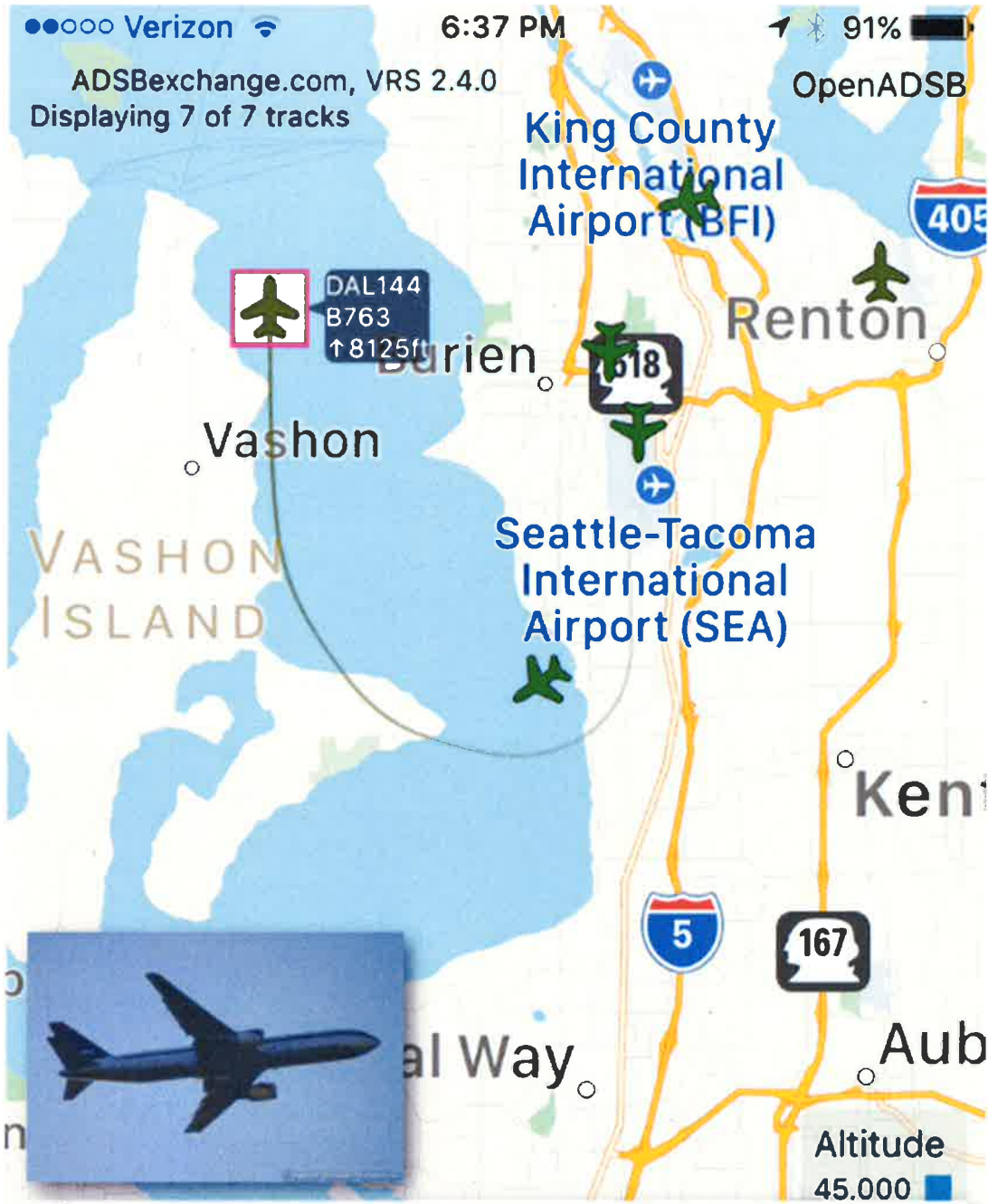
³¹ *Id.* at Slide 12


³² RNP is a satellite-based navigation system with additional monitoring to confirm that the aircraft stays in a defined space. See “Satellite Navigation – NAS Implementation” at the FAA website (Updated December 23, 2016); https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gnss/nas/procedures/rnav_rnp/





Aircraft departing for Alaska and Asia should also be taking advantage of the unpopulated areas instead of flying over the most populated. Below are some screen shots showing flight tracks of a departing Delta Airlines 767 and an Alaska Airlines 737. These paths are the rare exception, showing what is possible when pilots request it and/or Air Traffic Control (ATC) vectors them. Shorter routes save time and fuel. If the depicted flights had been vectored directly down the channel, Vashon Island could even have been avoided.



 **DAL144, N394DL**

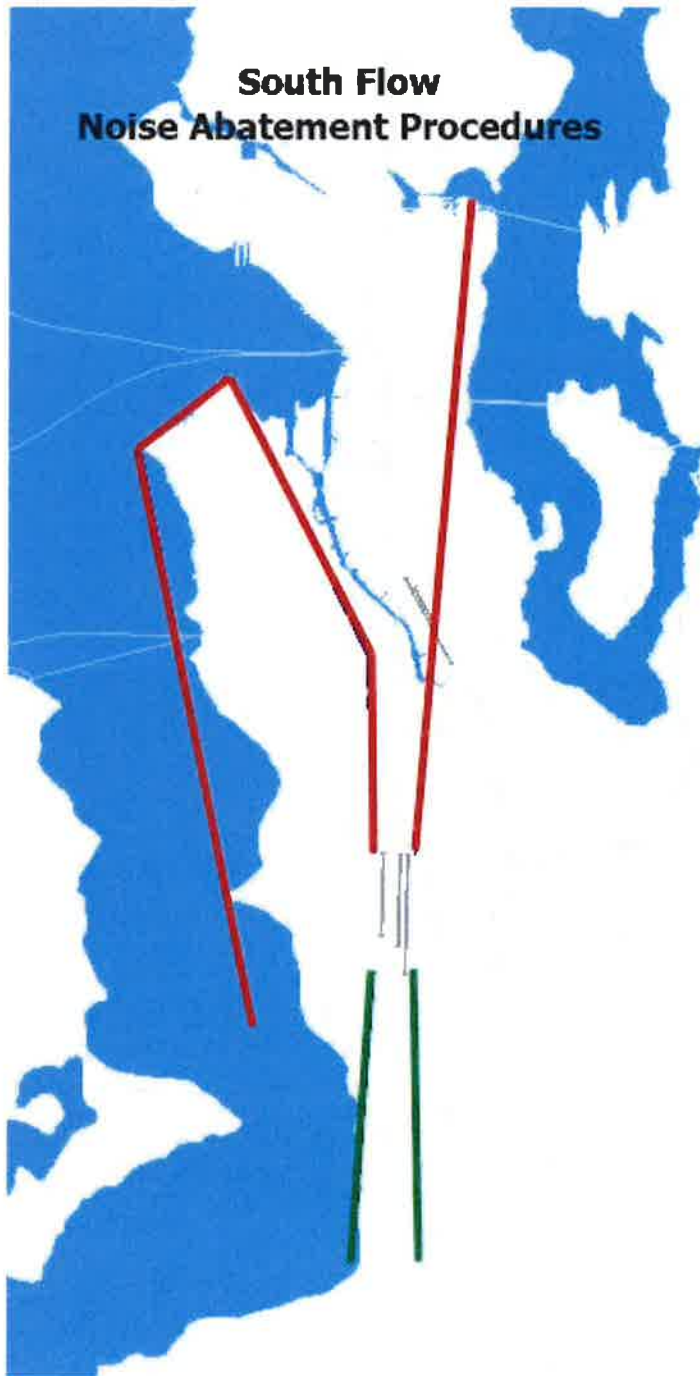


| | | |
|------------------|-------------------|------------------------|
| Altitude, Ground | Type | Operator |
| 8125 ft | B763 | Delta Air Lines |
| Vertical Speed | Speed | From → To |
| +2880 fpm | 308 kt | KCVG → EGLL |
| Heading | Transponder, MLAT | Squawk |
| 360° | ADS-B v2 | 1634 |



Instead of the above-depicted flight paths, which completely avoided all of Federal Way, the Sea-Tac Airport Noise Mitigation plan for south flow departures does the opposite. As

depicted below,³³ the plan restricts departing aircraft from turning until they have reached five nautical miles. This restriction prevents them from turning out over the water as the aircraft above did and pushes them to fly over Federal Way.



“[S]ubject to the constraints that the strategies are appropriate to the specific airport,” federal regulations (“Part 150”) require an aircraft operator “[a]t a minimum” to “analyze and

³³ “Sea-Tac Airport Noise Abatement Procedures for Jet Aircraft” at Port of Seattle website; <https://www.portseattle.org/projects/sea-tac-airport-noise-abatement-procedures-jet-aircraft>

report on . . . [t]he implementation of a preferential runway system” and “[t]he use of flight procedures (including the modifications of flight tracks) to control the operation of aircraft to reduce exposure of individuals (or specific noise sensitive areas) to noise in the area around the airport.”³⁴ The FAA itself states that

[t]he federal government has the authority and responsibility to control aircraft noise by the regulation of source emissions, by flight operational procedures, and by management of the air traffic control system and navigable airspace in ways that minimize noise impact on residential areas, consistent with the highest standards of safety and efficiency.³⁵

But as can be seen by the green lines above, the FAA specifically prohibits aircraft from flying over the water south of the airport. By contrast, they are forced to fly over the water north of the airport.³⁶

iii. Flight Schedules

Flight schedules offer another means of abatement. The 1997 state-funded study on the third runway concluded that “[t]he Port of Seattle should provide evidence of the continuing effort to minimize flights between 10:00 PM and 6:00 AM.”³⁷ Reducing flights during those times would minimize unhealthy sleep interruptions to Federal Way residents. In contrast to the 1997 report’s recommendations, the Port of Seattle has chosen to market Sea-Tac’s “24-hour operation with no curfews”³⁸ as a top selling point for the typically very large and noisy air cargo operations.

³⁴ 14 CFR Part 150 Appendix B (§ B150.7(b)(3), (4))

³⁵ “Chapter 13. Airport Noise and Access Restrictions” (FAA Airport Compliance Manual—Order 5190.6B) at Paragraph 13.2(b)(1)); https://www.faa.gov/airports/resources/publications/orders/compliance_5190_6/media/5190_6b_chap13.pdf

³⁶ Despite the referenced federal regulations and FAA order, it is likely that the FAA and Port will assert that none of these referenced rules apply to Federal Way, since we are outside of the official “noise contour” determined by 65 Day-Night Average Sound Level (DNL), which is discussed below. The same regulations cited in this paragraph also state that the “noise compatibility program” is to be developed, and “alternative noise control actions” are to be evaluated “[b]ased upon the airport noise exposure and noncompatible land uses identified in the [noise] map.” 14 CFR Part 150 Appendix B (§ B150.5). The noise maps must be developed with “[c]ontinuous [DNL] contours for YDNL [Yearly Day-Night Average Sound Level] levels of 65, 70, and 75,” though “additional contours may be developed and depicted when appropriate.” CFR Part 150 Appendix A (§ A150.101(a)). “In those areas where YDNL values are 65 YDNL or greater, the airport operator shall identify land uses and determine land use compatibility,” but “all land uses are considered to be compatible with noise levels less than L[dn] [DNL] 65 dB. Local needs or values may dictate further delineation based on local requirements or determinations.” CFR Part 150 Appendix A (§ A150.101(a), (d)).

³⁷ “Sea-Tac International Airport Impact Mitigation Study Initial Assessment and Recommendations” at Page 7-16

³⁸ “Air Cargo at the Port of Seattle” (Marketing Piece provided by Port staff on July 9, 2017)

h. **Federal Way Residents Disproportionately Harmed**

Needless to say, the benefits of SeaTac International Airport as an engine of economic development to the Puget Sound region, including Federal Way, are significant. In January 2018, the Port released a report prepared by Community Attributes, Inc. (CAI) on the economic impact of Sea-Tac International Airport.³⁹ This report showed 151,400 jobs generated by Sea-Tac Airport, as follows:

- 19,100 were directly generated by activity at the airport.
- 68,200 were directly generated by local purchases by visitors arriving via the airport.
- 16,100 were induced by local and regional purchases by the aforementioned 19,100 directly generated job holders.
- 25,300 were induced by local and regional purchases by the aforementioned 68,200 directly generated job holders
- 8,800 were indirectly generated by local purchases by firms dependent on activity at the airport.
- 13,900 were indirectly generated by local purchases by firms dependent on visitors arriving via the airport.⁴⁰

The CAI report also showed the airport generating \$22,478,000,000 in business revenue and \$7,099,600,000 in individual compensation, as follows:

- \$5,574,800,000 in business revenue and \$1,403,000,000 in individual compensation directly generated by activity at the airport
- \$5,906,500,000 in business revenue and \$2,247,800,000 in individual compensation directly generated by airport visitors
- \$2,544,600,000 in business revenue and \$854,300,000 in individual compensation induced by local and regional purchases by holders of jobs directly generated by activity at the airport
- \$4,000,300,000 in business revenue and \$1,343,000,000 in individual compensation induced by local and regional purchases by holders of jobs directly generated by local purchases by visitors arriving via the airport.
- \$2,001,100,000 in business revenue and \$503,000,000 in individual compensation indirectly generated by purchases by firms dependent on activity at the airport
- \$2,450,700,000 in business revenue and \$748,500,000 in individual compensation indirectly generated by purchases by firms dependent on visitors arriving via the airport.⁴¹

³⁹ Sea-Tac International Airport Economic Impacts (Produced for Port of Seattle by CAI Community Attributes, Inc. (CAI)) January 2018.

⁴⁰ Id. at page 24 (Exhibit 22)

⁴¹ Id.

The CAI report went on to break down the data by city,⁴² showing 1500 out of 19,100 airport employees living in Federal Way, or 7.85 percent.⁴³ Using a figure of 49,640 Federal Way residents aged 16 or higher in the labor force, the 1500 airport employees represent 3.0 percent of Federal Way's labor force.⁴⁴ For comparison, the presentation shows airport employees making up 0.4 percent of Seattle's labor force, 2.2 percent of Kent's labor force, 7.1 percent of Seatac's labor force, 9.6 percent of Tukwila's labor force, 0.9 percent of Tacoma's labor force, 4.4 percent of Des Moines' labor force, 1.0 percent of Renton's labor force, 2.1 percent of Burien's labor force, 1.4 percent of Auburn's labor force, 0.9 percent of Lakewood's labor force, 0.3 percent of Bellevue's labor force, 0.8 percent of Puyallup's labor force, 2.8 percent of Fife's labor force, 2.7 percent of Normandy Park's labor force, and 0.3 percent of Shoreline's labor force.⁴⁵

Finally, the CAI report breaks down the economic activity driven by Sea-Tac International Airport in 2017 for the cities of Burien, Des Moines, Federal Way, Normandy Park, Seatac, and Tukwila, as follows:⁴⁶

| City | Estimated Number of Airport Employees | Total Jobs Generated | Total Compensation | Total Economic Activity | Total State and Local Taxes Generated | Estimated Percentage of City's Gross Domestic Product (GDP) |
|--------------------|---------------------------------------|----------------------|-----------------------------------------------|-------------------------|---------------------------------------|-------------------------------------------------------------|
| Burien | 540 | 2,100 | \$106,000,000 (\$50,476/job) | \$138,000,000 | \$4,000,000 | 6% |
| Des Moines | 740 | 2,300 | \$119,000,000 (\$51,739/job) | \$115,000,000 | \$3,000,000 | 12% |
| Federal Way | 1,500 | 5,900 | \$297,000,000 (\$50,339/job) | \$402,000,000 | \$10,000,000 | 6% |
| Normandy Park | 100 | 300 | \$16,000,000 (\$53,333/job) | \$16,000,000 | \$400,000 | 12% |
| Seatac | 1,050 | 24,100 | \$2,000,000,000 (\$82,988/job) | \$6,000,000,000 | \$71,000,000 | 34% |
| Tukwila | 1,030 | 5,200 | \$274,000,000 (\$52,692/job) | \$742,000,000 | \$13,000,000 | 3% |

⁴² Id. at pages 27-34.

⁴³ Id. at page 27 (Exhibit 26).

⁴⁴ Id. at page 28 (Exhibit 27)

⁴⁵ Id.

⁴⁶ Id. at Pages 29-34

In an effort to further explore the relative benefits versus harms from Sea-Tac International Airport to residents of Federal Way, the City of Federal Way Mayor's Office, upon recommendation of the Mayor's Quiet and Healthy Skies Task Force, made a public records request on October 11, 2017 to the Port of Seattle asking for the "[n]umber of Sea-Tac Airport passengers broken down by country, state, city and zip or postal code--i.e. how many Sea-Tac Airport passengers live in each country, state, city and zip or postal code." The Port responded that it did not possess these records and data and referred us to a link showing overall statistics on number of passengers, number of operations, total air cargo, etc., but nothing broken down by zip code. The Mayor's Office rephrased its public records request on October 18, 2017 to request the "[n]umber of passengers departing from Sea-Tac Airport (either as point of origin or as a layover site) by country, state, city, and zip or postal code of residence." The Port again responded that it did not possess these records and data and again referred us to the same link.

While the numbers we do have (all supplied by the Port of Seattle, it must be noted) do suggest that Federal Way does enjoy certain benefits from Sea-Tac International Airport, the harms suffered by Federal Way residents due to airport activity are harder to measure. In fact, shortage of this sort of data is one reason why the Task Force is recommending that the City of Federal Way participate in funding the upcoming State of Washington Department of Commerce study of current and ongoing impacts associated with Sea-Tac Airport aircraft operations on surrounding airport communities, including Federal Way.

As described above, it was over twenty (20) years ago that a study on the impacts of Sea-Tac International Airport to local communities was last completed, in the context of the building of the third runway. That study, prepared under a grant from the State of Washington for the cities of Burien, Des Moines, Federal Way, Normandy Park, Seatac, and Tukwila, as well as Highline School District and Highline Community Hospital, concluded that Federal Way would require mitigation due to LDN [i.e. DNL] contours and overflights in the amount of \$148,000,000 (\$232,000,000 in 2018 dollars⁴⁷) for sound abatement insulation and aviation easements.⁴⁸ It was also estimated that the City of Federal Way would suffer a loss of single family residential property tax revenue from the years 2000 through 2020 in the amount of \$11,611,022 as a result of construction and operation of the third runway, with the total such loss to the five cities of Burien, Des Moines, Federal Way, Normandy Park, and Tukwila estimated at \$39,900,224.⁴⁹ Commenting on this loss, the study's authors observed as follows:

There is an inequity regarding the benefit of the Airport to its immediate neighbors. While the study acknowledges the benefit of the Airport to the region and the State, these benefits are not experienced locally in the 5 impacted communities [of Burien, Des Moines, Federal Way, Normandy Park, and Tukwila]. Approximately 5% of the persons utilizing the Airport live in the area most impacted. The remaining 95% of Airport passengers and employees come from elsewhere in the region.

⁴⁷ Converted time dollars from www.in2013dollars.com/1997-dollars-in-2018?amount=148000000.

⁴⁸ Sea-Tac International Airport Impact Mitigation Study at Page ES-4.

⁴⁹ Id. at Page 9-12 (Table 9.08)

Socio-economic impacts tend to blur across neighborhood lines and impact entire communities. In general, communities closer to the Airport are expected to experience a relative "depression" of residential property values (property values do not rise as fast relative to other similar properties in the region). This will have a cascading affect on the population mix in these areas. Single-family homes that cannot be sold will become rental properties. Studies have reported that non owner-occupied residential areas have a lower average household income and utilize more social services than other areas. While the property value and tax revenues are depressed in these areas, the cost of providing social services increases.

Overall, the 5 communities were projected to experience a loss of \$39.9 million during the period 2000 through 2020 as a result of the proposed project. The loss of these revenues is compounded with the problem of increasing demand for community and social services.

The discrepancy between these two trends contributes to the "blighting" of the area. This "blighting" impact has already been observed. Homes take longer to sell in the neighborhoods adjacent to the Airport, and the local real estate market already acknowledges the impact of aviation activity on neighborhoods.⁵⁰

The upcoming Department of Commerce study is likely to show similar results, suggesting that while Federal Way does benefit from Sea-Tac, that benefit is substantially negated by the harmful impacts of aircraft operations from the airport. Most users of Sea-Tac enjoy its benefits while sharing few of its costs. But those living under flight paths are burdened with a decreased quality of life, sleep deprivation, increased exposure to health risks from emissions, and decreased property values. Furthermore, Federal Way residents are excluded from Sea-Tac's Part 150 noise mitigation zone, within which residents of Burien and other neighborhoods to the north have received \$400 million⁵¹ in noise insulation and other mitigation benefits funded by the Port and FAA.

Also, there are more south flow departures and north flow approaches bringing an inordinate amount of traffic over Federal Way. And the flight paths south of the airport were designed without regard to the number of people below them, causing flights to take a less efficient path that also impacts many more people than a modern short path. The approaches in the north flow (those going over Federal Way) to the longest runway are also on a lower and less safe glide path. The largest and heaviest aircraft typically favor the longest runway and therefore end up being lower over Federal Way. On the other hand, no approaches in south flow (those that do *not* go over Federal Way) are below the standard three-degree glide path.

⁵⁰ Id. at Page ES-6.

⁵¹ "Noise Programs & NextGen Briefing" at Slide 8 ("\$400 million spent since 1985 on mitigation")

i. DNL Meaning and Appropriateness

i. DNL Meaning

Sound is made up of vibrations in air at different frequencies. Since the human ear does not hear all frequencies, A-weighted decibels (dBA) are commonly used to measure relative loudness. A-weighted decibels reduce the values of low frequencies so as to be a more accurate measurement of what is perceived.

“For aviation noise analyses, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of Yearly Day Night Average Sound Level (DNL), the FAA’s primary noise metric.”⁵² “The DNL has also been identified by the U.S. Environmental Protection Agency (USEPA) as the principal metric for airport noise analysis.”⁵³

Day-Night Average Sound Level (DNL) is a 24-hour equivalent sound level. DNL is expressed as an average noise level on the basis of annual aircraft operations for a calendar year. To calculate the DNL at a specific location, Sound Exposure Levels (SELs) (the total sound energy of a single sound event) for that particular location are determined for each aircraft operation (landing or takeoff). The SEL for each operation is then adjusted to reflect the duration of the operation to arrive at a “partial” DNL for the operation. The partial DNLs are then added logarithmically — with the appropriate penalty for those operations occurring during the nighttime hours — to determine total noise exposure levels for the average day of the year.⁵⁴

ii. DNL Appropriateness

DNL as an annoyance level is fundamentally flawed. Humans do not perceive a single, short, loud sound event as an average over a much longer period of time. The Yale University Office of Environmental Health and Safety places the decibel level of a vacuum cleaner at 75 dBA.⁵⁵ At that amount of sound pressure, the vacuum could run for twenty minutes *of every hour* and not fall within the 65 DNL established by the FAA as the point when people become annoyed by noise.

⁵² “Noise and Noise-Compatible Land Use” (Environmental Impacts: Policies and Procedures--FAA Order 1050.1F) at Appendix B, Section B-1. https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf

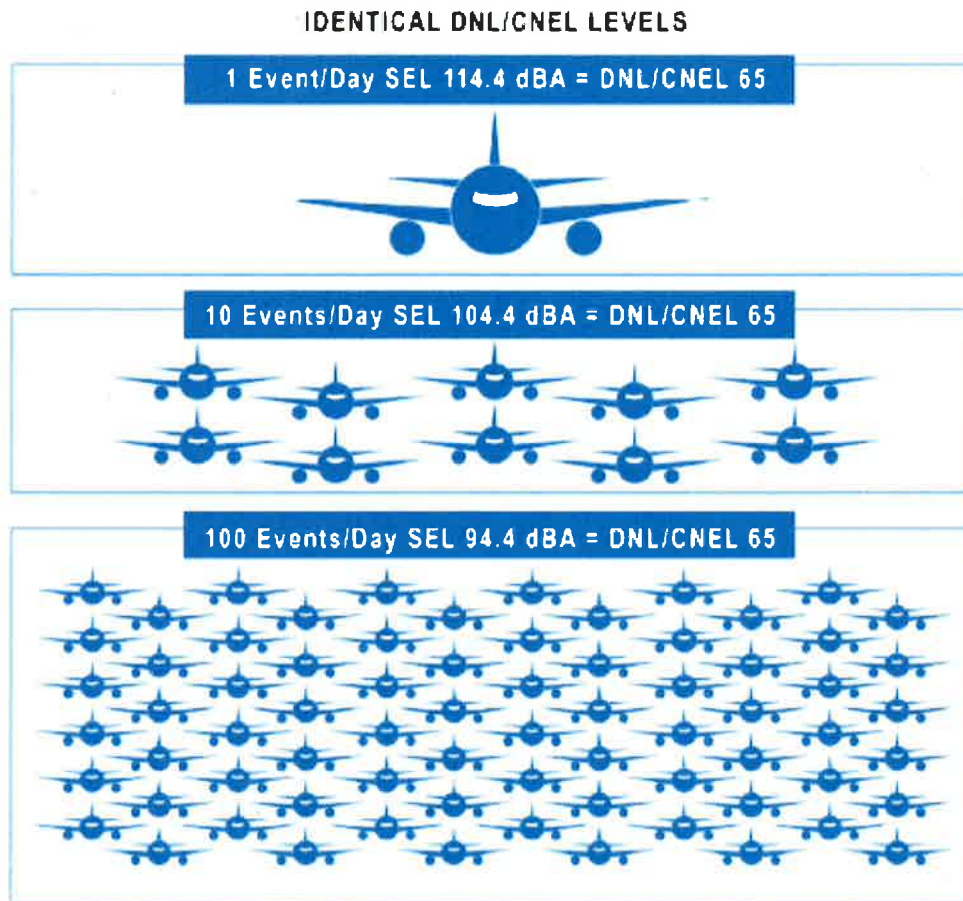
⁵³ “Aircraft Noise & Noise Monitoring” (Published by Federal Aviation Administration) at Question 4; https://www.faa.gov/airports/airport_development/omp/faq/Media/Noise_Monitoring.pdf

⁵⁴ Id.

⁵⁵ “Decibel Level Comparison Chart” (Yale Office of Environmental Health and Safety); <https://ehs.yale.edu/sites/default/files/files/decibel-level-chart.pdf>

Large aircraft on departure register 83+ dBA over Sacajawea Middle School's noise monitor, including in the middle of the night.⁵⁶ The DNL calculation adds ten decibels for events between 10:00 PM and 7:00 AM.⁵⁷ This ten-decibel adjustment has been added because of the increased sensitivity to noise during normal nighttime hours and because ambient (without aircraft) sound levels during nighttime are typically about ten decibels lower than during daytime hours.

The following graphic illustrates how many aircraft it takes to hit the 65 DNL at different volumes and levels of traffic:⁵⁸



⁵⁶ A China Airlines flight on September 30, 2017 registered 83 decibels at Sacajawea at 2:24:42 AM as shown on the Port of Seattle's noise website.

⁵⁷ "Chapter 4: Impact Categories, Significance, and Mitigation" (Environmental Impacts: Policies and Procedures-- FAA Order 1050.1F) at Page 4-8 (footnote 7); https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf

⁵⁸ "Aircraft Noise 101 LAX Community Noise Roundtable" (Power Point presented by Environmental Science Associates (ESA) on May 9, 2012) at Slide 31; <https://www.lawa.org/-/media/lawa-web/environment/lax->

Can the 65 DNL number be changed? According to the FAA:

When *communities* are considered as a whole, . . . reliable relationships are found between reported annoyance and noise exposure. This relationship between community annoyance and noise exposure levels “ . . . remains the best available source of predicting the social impact of noise on communities around airports . . . ”. As the Federal Interagency Committee on Noise (FICON) noted in its 1992 report, “the best available measure of [community annoyance] is the percentage of the area population characterized as ‘highly annoyed’ (%HA) by long-term exposure to noise of a specified level (expressed in terms of DNL).”⁵⁹

But the FAA’s conclusion on the reliability of the DNL metric is belied by our own experience in Federal Way. On November 19, 2015, the City of Federal Way held a “SeaTac Noise – Federal Way Community Open House” and got a standing-room-only crowd. Since all of Federal Way is outside of the 65 DNL contour, the FAA’s claim that that metric is the best gauge for when the average population will be annoyed by noise is clearly flawed.

Due to lawsuits, some airports do mitigate below the 65 DNL. One example is Minneapolis-St. Paul International Airport (MSP). “In 2007, the MAC [Metropolitan Airports Commission, which operates MSP] voted to approve a proposed settlement in a noise mitigation lawsuit brought by the cities of Minneapolis, Richfield and Eagan. Under the new noise mitigation program, the MAC would provide mitigation to homes in the 60 to 64 DNL contours.”⁶⁰

Meanwhile, the FAA has claimed to be reviewing the DNL metric⁶¹, but to date no change has developed. Congressman Adam Smith has introduced federal legislation to expand the areas eligible for federal mitigation so as to include communities within “1 mile from any point at which a commercial or cargo jet route is 3,000 feet or less above ground level.”⁶² At Mayor Ferrell’s urging, Congressman Smith also sent a letter on June 19, 2018 to the Acting Administrator of the FAA asking for an update on the FAA’s evaluation of the 65 DNL metric and alternative metrics. Also, the FAA Reauthorization Bill passed by the House of

[community-noise-roundtable/noise_management_presentations/noise_management_presentation/noisert_120509_aircraft-noise-101.ashx?la=en&hash=1ADCD814A1_227E572BFF19162D8DD9693CF6CE3B](https://www.faa.gov/airports/operations/airport_noise/community-noise-roundtable/noise_management_presentations/noise_management_presentation/noisert_120509_aircraft-noise-101.ashx?la=en&hash=1ADCD814A1_227E572BFF19162D8DD9693CF6CE3B) (Used with Permission)

⁵⁹ “Chapter 13. Airport Noise and Access Restrictions” at Paragraph 13.16 (emphasis in original)

⁶⁰ “Minneapolis-St. Paul International Airport - Noise Compatibility Program”; <https://www.boeing.com/resources/boeingdotcom/commercial/noise/minneapolis.html>

⁶¹ “Press Release -- FAA to Re-Evaluate Method for Measuring Effects of Aircraft Noise” (Released by Federal Aviation Administration on May 7, 2015); https://www.faa.gov/news/press_releases/news_story.cfm?newsId=18774

⁶² Aviation Impacted Communities Act (Sec. Seven, Paragraph (2)).

Representatives on April 27, 2018 requires the FAA to complete the evaluation within one year.⁶³

iii. DNL fails to consider noise as a health issue, in addition to annoyance.⁶⁴

For years, scientists have warned that ever-increasing environmental noise has a negative impact on people's health. These effects can be physical, psychological, and even intellectual. For example, one almost forty-year-old study found that after the installation of rubber cushions and noise-absorbing ceilings in classrooms, children's reading scores increased.⁶⁵ And more recent research found a correlation between exposure to airplane noise and heart attacks, chest pain, hypertension, and strokes amongst those living near and around airports.⁶⁶ A study published just last year linked loud noises to hearing loss.⁶⁷ This author asked:

. . . [W]ill the outcry from citizens concerned about the deleterious effects of noise on health convince governments to pass policies to address noise pollution? Will public officials recognize that sound data already exist to justify passing and enforcing such policies? I will urge public officials to heed former Surgeon General William H. Stewart's quote: "Must we wait until we prove every link in the chain of causation? I stand firmly with Surgeon General Burney's statement of 10 years ago. In protecting health absolute proof comes late. To wait for it is to invite disaster or to prolong suffering unnecessarily."⁶⁸

Also in 1992 and also right here in Puget Sound, the Health Subcommittee of the Environmental Impact Committee of the Regional Coalition on Airport Affairs produced a lengthy document entitled "The Adverse Health Impacts of Airport Expansion with Particular Reference to Sea-Tac International Airport," stating that

[d]isturbance of sleep is one of the most significant sources of distress caused by airport noise. Airport noise causes difficulty in attaining deep sleep, shortened REM sleep, and premature arousal from sleep. Both deep and REM sleep are

⁶³ Presentation of Port of Seattle Federal & International Government Relations Senior Manager Eric Schinfeld at June 27, 2018 meeting of Sea-Tac Airport Stakeholders Roundtable (StART) (held at Sea-Tac Conference Center)

⁶⁴ The Task Force would like to acknowledge that this subsection is based almost exclusively on research and writing done by Former Task Force Member Kristin Yodock, Ph.D. She has not endorsed or approved this final product.

⁶⁵ "The effect of a noise abatement program on reading ability" by A. L. Bronzaft. *Journal of Environmental Psychology*, 1, 215-222. doi: 10.1016/S0272-4944(81)80040-0 (1981)

⁶⁶ "Residential exposure to aircraft noise and hospital admissions for cardiovascular diseases: Multi-airport retrospective study" by A. W. Correia, J. L. Peters, J. L. Levy, S. Melly, and F. Dominici. *British Medical Journal*, 347, f5561. doi: 10.1136/bmj.f5561 (2013)

⁶⁷ "Impact of noise on health: The divide between policy and science" by A. L. Bronzaft. *Open Journal of Social Sciences*, 5, 108-120. doi: 10.4236/jss.2017.55008 (2017)

⁶⁸ *Id.*

thought to be physiologically important. Sleep deprivation leads to impaired reaction times, fatigue, lethargy, decreased efficiency, anxiety and desire to be left alone.⁶⁹

This subcommittee also stated that

[a]irport noise results in a significant increase in community use of tranquilizers and sleeping pills. Airport communities have an increased rate of alcoholism, and admissions to psychiatric hospitals. Airport-related noise can literally drive people mad.⁷⁰

It goes on to allege that

[i]nfants born to mothers living under the flight path have lower birth weights and higher likelihood of prematurity. There is some experimental evidence to suggest that serious birth defects are more likely when the mother is exposed to high noise levels during pregnancy. Airport communities are unsafe for pregnant women and their children.⁷¹

“Experts have also claimed,” the subcommittee states under “Immunology,” “that loud and disturbing noises trigger changes in circulating hormones and may lower resistance to disease and infection.”⁷²

This document does not appear to have been peer-reviewed or published in any professional journal. But the point is that the DNL metric, in addition to its other flaws, fails to take the possibility of health hazards from noise into account, instead treating noise as merely an annoyance.

It should be noted that the FAA Reauthorization Bill passed by the House of Representatives on April 27, 2018 adds Seattle to cities being analyzed in a study of the health impacts of airport noise.⁷³

⁶⁹ “The Adverse Health Impacts of Airport Expansion with Particular Reference to Sea-Tac International Airport” prepared by D. Dennis Hansen, M.D. and Lee A. Sanders, M.D., Ph.D. for the Health Subcommittee of the Environmental Impact Committee of the Regional Coalition on Airport Affairs (October 5, 1992); <http://www.airportnoiselaw.org/hansen.html>

⁷⁰ Id.

⁷¹ Id.

⁷² Id.

⁷³ Presentation of Port of Seattle Federal & International Government Relations Senior Manager Eric Schinfeld at June 27, 2018 meeting of Sea-Tac Airport Stakeholders Roundtable (StART) (held at Sea-Tac Conference Center)

j. Should City of Federal Way Invest in Portable Noise Monitors?

Having our own portable noise monitor or monitors would allow the City of Federal Way to confirm the real sound levels at different locations. Due to the valleys and hillsides created by the greatly varying terrain, the proximity to water, and ambient noise, Federal Way residents believe that the current Federal Way noise monitors (operated by the Port) may not accurately measure the real sound levels experienced at their locations. For instance, the noise monitor at Sacajawea Middle School has a direct line of sight to Dash Point Road/State Highway 509, increasing the ambient noise significantly compared to most neighborhoods and therefore skewing the results as to how much time a typical neighborhood is at a level of noise above the ambient level. Also, hills and valleys likely impact the sound exposure significantly inside of the same housing development.

Having a portable noise monitor would give better insight as to the real impacts within neighborhoods. However, current FAA rules and regulations do not allow readings from noise monitors to be used to determine the noise contours. The regulations only allow the FAA's qualified tool that uses modeling.⁷⁴

k. Recommendations

1. The City of Federal Way should continue to engage with Rep. Adam Smith and strongly support his Aviation Impacted Communities Act. This legislation would not only expand the definition of an aviation-impacted community (where federal mitigation funds may be spent)⁷⁵, but would also *require* the FAA to:
 - a. work with community boards designated by such communities and attend their board meetings⁷⁶;
 - b. “devise an action plan that alleviates or addresses the concerns brought up in . . . [a] community report” drafted by a community board that “detail[s] the community’s concerns and issues related to disparate impacts”⁷⁷;
 - c. collaborate with community boards on scoping and methodology of any community study requested by a community board⁷⁸;

⁷⁴ “Aircraft Noise 101” (May 22, 2018 Power Point Presentation by Steve Alverson of Environmental Science Associates (ESA) Sponsored by Port of Seattle for Members of Highline Forum and Sea-Tac Airport Stakeholders Roundtable (StART)) at Slide 31

⁷⁵ Aviation Impacted Communities Act (Sec. Five and Sec. Seven (Paragraph 2))

⁷⁶ *Id.* at Sec. Three (Paragraph d)

⁷⁷ *Id.* at Sec. Four (Paragraph a) and Sec. Three (Paragraph e)

⁷⁸ *Id.* at Sec. Three (Paragraph g)

- d. “devise an action plan that alleviates or addresses the concerns brought up in the . . . community study”⁷⁹;
 - e. “where effective, consider the implementation of changes to operations and flight paths if the community report or community study indicates that such changes would decrease the impacts on the designated community”⁸⁰;
 - f. “explain the rationale” for any determination that “changes to operations and flight paths that a community report or community study indicated would decrease the effects on the designated community would not be effective”⁸¹;
 - g. “[u]pon request of a designated community, and in addition to the annualized average measurement . . . provide additional noise measurement instrumentation to measure airplane noise”⁸²;
2. The City of Federal Way should also strongly support the efforts of Congressman Smith and others to ensure that the FAA quickly completes its evaluation of the DNL and alternative metrics.
 3. The City of Federal Way should engage with newly-authorized FAA community engagement staff, as soon as they are hired, and should insist that alternatives to DNL be examined. If these efforts are fruitless, the City of Federal Way should support legislation to change the standard.
 4. The City of Federal Way should also lobby the FAA, Port of Seattle, and, if necessary, Congress, to change all glide slopes to at least three degrees (or higher) and flight paths so as not to go over populated areas.
 5. The City of Federal Way should make the case with the FAA and Port of Seattle that the third runway should only be used for its original purpose, which was inclement weather.
 6. The City of Federal Way should purchase a portable noise monitor so as to give data and metrics for objective impacts to lives.

⁷⁹ Id. at Sec. Four (Paragraph a)

⁸⁰ Id. at Sec. Four (Paragraph b(2))

⁸¹ Id. at Sec. Four (Paragraph c)

⁸² Id. at Sec. Five (Paragraph d)

IV. THE AUTHORITY TO REGULATE: CASE STUDY ON EFFORTS TOWARD CURFEW FOR CARGO FLIGHTS

a. Cargo Flights

It is well-known that cargo flights, as well as passenger flights have been dramatically increasing in recent years at Sea-Tac International Airport. On January 26, 2017, the Port of Seattle advertised the airport's having "vault[ed]" from 13th busiest in the United States to 9th busiest.⁸³ As far as air cargo, the Port noted that:

[t]otal air cargo went up for the fifth straight year in 2016, increasing 10.2 percent to more than 366,000 metric tons. Four new air freight carriers in 2016 - DHL, AeroLogic, PrimeAir, and AirBridgeCargo - helped boost the total. Domestic air freight shot up 20 percent to 194,754 metric tons in 2016. Sea-Tac was the first U.S. airport in 2016 to welcome the Amazon-branded Prime Air 767 cargo aircraft into service.⁸⁴

Even these figures from 1 ½ years ago are already out of date. In recent communications, the Port now says that it handled 425,800 metric tons of air cargo in 2017⁸⁵, an increase of **16.34 percent in one year!** As of June 27, 2018, cargo had risen another 5.1 percent.⁸⁶

Some activists have proposed moving air cargo to Grant County International Airport near Moses Lake. However, Port staff and commissioners have raised various objections to this idea. For example, in a July 5, 2017 meeting with Mayor Ferrell and his staff, Former Port Commissioner John Creighton indicated that there is no cold storage facility in Moses Lake, and to build one would be very expensive when the crops that need this (cherries) are only shipped three months out of the year.

While data provide by the Port shows the vast majority of flights between 10:00 PM and 6:00 AM are passenger flights,⁸⁷ there are certain middle-of-the-night cargo flights that have led to numerous complaints, for example:

⁸³ "Record 2016 passenger travel vaults Sea-Tac Airport to 9th busiest in U.S. – up from 13th" (January 26, 2017 Port of Seattle press release)

⁸⁴ Id.

⁸⁵ May 1, 2018 from Port of Seattle listserv.

⁸⁶ Presentation of Port of Seattle Airport Operations Director Mike Ehl at June 27, 2018 meeting of Sea-Tac Airport Stakeholders Roundtable (StART) (held at Sea-Tac Conference Center)

⁸⁷ A September 6, 2017 email from Port of Seattle Senior Manager, Federal & International Government Relations Eric Shinfeld provided data showing that of 1208 flights that took off or landed between 10:00 PM and 6:00 AM from July 24, 2017 through July 31, 2017, 1109 were passenger flights, 75 were cargo, and 24 were general aviation.

- On March 8, 2017, a Task Force member reported that a China Airlines 747-4 woke him up and kept him up at 2:08 AM. He said it was one of the loudest jet events he had heard in months, probably due to the wind.
- On May 13, 2017 at 3:11 AM, the same Task Force member reported that the China Airlines flight registered 83 decibels at the noise monitor at Sacajawea Middle School. He also said that an earlier flight at 2:38 AM woke him up.
- An email received on February 14, 2018 by the City of Federal Way Mayor's Office from a Des Moines resident says, "We have cargo Asian liners that rumble over our homes shaking our windows rendering noise insulation useless, waking us up at 2 and 3 AM in the morning."
- In a February 27, 2018 meeting with Puget Sound Regional Council (PSRC) Executive Director Josh Brown, City of Federal Way Mayor Jim Ferrell went over the issue of heavy freight flights in the middle of the night (2:00 AM to 3:00 AM) and his resulting concern with the expected *tripling* of cargo in the coming years as well as the expected *40 percent* increase in passengers. Mr. Brown responded that these issues had arisen in meeting with other cities' leaders. He had heard from others that there is no lull in air traffic, which instead is constant and linear (not spread out). He also said that the 747 jet flight to China at 2:00 AM was mentioned in all meetings. He said that the State is conducting a study of air cargo and that this study, all master plans, the Federal Way Mayor's Quiet and Healthy Skies Task Force report, the University of Washington study funded by the State Legislature in 2017, and the Department of Commerce 2019 aircraft impacts study will all be incorporated into the FAA-funded PSRC Regional Aviation Baseline Study being launched in mid-2018 and expected to be completed by the end of 2019.
- At the May 23, 2018 meeting of the Highline Forum, Seatac City Manager Joe Scorcio noted that in the last two years, there have been more freight departures in the late evening and early morning and that this is what causes most complaints. In particular, Scorcio noted one well-known flight at 3:30 AM every morning to China that is heavy and has a slow takeoff. It was acknowledged that these are heavier planes and climb more slowly.

Port staff has indicated that the airport director has asked the airline if it can voluntarily look at an alternative to the middle-of-the-night flight to China that disturbs so many people. Port commissioners have also publicly spoken about trying to get resolution on this issue.

It is nevertheless of further concern that the Port has plans to *triple* air cargo.⁸⁸ And the Port *markets* its great availability for cargo, including "24-hour operation with no curfews."⁸⁹

⁸⁸ "Port of Seattle 2018-2022 Long Range Plan" Objective 3 (slides 9 and 12). At a May 30, 2018 meeting on the Sustainable Airport Master Plan (SAMP) held at Burien Community Center, Port officials said that this tripling of cargo is a 20-year goal/target of the Port's "Century Agenda", not a forecast. It is, the officials said, an "aspirational goal" set by the Port commissioners.

b. Legal Analysis

So the question, first of all, is whether a “curfew” on cargo (and/or other) flights is feasible and whether it would require a change to federal law.

In 1973, the United States Supreme Court considered a curfew adopted by the City of Burbank, California that prohibited jet airplanes from taking off from the Hollywood-Burbank Airport between 11:00 PM and 7:00 AM.⁹⁰ The Court held the curfew unconstitutional because “FAA, now in conjunction with EPA, has full control over aircraft noise, preempting state and local control.”⁹¹ “It is the pervasive nature of the scheme of federal regulation of aircraft noise,” the Court reasoned, “that leads us to conclude that there is pre-emption.”⁹² Though “[c]ontrol of noise is of course deep-seated in the police power of the States,” the Court went on, “the pervasive control vested in EPA and in FAA under the 1972 [Noise Control] Act seems to us to leave no room for local curfews or other local controls.”⁹³

However, the Supreme Court left open an important consideration, as follows:

[W]e are concerned here not with an ordinance imposed by the City of Burbank as “proprietor” of the airport, but with the exercise of police power. . . . [M]any airports are owned by one municipality yet physically located in another. For example, the principal airport serving Cincinnati is located in Kentucky. Thus, authority that a municipality may have as a landlord is not necessarily congruent with its police power. We do not consider here what limits, if any, apply to a municipality as a proprietor.⁹⁴

The “proprietor’s exemption” to preemption was expanded upon in 1976 when the United States District Court for the Northern District of California refused to declare unconstitutional an ordinance enacted by a city in its “capacity as proprietor of” an airport that “prohibit[ed] all aircrafts which exceed a noise level of 75 dBA from landing or taking off . . . between the hours of 11:00 p.m. and 7:00 a.m.”⁹⁵

⁸⁹ Air Cargo at the Port of Seattle (Marketing Piece provided by Port staff on July 9, 2017)

⁹⁰ Burbank v. Lockheed Air Terminal, Inc., 411 US 624, 625-626 (1973)

⁹¹ Id. at 626, 633.

⁹² Id. at 633.

⁹³ Id. at 638.

⁹⁴ Id. at 635 (footnote 14).

⁹⁵ National Aviation v. Hayward, 418 F. Supp. 417, 418 (N.D. Cal. 1976).

The District Court based its decision partially on another United State Supreme Court case Griggs v. Allegheny County, 369 US 84 (1962), which “held that an airport operator is financially responsible to nearby property owners for property damage resulting from aircraft noise from overflying commercial flights.”⁹⁶ Thus, to find preemption would “impose upon airport proprietors the responsibility under Griggs for obtaining the requisite noise easements, yet deny them the authority to control the level of noise produced at their airports.”⁹⁷ However, the legislative history of the Noise Control Act of 1972 convinced the District Court that this was *not* intended.⁹⁸ Thus, the District court concluded that

while the Congressional purpose was undoubtedly clear enough to the Burbank majority to rule that a municipality's police power regulations regarding aircraft noise at an airport, which it was not the proprietor of, invaded an area exclusively reserved for federal control, [footnote omitted] this court cannot, in light of the clear Congressional statement that the amendments to the Federal Aviation Act [i.e. in the Noise Control Act of 1972] were not designed to and would not “prevent airport proprietors from excluding any aircraft on the basis of noise considerations,” [footnote omitted] make the same finding with respect to regulations adopted by municipal airport proprietors.⁹⁹

This “proprietor exception” has been utilized with limited success to uphold certain noise restrictions adopted by airport proprietors. In 1981, the Ninth Circuit Court of Appeals (which includes the State of Washington) upheld several City of Santa Monica ordinances that were passed “to reduce noise at the city-owned and operated airport,” including ordinances that:

- “imposed a night curfew on takeoffs and landings”;
- “prohibited certain low aircraft approaches on weekends”
- “prohibited helicopter flight training”; and
- “established a maximum single event noise exposure level (SENEL) of 100 dB” [decibels].¹⁰⁰

“Because Congressional intent not to preempt all regulation by municipal-proprietors is clear,” the Ninth Circuit concluded, “the district court correctly concluded that these ordinances were not preempted.”¹⁰¹ The Court specifically went on to “hold that the municipal proprietor exception allows the City to choose the SENEL method involved here, despite

⁹⁶ National Aviation, 418 F. Supp. at 424.

⁹⁷ Id.

⁹⁸ Id.

⁹⁹ Id. (quoting Sen. Rep. No. 1353, 90th Cong., 2d Sess., 7)

¹⁰⁰ Santa Monica Airport Asso. v. Santa Monica, 659 F.2d 100, 102 (9th Cir. 1981).

¹⁰¹ Id. at 104.

the SENEL's monitoring of noise created by planes as they are ascending or descending.”¹⁰²

Eleven years later, relying on the Santa Monica case, the Ninth Circuit found that a City of Long Beach, California ordinance limiting the number of daily flights at Long Beach Municipal Airport (which the city owned) was not preempted by federal law.¹⁰³ However, the Court nevertheless upheld the lower court's permanent injunction against the ordinance on other grounds (violation of procedural due process due to no opportunity for notice and hearing).¹⁰⁴

Similarly, the United States District Court for the Southern District of New York rejected a preemption argument against noise restrictions adopted by the Port Authority of New York and New Jersey over John F. Kennedy Airport, which the Port owned and operated.¹⁰⁵ “Contrary to Arrow's assertion,” the Court noted,

nothing in City of Burbank v. Lockheed Air Terminal, Inc., [citation omitted], casts any doubt on the authority of an airport proprietor to regulate aircraft noise. In City of Burbank, the Supreme Court held only that a *municipality*, using its *police powers*, could not limit the time in which aircraft can takeoff and land. [citation omitted]”¹⁰⁶

Much of the law surrounding federal preemption of local noise restrictions by airport proprietors, however, was upended by the passage in 1990 of the Airport Noise & Capacity Act (ANCA), under which “an airport noise or access restriction on the operation of stage 3 aircraft not in effect on October 1, 1990, may become effective only if the restriction has been agreed to by the airport proprietor and all aircraft operators or has been submitted to and approved by the Secretary of Transportation. . . .”^{107 108} This provision of ANCA is all-encompassing as it applies to:

¹⁰² Id.

¹⁰³ Alaska Airlines, Inc. v. Long Beach, 951 F.2d 977, 980, 982 (9th Cir. 1992).

¹⁰⁴ Id. at 981, 986-987.

¹⁰⁵ Arrow Air, Inc. v. Port Authority of New York & New Jersey, 602 F. Supp. 314, 316, 318-319 (S.D. N.Y. 1985).

¹⁰⁶ Id. at 318.

¹⁰⁷ 49 USC § 47524(c)(1)

¹⁰⁸ ANCA also prohibited large jets (more than 75,000 pounds) that did not comply with stage 3 noise levels after December 31, 1999, 49 USC § 47528(a), and small jets (75,000 pounds or less) that did not comply with stage 3 noise levels after December 31, 2015, 49 USC § 47534 (a). “[O]n July 2, 2013, the FAA published a Final Rule in the Federal Register for the Adoption of Statutory Prohibition [on] the Operation of Jets Weighing 75,000 Pounds or Less That Are Not Stage 3 Noise Compliant.”; https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/airport_aircraft_noise_issues/levels/ Thus, “Stage 1 and stage 2 are no longer permitted to operate in the United States.” “Aircraft Noise 101” (May 22, 2018 Power Point Presentation by Steve Alverson of Environmental Science Associates (ESA) Sponsored by Port of Seattle for Members of Highline Forum and Sea-Tac Airport Stakeholders Roundtable (StART)) at Slide 65.

- (A) a restriction on noise levels generated on either a single event or cumulative basis;
- (B) a restriction on the total number of stage 3 aircraft operations;
- (C) a noise budget or noise allocation program that would include stage 3 aircraft;
- (D) a restriction on hours of operations; and
- (E) any other restriction on stage 3 aircraft.¹⁰⁹

Finally, to approve the proposed restriction, the Secretary of Transportation must find by “substantial evidence” that:

- (A) the restriction is reasonable, nonarbitrary, and nondiscriminatory;
- (B) the restriction does not create an unreasonable burden on interstate or foreign commerce;
- (C) the restriction is not inconsistent with maintaining the safe and efficient use of the navigable airspace;
- (D) the restriction does not conflict with a law or regulation of the United States;
- (E) an adequate opportunity has been provided for public comment on the restriction; and
- (F) the restriction does not create an unreasonable burden on the national aviation system.¹¹⁰

These new rules do not apply to restrictions in effect as of November 5, 1990.¹¹¹ The Department of Transportation has adopted detailed requirements for each of the above six statutory conditions. For instance, for just the *first* of these conditions (i.e., to prove that the restriction “is reasonable, nonarbitrary, and nondiscriminatory”¹¹²), the following evidence is required:

- (1) Evidence that a current or projected noise or access problem exists, and that the proposed action(s) could relieve the problem, including:

¹⁰⁹ 49 USC § 47524(c)(1)

¹¹⁰ 49 USC § 47524(c)(2)

¹¹¹ 49 USC § 47524(d)

¹¹² 49 USC § 47524(c)(2)(A)

(i) A detailed description of the problem precipitating the proposed restriction with relevant background information on factors contributing to the proposal and any court-ordered action or estimated liability concerns; a description of any noise agreements or noise or access restrictions currently in effect at the airport; and measures taken to achieve land-use compatibility, such as controls or restrictions on land use in the vicinity of the airport and measures carried out in response to 14 CFR part 150; and actions taken to comply with grant assurances requiring that:

(A) Airport development projects be reasonably consistent with plans of public agencies that are authorized to plan for the development of the area around the airport; and

(B) The sponsor give fair consideration to the interests of communities in or near where the project may be located; take appropriate action, including the adoption of zoning laws, to the extent reasonable, to restrict the use of land near the airport to activities and purposes compatible with normal airport operations; and not cause or permit any change in land use, within its jurisdiction, that will reduce the compatibility (with respect to the airport) of any noise compatibility program measures upon which federal funds have been expended.

(ii) An analysis of the estimated noise impact of aircraft operations with and without the proposed restriction for the year the restriction is expected to be implemented, for a forecast timeframe after implementation, and for any other years critical to understanding the noise impact of the proposed restriction. The analysis of noise impact with and without the proposed restriction including:

(A) Maps of the airport noise study area overlaid with noise contours as specified in §§ 161.9 and 161.11 of this part;

(B) The number of people and the noncompatible land uses within the airport noise study area with and without the proposed restriction for each year the noise restriction is analyzed;

(C) Technical data supporting the noise impact analysis, including the classes of aircraft, fleet mix, runway use percentage, and day ight breakout of operations; and

(D) Data on current and projected airport activity that would exist in the absence of the proposed restriction.

(2) Evidence that other available remedies are infeasible or would be less cost-effective, including descriptions of any alternative aircraft restrictions that have been considered and rejected, and the reasons for the rejection; and of any land

use or other nonaircraft controls or restrictions that have been considered and rejected, including those proposed under 14 CFR part 150 and not implemented, and the reasons for the rejection or failure to implement.

(3) Evidence that the noise or access standards are the same for all aviation user classes or that the differences are justified, such as:

(i) A description of the relationship of the effect of the proposed restriction on airport users (by aviation user class); and

(ii) The noise attributable to these users in the absence of the proposed restriction.

(B) At the applicant's discretion, information may also be submitted as follows:

(1) Evidence not submitted under paragraph (e)(2)(ii)(A) of this section (Condition 2) that there is a reasonable chance that expected benefits will equal or exceed expected cost; for example, comparative economic analyses of the costs and benefits of the proposed restriction and aircraft and nonaircraft alternative measures. For detailed elements of analysis, see paragraph (e)(2)(ii)(A) of this section.

(2) Evidence not submitted under paragraph (e)(2)(ii)(A) of this section that the level of any noise-based fees that may be imposed reflects the cost of mitigating noise impacts produced by the aircraft, or that the fees are reasonably related to the intended level of noise impact mitigation.¹¹³

Post-ANCA, the United States Court of Appeals for the Second Circuit considered certain restrictions (including curfews) adopted by New York City's Economic Development Corporation on the use of a Manhattan heliport.¹¹⁴ The Court examined the restrictions under "the proprietor exception," which it noted, "allows municipalities to promulgate 'reasonable, nonarbitrary and non-discriminatory' regulations of noise and other environmental concerns at the local level."¹¹⁵ Under this standard, the Court allowed some of the restrictions and disallowed others.¹¹⁶ "[W]eekday and weekend curfews imposed should be upheld," the Court found, as "[t]he protection of the local residential community from undesirable heliport noise during

¹¹³ 14 CFR § 161.305(e)(2)(i)

¹¹⁴ Nat'l Helicopter Corp. of Am. v. City of New York, 137 F.3d 81 (2nd Cir. 1998).

¹¹⁵ Id. at 88 (quoting British Airways Bd. v. Port Auth. of N.Y. and N.J., 558 F.2d 75, 84 (2nd Cir. 1977))

¹¹⁶ Id. at 89-92.

sleeping hours is primarily a matter of local concern and for that reason falls within the proprietor exception.”¹¹⁷ Similarly, the Court upheld the elimination of weekend operations since that provision was “based on the City’s desire to protect area residents from significant noise intrusion during the weekend when most people are trying to rest and relax at home.”¹¹⁸ The Court also upheld a requirement that heliport operations be reduced by 47 percent, even though that percentage “was not backed by any study reflecting the appropriate scenario or demonstrating that such specific percentage of noise reduction was the ideal” because “the proprietor was entitled to eliminate a portion of the Heliport’s operations upon reaching a conclusion that a problem of excessive noise existed.”¹¹⁹

However, the continued validity of Nat’l Helicopter is questionable given a recently decided case in which the same court (United States Court of Appeals for the Second Circuit) held that, in order to claim the proprietor exception to federal preemption, public airport operators must follow ANCA’s procedural requirements.¹²⁰ This is true, the Court held, regardless of whether the airport accepts federal funds or not.¹²¹ Finding ANCA’s “procedures are mandatory and comprehensive,” the Court “further conclude[d] that local laws not enacted in compliance with them . . . are federally preempted.”¹²² Thus, the Court enjoined enforcement of three local laws¹²³ that codified “(1) a mandatory curfew on all aircraft traffic, (2) an ‘extended’ curfew for certain ‘noisy’ aircraft, and (3) a weekly one-round-trip limit on noisy aircraft.”¹²⁴

Finally, the Court in Friends of the E. Hampton Airport, Inc. rejected that a different result was mandated by Nat’l Helicopter, which “found certain of the challenged restrictions to fall within the proprietor exception—despite the City’s apparent failure to comply with ANCA procedures,” because “[f]irst, ‘a *sub silentio* holding is not binding precedent’” and “[s]econd,” because the court in Nat’l Helicopter understood the plaintiff “‘not [to] dispute the viability of the proprietor exception’” but “to argue that the exception did not apply because the City’s challenged actions were taken under its police power rather than its proprietary authority.”¹²⁵ “In resolving *that* dispute favorably to the City,” the Court in Friends of the E. Hampton Airport continued,

¹¹⁷ Id. at 89.

¹¹⁸ Id. at 90.

¹¹⁹ Id.

¹²⁰ Friends of the E. Hampton Airport, Inc. v. Town of E. Hampton, 841 F.3d 133, 136-137, 147-152 (2nd Cir. 2016)

¹²¹ Id.

¹²² Id. at 151-152.

¹²³ Id. at 152.

¹²⁴ Id. at 141.

¹²⁵ Friends of the E. Hampton Airport, Inc., 841 F.3d at 153 (quoting Getty Petroleum Corp. v. Bartco Corp., 858 F.2d 103, 113 (2nd Cir. 1988)(internal quotation marks omitted) and Nat’l Helicopter Corp. of Am., 137 F.3d at 89)

this court did not address whether and to what extent ANCA's procedural requirements cabined the reasonable exercise of a municipality's proprietary authority over airport noise, much less did it decide whether local restrictions imposed in the absence of ANCA procedures were federally preempted. Indeed, the court mentioned ANCA only in passing, at the end of a string cite comparing the ADA with other "acts implying preemption of noise regulation at airports." [citation omitted]

What the court did acknowledge, however, was that the role preserved for local airport proprietors in regulating noise levels is a "limited" one. [citation omitted] To the extent local restrictions must be "reasonable, nonarbitrary, and non-discriminatory," [citation omitted] nothing in National Helicopter suggests that an airport proprietor can satisfy these criteria if he fails to comply with mandated procedures of federal law—such as ANCA—for the enactment of such restrictions. To the contrary, actions taken in violation of legal mandates are, by their nature, unreasonable and arbitrary.¹²⁶

On June 26, 2017, the United States Supreme Court denied a petition for certiorari in Friends of the E. Hampton Airport, Inc.¹²⁷

In 2005, the United States Court of Appeals for the Ninth Circuit (i.e. the Court that has jurisdiction over Washington and the other West Coast states) also stated that ANCA “governs the manner in which individual airports may adopt noise restrictions on aircraft.”¹²⁸ Like the Second Circuit, the Ninth Circuit also noted that ANCA’s “requirement of FAA approval is not tied to grants; grants or not, no airport operator can impose a Stage 3 restriction unless the FAA gives its approval.”^{129 130}

With respect to the above referenced Second Circuit holding and Ninth Circuit statement that ANCA applies whether or not an airport received federal grant money, it should be noted that it is also the case that ANCA *prohibits* federal funding and the imposition of passenger facility charges if its procedures for regulations concerning noise or access restrictions on Stage 3 aircraft are not followed:

¹²⁶ Friends of the E. Hampton Airport, Inc., 841 F.3d at 153 (quoting Nat'l Helicopter Corp. of Am., 137 F.2d at 88 (internal quotation marks omitted)).

¹²⁷ Town of Hampton v. Friends of the E. Hampton Airport, Inc., 137 S. Ct. 2295 (2017).

¹²⁸ City of Naples Airport Auth. v. FAA, 409 F.3d 431, 433 (9th Cir. 2005).

¹²⁹ Id. at 434.

¹³⁰ This statement could be considered non-binding “dicta” since the case was actually about Stage 2 aircraft. On the other hand, this statement *was* part of the Court’s reasoning used to interpret ANCA’s provisions concerning Stage 2 aircraft, so an argument could possibly be made that it is binding. In any case, it would seem doubtful that the Ninth Circuit would contradict itself in a future case.

Grant limitations. . . . [A] sponsor of a facility operating under an airport noise or access restriction on the operation of stage 3 aircraft that first became effective after October 1, 1990, is eligible for a grant . . . and is eligible to impose a passenger facility charge . . . only if the restriction has been—

- (1) agreed to by the airport proprietor and aircraft operators;
- (2) approved by the Secretary [of Transportation] . . . ; or
- (3) rescinded.¹³¹

c. Conclusions

So where does all this leave us? In a coda to the litigation in the Town of East Hampton, New York the FAA recently (on March 26, 2018) upheld the town’s use of airport revenues in defense of its restrictions.¹³² But that was apparently the town’s only victory, since it has apparently now conceded, after losing all the substantive court battles

that the only route to implementing its designated restrictions, given the legislative program enacted by Congress, is to submit its chosen restrictions, either for unanimous approval by “all aircraft operators” at the airport [citation omitted] or by submitting them to FAA for approval [citation omitted] in accordance with FAA’s regulatory guidance set forth in FAA regulation, 14 C.F.R. Part 161.¹³³

As should be clear from the above recitation of just one section of C.F.R. Part 161, an application to the FAA to allow a restriction would be “both financially onerous and time consuming.”¹³⁴ Furthermore, it is unlikely to be successful. One source stated that “no such Part 161 submission has been approved by the Federal Aviation Administration (‘FAA’) in the 25 years that the regulation has existed.”¹³⁵ Another stated that “only one restriction was approved

¹³¹ 49 USC § 47524(e)

¹³² “FAA Supports the Right of Airport Sponsor to Use Airport Funds in Defense of Locally Enacted Noise Restrictions,” by Barbara E. Lichtman, Ph.D., J.D. (April 6, 2018); <https://www.aviationairportdevelopmentlaw.com/2018/04/articles/federal-aviation-administration-faa/faa-supports-the-right-of-airport-sponsor-to-use-airport-funds-in-defense-of-locally-enacted-noise-restrictions/#more-349>

¹³³ *Id.* (quoting and citing 49 U.S.C. § 47524(c)(1))

¹³⁴ “City of East Hampton May Be ‘A Day Late and a Dollar Short’ in Challenging the Airport Noise and Capacity Act” by Barbara E. Lichtman, Ph.D., J.D. (March 10, 2017); <https://www.aviationairportdevelopmentlaw.com/2017/03/articles/federal-aviation-administration-faa/city-of-east-hampton-may-be-a-day-late-and-a-dollar-short-in-challenging-the-airport-noise-and-capacity-act/#more-338>

¹³⁵ *Id.*

since 1991”¹³⁶ at a small airport in Florida.¹³⁷ This source also stated most airports spent 7 to 10 million dollars and were unsuccessful.¹³⁸ For instance, after eleven years of work (starting in 2004) and an expenditure of \$10,000,000, Los Angeles International Airport (LAX) completed a Part 161 submission three years ago, but the FAA denied LAX permission to enact the proposed restriction even though it would only have affected two percent of traffic.¹³⁹

Thus, it is unlikely that the Port of Seattle would be willing to go through a Part 161 submission without significant pressure. A complete curfew during night-time hours would thus only be possible under current law if “agreed to by the airport proprietor and all aircraft operators,”¹⁴⁰ which is also unlikely.

Lobbying for a change to federal law to allow airport proprietors to impose late-night curfews without an onerous FAA approval process would likely be a very long-term prospect and would require significant allies beyond the City of Federal Way or even the State of Washington.

d. Recommendations

In the short-term, the City of Federal Way should address the concerns with cargo flights, particularly during late-night hours, by:

1. Support for the Port’s efforts and pressure on the Port to intensify those efforts to get voluntary compliance from the most egregious offenders¹⁴¹
2. Pressure on the Port to see if some cargo flights could be voluntarily moved to other airports if feasible (such as Moses Lake or possibly even McChord Air Force Base).

¹³⁶ “Aircraft Noise 101” (May 22, 2018 Power Point Presentation by Steve Alverson of Environmental Science Associates (ESA) Sponsored by Port of Seattle for Members of Highline Forum and Sea-Tac Airport Stakeholders Roundtable (StART))) at Slide 20.

¹³⁷ Oral Presentation of Steve Alverson of Environmental Science Associates (ESA) at May 22, 2018 Presentation Sponsored by Port of Seattle for members of Highline Forum and Sea-Tac Airport Stakeholders Roundtable (StART).

¹³⁸ Id.

¹³⁹ Id.

¹⁴⁰ 49 USC § 47524(c)(1)

¹⁴¹ Minneapolis-St. Paul International Airport (MSP) “has a voluntary agreement with all scheduled airlines to not conduct nighttime operations from 2230 [10:30 PM] to 0600 [6:00 AM]. As part of the Noise Compatibility Plan, the MSP Signatory Airlines all agreed to use their ‘best efforts’ to limit nighttime activity to current levels.” “Minneapolis-St. Paul International Airport – Airport Curfews” found at <https://www.boeing.com/resources/boeingdotcom/commercial/noise/minneapolis.html>

3. Pressure on the Port to cease affirmatively marketing its 24-hour availability for cargo aircraft

The City of Federal Way should consider, if able to retain additional allies and if voluntary compliance proves impossible, pressure on the Port to go through a Part 161 submission, despite the obstacles outlined above.

V. OTHER HEALTH IMPACTS OF INCREASED AIR TRAFFIC

a. Airplane Pollution in General¹⁴²

Airplane pollution has been linked to respiratory-related issues.¹⁴³ In 2015, researchers collected and examined data from twelve of California's largest airports.¹⁴⁴ Health effects from pollution readings around the airports were measured using the California Emergency Department and Ambulatory Surgery data for emergency room visits and inpatient discharge data for overnight hospital admissions.¹⁴⁵ Daily admissions of all people with a diagnosis associated with respiratory illnesses were included.¹⁴⁶

The study found a large proportion of local air pollution is caused by congestion from airports.¹⁴⁷ In terms of the link between health and pollution, admissions for respiratory problems were strongly related to airplane emissions.¹⁴⁸ Pollution also increased admissions for chronic obstructive pulmonary disease (COPD) and heart problems.¹⁴⁹ Increases in pollution levels had a negative impact on the whole population, but greater effects were seen in children and the elderly.¹⁵⁰

b. Nitrogen Oxides

Nitrogen Oxides (NOx) affect the way we live and breathe and are being emitted at a much greater level by newer jet engines. Nitrogen Oxides (NOx) are "one of the main

¹⁴² The Task Force would like to acknowledge that this subsection is based almost exclusively on research and writing done by Former Task Force Member Kristin Yodock, Ph.D. She has not endorsed or approved this final product.

¹⁴³ "Airports, air pollution, and contemporaneous health" by W. Schlenker and W.R. Walker. The Review of Economic Studies, 83(2), 768-809. doi: 10.1093/restud/rdv043 (2015)

¹⁴⁴ Id.

¹⁴⁵ Id.

¹⁴⁶ Id.

¹⁴⁷ Id.

¹⁴⁸ Id.

¹⁴⁹ Id.

¹⁵⁰ Id.

ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems,” including “damage to lung tissue and reduction in lung function.”¹⁵¹ According to the United States General Accounting Office (GAO), “our estimate of emissions produced by the U.S. commercial aircraft fleet in 2001 indicates that the engines used on the newest Boeing 737 models, which are widely used for domestic flights, average over 40 percent more nitrogen oxides emissions during landings and takeoffs than the engines primarily used on older-model Boeing 737s.”¹⁵²

c. Ultra-Fine Particles (UFPs)

Ultra-fine particles (UFPs) are particles less than 100 nanometers in diameter.¹⁵³ The relationship of UFPs to air traffic and their effects on health is an emerging field of study. The number of studies on UFPs and airports appears to be gradually increasing from zero to three per year until 2013 to an average of over six studies per year since 2014.¹⁵⁴ The University of Washington School of Public Health is currently engaged in a study funded by the State Legislature in 2017 on the levels of UFPs in areas impacted by Sea-Tac International Airport.¹⁵⁵ “The study must attempt to distinguish between aircraft and other sources of ultrafine particulate matter, and must compare concentrations of ultrafine particulate matter in areas impacted by high volumes of air traffic with concentrations of ultrafine particulate matter in areas that are not impacted by high volumes of air traffic.”¹⁵⁶ It is due on December 1, 2019.¹⁵⁷ Former Quiet and Healthy Skies Chair John Resing is on the advisory committee for this study.

¹⁵¹ “NOx--How Nitrogen Oxides Affect the Way We Live And Breathe” (Published by the United States Environmental Protection Agency Office of Air Quality Planning and Standards EPA-456/F-98-005 September 1998) at pages 2-3; <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P10006ZO.TXT>

¹⁵² Aviation and the Environment—Strategic Framework Needed to Address Challenges Posed by Aircraft Emissions (Report by United States General Accounting Office (GAO) to the House of Representatives Chairman of Subcommittee on Aviation, Committee on Transportation and Infrastructure, GAO-03-252, February 2003) at page 4; <https://www.gao.gov/assets/240/237430.pdf>

¹⁵³ “Ultrafine Particles Near Airports” by Dr. Tim Larson and Dr. Edmund Seto (Power Point Presented at November 15, 2017 meeting of Highline Forum in Tukwila, Washington) at Slide 5. A nanometer is one-billionth of a meter.

¹⁵⁴ “Ultrafine Particles Near Airports” by Dr. Tim Larson and Dr. Edmund Seto (Power Point Presented at March 28, 2018 meeting of Highline Forum in Federal Way City Hall) at Slide 7.

¹⁵⁵ Id. at Slides 2 and 12.

¹⁵⁶ Budget Proviso contained in Washington State Operating Budget passed by the State Legislature in 2017.

¹⁵⁷ Id.

A similar study was released on August 4, 2016 with respect to Logan International Airport in Boston, Massachusetts.¹⁵⁸ That study found that “aviation impacts on PNC [ultrafine particle number concentrations] extend many kilometers downwind of Logan airport,” that “PNCs were positively correlated with flight activity,” and that “when winds were from the direction of the airport, PNCs increased with increasing wind speed, suggesting that buoyant aircraft exhaust plumes were the likely source.”¹⁵⁹ The study concluded that “PNC exposure assessment studies [need] to take aircraft emissions into consideration, particularly in populated areas near airports.”¹⁶⁰

The University of Washington study is not a study on the health effects of UFPs.¹⁶¹ Prior studies on health effects of UFPs were “limited largely to roadway traffic studies” but suggested “associations with cardiovascular, respiratory, and possibly cancer health effects.”¹⁶² For instance:

- A California study released in 2015 found a “[p]ositive association . . . between UFP and ischemic heart disease mortality, but not respiratory mortality (including lung cancer).”¹⁶³
- A Canadian study released in 2017 found a “[p]ositive association . . . between UFP and incident Chronic Obstructive Pulmonary Disease (COPD), but not asthma or lung cancer.”¹⁶⁴ The abstract for this study stated that “[l]ittle is known about the long-term health effects of ambient ultrafine particles. . . including their association with respiratory disease.”¹⁶⁵

¹⁵⁸ “Aviation Emissions Impact Ambient Ultrafine Particle Concentrations in the Greater Boston Area” by N. Hudda, M. C. Simon, W. Zamore, D. Brugge, and J.L. Durant (*Environ. Sci. Technology*, 2016, 50 (16), pp 8514-8521); <https://pubs.acs.org/doi/full/10.1021/acs.est.6b01815> Former Task Force member Kristin Yodock, Ph.D. provided this reference.

¹⁵⁹ Abstract of Id.; <https://pubs.acs.org/doi/full/10.1021/acs.est.6b01815>

¹⁶⁰ Id.

¹⁶¹ “Ultrafine Particles Near Airports” (March 28, 2018) at Slide 12.

¹⁶² Id. at Slide 13.

¹⁶³ “Ultrafine Particles Near Airports” (November 15, 2017) at Slide 25.

¹⁶⁴ Id. at Slide 26.

¹⁶⁵ Id. (quoting Abstract of “Long-term exposure to ambient ultrafine particles and respiratory disease incidence in [sic] Toronto, Canada: a cohort study” by Scott Weichenthal, Li Bai, Marianne Hatzopoulou, Keith Van Ryswyk, Jeffrey C. Kwong, Michael Jerrett, Aaron van Donkelaar, Randall V. Martin, Richard T. Burnett, Hong Lu, and Hong Chen (*Environmental Health* (2017) 16:64))

- Another Canadian study released in 2017 found a “[p]ositive association . . . between UFP and prostate cancer.”¹⁶⁶ The abstract for this study stated as “[b]ackground” that “epidemiological studies ha[d] yet to evaluate the relationship between UFPs and cancer incidence.”¹⁶⁷
- Another Canadian study released in 2017 found a “[w]eak, non-significant association between UFP and breast cancer.”¹⁶⁸

Other recent studies have “[s]uggest[ed] [a]cute [h]ealth [e]ffects in [s]usceptible [p]opulations.”¹⁶⁹ For instance:

- A North Carolina study released in 2014 found that “[c]ontrolled [e]xposure of [h]umans with [m]etabolic [s]yndrome to [c]oncentrated [u]ltrafine [a]mbient [p]articulate [m]atter [c]auses [c]ardiovascular [e]ffects.”¹⁷⁰
- A study released in 2015 found that in diabetic individuals, “[e]levated particle number concentrations induce immediate changes in heart rate variability.”¹⁷¹

Finally, the only *airport*-related study on the health effects of UFPs known to the scientists working on the University of Washington study was “conducted in Los Angeles on a group of asthmatic adults” and “observed an increase in inflammatory blood markers and a reduction in lung function with short-term exposures.”¹⁷²

In 2017, Congressman Adam Smith introduced a bill that would have required the FAA to

¹⁶⁶ Id. at Slide 27.

¹⁶⁷ Id. (quoting Abstract of “Spatial variations in ambient ultrafine particle concentrations and the risk of incident prostate cancer: A case-control study” by Scott Weichenthal, Eric Lavigne, Marie-France Valois, Marianne Hatzopoulou, Keith Van Ryswyk, Maryam Shekarrizfard, Paul J. Villeneuve, Mark S. Goldberg, and Marie-Elise Parent (Environmental Research 156 (2017) 374-380))

¹⁶⁸ Id. at Slide 28.

¹⁶⁹ Id. at Slide 30.

¹⁷⁰ Id. (quoting “Controlled Exposure of Humans with Metabolic Syndrome to Concentrated Ultrafine Ambient Particulate Matter Causes Cardiovascular Effects” by Robert B. Devlin, Candice B. Smith, Michael T. Schmitt, Ana G. Rappold, Alan Hinderliter, Don Graff, and Martha Sue Carraway (Toxicological Sciences 140(1), 61-72 2014))

¹⁷¹ Id. (quoting “Elevated particle number concentrations induce immediate changes in heart rate variability: a panel study in individuals with impaired glucose metabolism or diabetes” by Annette Peters, Regina Hampel, Josef Cyrus, Susanne Breitner, Uta Gerschkat, Ute Kraus, Wojciech Zareba, and Alexandra Schneider (Particle and Fiber Toxicology (2015) 12:7))

¹⁷² “Ultrafine Particles Near Airports” (March 28, 2018) at Slide 13.

conduct a study that—

- (1) includes a review of the results of previous studies on ultrafine particles in the air, including the health impacts of such particles;
- (2) for each of the 20 largest airports in the United States . . . analyzes and evaluates with respect to the communities surrounding, near, and impacted by airport-generated air traffic—
 - (A) the ultrafine particles present in the air;
 - (B) the characteristics of such particles;
 - (C) the spatial distribution patterns and concentration of such particles;
 - (D) the primary sources of such particles;
 - (E) the contributions made by aircraft to such particles relative to other primary sources;
 - (F) the health impacts of such particles, including with respect to heart and lung diseases, asthma rates, nervous system disorders, and any other impacts observed in or suggested by previous studies reviewed under paragraph (1); and
 - (G) disproportionate rates of exposure, risks, and other negative impacts on communities of color, economically insecure residents, vulnerable groups, and disparately impacted communities; and
- (3) analyze the impacts of mitigation options, emission reductions, and the increased use of aviation biofuels with, or in place of, commonly used petroleum-based aviation fuels on—
 - (A) ultrafine particles in the air surrounding airports; and
 - (B) human health.¹⁷³

This bill has not moved forward in the current Congress, but Congressman Smith will introduce it again in the next Congress if necessary.

¹⁷³ Bill introduced by Congressman Adam Smith (D-WA) on October 19, 2017. On September 21, 2017, Congressman Smith met with City of Federal Way Mayor Jim Ferrell and John Resing, then Chair of the Mayor's Quiet and Healthy Skies Task Force, about this bill. Congressman Smith included at least one change to the bill requested by Mayor Ferrell and Mr. Resing in the bill's final version.

Also, the State of Washington budget proviso funding the University of Washington study on ultrafine particles mandates that at its conclusion, “the university must report study findings, including any gaps and uncertainties in health information associated with ultrafine particulate matter, and recommend to the legislature whether sufficient information is available to proceed with a second phase of the study.”¹⁷⁴ This “second phase” will be on the health effects of UFPs.¹⁷⁵ In a March 20, 2018 meeting with residents of the Marine Hills neighborhood, State Rep. Mike Pellicciotti stated that he intended to introduce a bill to fund this “second phase” in the next legislative session.

Despite the emerging evidence, there do not (yet) appear to be any official environmental standards with respect to UFPs.¹⁷⁶ In a presentation to the Highline Forum, Port of Seattle Aviation Environmental Sustainability Manager Leslie Stanton stated that the existing standards are for “fine” particles that are still small, but larger than ultrafine particles.¹⁷⁷ Fine particles are under 2.5 microns (millionths of meters) in diameter.¹⁷⁸

Stanton confirmed that “UFP studies from L[os] A[ngeles], Atlanta and other airports show UFPs from airports.”¹⁷⁹ While she claimed that there is “[n]o clear connection between exposure levels [of UFPs] and adverse health impacts,” she mentioned that “UFPs penetrate deep into the lungs” and that the “[e]merging literature suggests health impacts similar to PM 2.5 [fine particulate matter],” which is regulated and has been found to “[c]ause direct adverse health effects in humans.”¹⁸⁰ Finally, she stated that the Port is using “[e]xisting studies,” “[t]racking emerging science [of] Ultrafine particulates (UFPs),” and “[s]trongly support[ing] additional research into exposures and health impacts of UFPs,” including the University of Washington study.¹⁸¹

¹⁷⁴ Budget Proviso contained in Washington State Operating Budget passed by the State Legislature in 2017.

¹⁷⁵ Confirmed in person to Senior Policy Advisor Yarden Weidenfeld by Port of Seattle Capital Project Delivery Director Clare Gallagher on July 16, 2018.

¹⁷⁶ See, e.g., “EPA will consider whether to propose ultrafine particle air quality standard” by Baker & Hostetler LLP – Justin J. Schwab (April 27, 2014) stating that “[r]ecent comments by EPA officials suggest that the agency will consider whether it should, **for the first time**, set a standard for ‘ultrafine’ particles when it reviews its particulate matter national ambient air quality standard (‘NAAQS’) under the Clean Air Act” (emphasis added); <https://www.lexology.com/library/detail.aspx?g=901ed86c-2932-4852-8aa8-7df0b5b69152>

¹⁷⁷ Oral Presentation of Port of Seattle Aviation Environmental Sustainability Manager Leslie Stanton at July 26, 2017 meeting of Highline Forum at Seatac City Hall.

¹⁷⁸ “Ultrafine Particles Near Airports” (November 15, 2017) at Slide 5.

¹⁷⁹ Oral Presentation of Port of Seattle Aviation Environmental Sustainability Manager at July 26, 2017 meeting of Highline Forum at Seatac City Hall (quoting “Air Quality Initiatives at Sea-Tac Airport” by Stanton (Power Point presentation) at Slide 12)

¹⁸⁰ Id. (quoting “Air Quality Initiatives at Sea-Tac Airport” at Slides 5 and 12)

¹⁸¹ Id. (quoting “Air Quality Initiatives at Sea-Tac Airport” at Slides 3 and 16)

d. Recommendations

So where does that leave us? At this point, the following are the recommendations for the City of Federal Way:

1. Once the current University of Washington study on the levels of UFPs in areas impacted by Sea-Tac International Airport is completed, support the “second phase” of that study on the health effects of such UFPs.
2. Re-engage with Congressman Adam Smith to support his continued efforts to get passed a bill that would mandate a federal study on the health effects of UFPs.
3. Encourage Port of Seattle officials to continue supporting additional research into the relationship between UFPs and aircraft and into the health effects of UFPs.
4. Ensure that scoping on the Sustainable Airport Master Plan (SAMP) includes an examination of UFPs (as well as other emissions/pollution, general health and quality of life issues) and the need for mitigation of such through, for example, increased use of biofuels. In support of this recommendation, the following points must be made:
 - a. In her July 26, 2017 presentation to the Highline Forum, Port of Seattle Aviation Environmental Sustainability Manager Leslie Stanton noted that “[p]ublished research since 2015 shows *significant reductions in PM [particulate matter] from aviation biofuels*” and that the Port intended to “[c]ontinue to track research on PM reductions from biofuels.”¹⁸² She also stated that between 2008 and 2014, the Port [s]upport[ed] research & development” on biofuels and “[c]hart[ed] a path to commercial scale biofuels”.¹⁸³ Between 2015 and the present, she said that the Port has “[i]ncentivize[d] biofuel production in WA[shington].”¹⁸⁴
 - b. In a summer 2017 conversation that City of Federal Way Senior Policy Advisor Yarden F. Weidenfeld had with a Port of Seattle official, Weidenfeld was specifically told, without prompting, that ultra-fine particles (UFPs) could be an item of interest offered by the City of Federal Way during the scoping process.
 - c. Although there do not appear to be environmental health official standards on UFPs, that does not necessarily preclude an examination of their prevalence, potential harm, and mitigation. This should be done through analysis in the SAMP Environmental Impact Statement (EIS). As an example, as noted

¹⁸² Id. (quoting “Air Quality Initiatives at Sea-Tac Airport” at Slides 15 and 16)

¹⁸³ Id. (quoting “Air Quality Initiatives at Sea-Tac Airport” at Slide 11)

¹⁸⁴ Id.

above, the United States Court of Appeals for the Second Circuit once upheld a requirement that heliport operations be reduced by 47 percent, even though that percentage “was not backed by any study reflecting the appropriate scenario or demonstrating that such specific percentage of noise reduction was the ideal” because “the proprietor was entitled to eliminate a portion of the Heliport's operations upon reaching a conclusion that a problem of excessive noise existed.”¹⁸⁵

VI. ENVIRONMENTAL REVIEW OF SUSTAINABLE AIRPORT MASTER PLAN (SAMP)

a. Introduction and Section Overview

In June 2018 the Port of Seattle publicly released an updated, final version of its latest long-range airport development plan, called the Sustainable Airport Master Plan (SAMP).¹⁸⁶ The purpose of this planning document, which the Federal Aviation Administration (FAA) requested to be prepared and grant-funded, is to identify additional airport facilities and airspace needed to accommodate its forecast of “unconstrained” passenger and air cargo demand at Sea-Tac International Airport (Sea-Tac) over the next twenty years. The final SAMP projects an increase in annual passengers handled from 46.9 million last year, to 56 million by 2027, and further increasing to 66 million by 2034.

To accommodate that forecasted passenger growth in the near-term, within flight operation delay time-frames acceptable to the FAA, the SAMP proposes construction of a second passenger terminal containing nineteen gates, taxiway extensions, additional air cargo facilities, and approximately thirty other infrastructure projects to be completed in nine years.

Before the Port of Seattle can consider approval and begin to implement the improvement projects proposed in the SAMP, their impact on human health and the environment must be analyzed under applicable federal and state laws. Due to the potential significant impact of these thirty so-called near-term projects, Port staff announced a 60-day public “scoping” period for preparation of a detailed SAMP draft environmental impact statement (EIS) that will commence on July 30, 2018. Port staff further estimated that the entire EIS process will take 18 months to

¹⁸⁵ Nat'l Helicopter Corp. of Am. v. City of New York, 137 F.3d 81, 90 (2nd Cir. 1998)

¹⁸⁶ Per February 4, 2018 SAMP Update Memorandum prepared by Port of Seattle staff for February 13, 2018 Port Commission Special Meeting, the final SAMP document was supposed to have been publicly released in April 2018. Subsequently, Port environmental staff advised the City of Federal Way Mayor's office that the SAMP planning process would end (and, presumably, the actual SAMP document would be released) once the Federal Aviation Administration (FAA) informally “signed off” on its adequacy. Thereafter, Port staff advised that they expected to issue a State Environmental Policy Act (SEPA) “threshold determination” that full environmental review is required, and that the 30-day-minimum SEPA/NEPA (National Environmental Policy Act) public “scoping period” on key issues to be analyzed in the draft Environmental Impact Statement (EIS) would begin. On May 30, 2018, the Port held the first of three scheduled public open house meetings to present a “high level” overview of the final SAMP document and SEPA/NEPA scoping process, with the EIS scoping period expected to begin on July 30, 2018.

complete.¹⁸⁷ Importantly, as will be discussed in a later subsection, the SAMP's long-term vision declares as "not ripe" for current environmental analysis the more than twenty *additional* Sea-Tac infrastructure improvement projects allegedly required to accommodate the 66 million per year unconstrained passenger forecast by 2034 within the FAA's acceptable operational delay standard for aircraft movement.

For many years, Federal Way residents have expressed quality-of-life concerns about Sea-Tac's overflight impacts. Residents are especially aggrieved by a perceived betrayal by the Port over its declared purpose in creating a third runway ten years ago. More recently, Federal Way residents have been vocal about the *greater than one-third increase in aircraft overflights during just the past three years* and constant use of the third runway that the Port promised was for use only during inclement weather. Previous release of the proposed SAMP has raised Federal Way residents' fears even more over even greater noise and health impacts in future years, as the SAMP document lays out plans to maximize operational capacity of Sea-Tac on a 24/7 basis.

Thus, it is absolutely essential that the City of Federal Way proactively and assertively use all means at its disposal to hold the Port to a complete, objective and thorough environmental review process of its final, proposed SAMP. This means that the Port should be required to include full and meaningful mitigation of noise and health impacts on Federal Way residents from any projects that follow approval of the SAMP.

In short, this time, the City of Federal Way needs to not just "play the game" by the Port's and FAA's customary environmental impact analysis standards in drafting of the SAMP EIS. Instead, the City should seek changes to those standards, in order to more reasonably balance the Port's ultimate policy decision on the SAMP so as to ensure airport-impacted Federal Way residents are fairly treated in that process.

This section of the Task Force report will briefly summarize the decision-making process for impacts analysis required by Washington's State Environmental Policy Act (SEPA) and the federal National Environmental Policy Act (NEPA). It will also describe the controversial decision-making history, flawed environmental impacts analysis and "lessons learned" in connection with the Port's Sea-Tac Third Runway Project in the 1990s. Those highlights will show that the Port (and its FAA partner) failed to conduct a fair and impartial SEPA/NEPA analysis and did not even consider mitigating the Project's significant impacts on Federal Way residents. Finally, this section of the report will make specific recommendations the City should pursue to ensure that the final SAMP, and the near- and long-term projects identified therein, are properly analyzed and fully mitigated through the SEPA process that the Port is legally obligated to follow. It will also recommend various other avenues the City should pursue in seeking alternatives to Sea-Tac being the only regional airport accommodating future passenger and air cargo growth.

¹⁸⁷ Although not in the final SAMP, Port staff estimated the total cost of proposed projects in a previous SAMP version at \$15 billion.

b. The SEPA and NEPA Environmental Impact Review Process

Under the Washington State Environmental Policy Act (SEPA)¹⁸⁸ and its implementing rules,¹⁸⁹ every state agency and local government (e.g. Port of Seattle) acting as the SEPA “lead agency” must subject every “project proposal” (e.g. airport terminal building) or “non-project proposal” (e.g. airport master development plan) to an analysis of its potential impact on human health and the natural environment *before* such project or plan is approved by the responsible state or local governmental entity. SEPA allows a public entity to be lead agency on its own project and lays out a stepwise process for the lead agency to determine the type or level of environmental analysis that all proposed projects and plans should receive.¹⁹⁰

A key step in that process is the agency’s “threshold determination” in initially evaluating the project or plan, i.e. whether or not a project or plan could result in one or more significant environmental impacts.¹⁹¹ If so, the next step is to determine if those impacts can be reduced or mitigated to a level of “insignificance” and, if so, a Determination of Non-Significance (DNS) is prepared. If the identified impacts *cannot* be mitigated, then the lead agency must prepare an Environmental Impact Statement (EIS) that fully and objectively analyzes the potential impacts of the project or plan on specified elements of the natural environment and human health (e.g. noise, health hazards, air and water quality). The EIS process must: 1) assess short- and long-term, direct and indirect, and cumulative environmental impacts; 2) identify and analyze “no-action” and other feasible alternatives to the proposed project; 3) include opportunities for comment by the public; and 4) propose actions or measures to mitigate environmental impacts to a level of insignificance, where possible. Courts have interpreted SEPA as not requiring an EIS to identify mitigations for *every* adverse impact, and a lead agency may use its “substantive authority” to approve a project or plan in that circumstance.

Congress passed the National Environmental Policy Act (NEPA) to ensure that the FAA and all other federal agencies evaluate the likely environmental consequences of a project or proposal before approving a federal permit or grant funds to a state or local agency. In general, NEPA requires all federal agencies to prepare an Environmental Assessment (EA), followed by a Finding of Non-Significant Impact (FONSI), if the project’s potential adverse impacts are deemed insignificant (on a national scale), or an EIS if they are deemed potentially significant. For the latter, NEPA’s full environmental analysis process is similar to SEPA. NEPA encourages integration of federal environmental impact review with a state or local government’s own environmental analysis. For example, on the Third Runway Project, the Port and FAA acted as co-lead agencies, and prepared a combined EIS under both SEPA and NEPA. SEPA allows a

¹⁸⁸ RCW Chapter 43.21C

¹⁸⁹ WAC Chapter 197-11

¹⁹⁰ See simplified diagram of that decision-making process in Exhibit A.

¹⁹¹ For purposes of making the threshold determination, SEPA defines “significant” as “a reasonable likelihood of more than a moderate adverse impact on environment quality,” while noting that “[s]ignificance involves context and intensity . . . and does not lend itself to a formula or quantifiable test. The context may vary with the physical setting. Intensity depends on the magnitude and duration of an impact.” WAC 197-11-794 (1), (2).

state agency or local government to use an EIS or other NEPA documents, under certain circumstances, to meet its state environmental review requirements.¹⁹²

c. **Short History of the Controversial Sea-Tac Third Runway Project**¹⁹³

In the late 1980s, regional planners, the Port, and the FAA concluded that Sea-Tac could reach its maximum operational capacity as early as the year 2000 and would need to add a third runway for bad-weather operations. During the early 1990s, the Puget Sound Regional Council (PSRC) conducted a “flight plan study” to analyze various alternatives to meet future airport capacity requirements within the Puget Sound region. Alternatives studied included the feasibility of a passenger “bullet” train to link Sea-Tac to the existing Moses Lake airfield and adding commercial operations at Paine Field and McChord AFB.

Despite receiving opposition from communities and municipalities around Sea-Tac and Paine Field, the PSRC concluded in a 1993 report (and accompanying EIS) that future airport capacity needs would best be met by adding a “bad weather-dependent” third runway to Sea-Tac, adding passenger facilities at Paine Field, and constructing a new “supplemental airport” in Pierce or Thurston County. Through one of three expert panels it mandated to oversee its decision, the PSRC’s subsequent review of potential sites for a supplemental airport ended without success.

Because of major controversy regarding the PSRC’s initial conclusions, the State Legislature passed a two-year moratorium on Sea-Tac expansion and directed the Washington Air Transportation Commission (AIRTRAC) to review Puget Sound’s future airport capacity needs on a statewide basis. AIRTRAC found that the proposed Sea-Tac third runway alone would be inadequate for meeting that future need. However, AIRTRAC was unable to find feasible alternatives. The state’s moratorium ended in 1994 without further action.

Anticipating the ultimate outcome of the regional and state decision-making processes described above, the Port Commission decided in 1992 to begin moving forward with planning the proposed third runway project by preparing a Sea-Tac Master Plan Update and accompanying EIS. The Port attempted to mollify community concerns over the proposed third runway by forming a Technical Advisory Committee (TAC) of local officials and planners. Among several groups that organized to fight the proposed third runway, the newly-formed Airport Communities Coalition (ACC) decided to participate in the Port’s TAC. The ACC was comprised of the Cities of Burien, Des Moines, Federal Way, Normandy Park, SeaTac and Tukwila, plus the Highline School District.

After receiving extensive public comments and concerns from local community groups and the ACC on a jointly-prepared draft EIS (DEIS) that analyzed environmental impacts of the proposed third runway project, the Port and FAA approved a final EIS (FEIS) on the project in February 1996. Despite the project needing to acquire about 400 homes, to extend the airport

¹⁹² WAC 197-11-610

¹⁹³ This section, in part, summarizes a 2003 detailed essay on this highly controversial project, entitled “Sea-Tac International Airport: Third Runway Project” by Walt Crowley. See <http://www.historylink.org/File/4211>

plateau into a wetlands area on top of 17 million cubic yards of fill earth, and to construct retaining walls averaging as high as 74 feet, the FEIS concluded that all of its short- and long-term impacts could be fully mitigated through sensitive design and wetlands mitigation.

The next month, a second, PSRC-mandated expert panel concluded that the FEIS “had not shown a reduction in real, on-the-ground noise impacts sufficient to meet the noise reduction condition” in the PSRC’s 1993 contingent approval action. Despite the panel’s conclusion, the PSRC decided noise impacts were sufficiently mitigated and officially added the third runway project to the federally-mandated Regional Transportation Plan (which qualified it for future federal funding) in July 1996.

The next month, the Port approved the FEIS, adopted the updated Airport Master Plan, and authorized final design, permitting, and property acquisition for an 8,500-foot third runway to be located 1,700 feet westerly of the closest of the two existing runways.¹⁹⁴

d. City of Federal Way’s Involvement in Opposing the Third Runway and its Flawed EIS

During public comment received on the draft EIS (DEIS) for the Master Plan Update and its proposed third runway project, former Federal Way City Council members Jack Dovey, Hope Elder, Mary Gates and Skip Priest submitted written and oral testimony. Among key points made in the Council Members’ comments were the fact that there was “not one word” in the DEIS regarding the adverse impacts of the proposed third runway on Federal Way residents, including additional noise, health impacts, increased traffic congestion, and decline in property values. In fact, their testimony noted that the geographic area around Sea-Tac that was analyzed in the DEIS for noise totally excluded Federal Way.¹⁹⁵

Following the Port’s and FAA’s 1996 approval of the final EIS (FEIS), the City of Federal Way and the other member entities in the Airport Communities Coalition (ACC) retained a Washington, DC law firm to file suit against the Third Runway Project. According to recent comments to a Task Force member by then-City Attorney Londi Lindell, the lawsuit resulted in the Port and FAA deciding to prepare a supplemental EIS (SEIS), on which additional

¹⁹⁴ This FEIS was jointly prepared by the Port and FAA, in order to meet their respective obligations to analyze the environmental impacts of the updated Airport Master Plan’s proposed third runway project, under state SEPA and federal NEPA requirements.

¹⁹⁵ The DEIS analyzed estimated noise impacts resulting from the third runway project only within the parabola-shaped boundary of the Port’s existing FAA-approved “Part 150” noise abatement area (mostly in central Burien, surrounding Sea-Tac). Part 150 refers to the federal regulation implementing the Aviation Safety and Noise Abatement Act of 1979, under which the FAA provides grants to local airports for residential sound insulation and property acquisition within the designated noise abatement area. Part 150 planning involves use of an arbitrary and outdated standard for determining geographic areas within which noise in homes and sensitive public buildings (e.g. schools) is determined to be at levels “incompatible” with nearby airports. The Part 150 standard, called “65 Day-Night Average Sound Level” (or DNL) (also discussed in **Section IIIi** above), averages noise over 24 hours from aircraft overflights, other sources like cars, *and even quiet periods*. Thus, use of this arbitrary Part 150 standard excluded all areas in Federal Way where actual noise levels from low-flying aircraft far exceeded 65 decibels. This standard remains in use by the Port and FAA today.

public comments were solicited. Lindell recalls that the only tangible outcome of the lawsuit was additional noise and insulation mitigation for schools in the Highline School District. According to Lindell, most of the ACC jurisdictions ultimately withdrew from the lawsuit, suffering from “funding fatigue” over the fact that the Port and FAA were unwilling to consider further project mitigations.¹⁹⁶

Lindell further recalled that members of the Federal Way City Council were equally frustrated. Nevertheless, the Council decided to support community residents who would be impacted by the third runway by “going down fighting” and staying in the lawsuit until its ultimate dismissal by the court, which followed Port and FAA approval of the SEIS in May 1997. Lindell recalls that the City of Federal Way share of funding for the lawsuit was approximately \$100,000.

e. Lessons Learned from Unsuccessful Opposition to the Third Runway Project

A century ago, iconic college football coach Knute Rockne famously said, “Build up your weaknesses until they become your strong points.” Similarly, from our review of the standard, reaction-based approach that local cities and residents took in opposing the Sea-Tac Third Runway Project, the Task Force firmly believes that the City of Federal Way needs to develop a proactive, non-traditional strategy for successfully engaging the Port and FAA in their future decision-making processes on Sea-Tac expansion plans. Our close examination of the Third Runway FEIS official record provides useful insights for predicting noise, health and other environmental impacts on Federal Way residents that the upcoming SAMP draft EIS may be unlikely to fairly and fully analyze as it relates to our city. To illustrate this point, here are some key passages in Airport Communities Coalition comments submitted on the third runway Final EIS (FEIS) and draft Supplemental EIS (DSEIS) that relate directly to Federal Way’s noise/health impact concerns:

- Regarding the written comment submitted that the FEIS fails to analyze the impact of aircraft particulates, the FEIS written response states that “detailed consideration was given to particulate emissions, as measured by PM10 [particulate matter 10 microns in diameter or smaller¹⁹⁷], from construction activities. . . . The FAA and EPA have not updated the particulate data because no reliable data on aircraft particulate emissions is available to incorporate into the [air quality] model [used in FEIS].”¹⁹⁸
- The FEIS contains contradictory statements regarding the Port’s proposed use of the third runway (allegedly to prevent aircraft landing delays during inclement weather due to inadequate runway separation between existing runways). Based on a quoted letter from “Mr. Wall of the FAA,” ““dual arrival streams will be used whenever the volume of

¹⁹⁶ The City of Seatac settled with the Port by entering into a separately negotiated interlocal agreement in 1997 that contained airport expansion mitigations and concessions for that city.

¹⁹⁷ Definition from “Particulate Matter (PM10) Trends—National Trends in PM10 Levels” (published by United States Environmental Protection Agency) at <https://www.epa.gov/air-trends/particulate-matter-pm10-trends>

¹⁹⁸ Response to Comments on FEIS at page F-78

[aircraft] traffic dictates this. This will be true in nearly all weather conditions.”¹⁹⁹ But “Mr. Wall of the FAA” is also quoted as stating that “. . . for the purpose of environmental analyses and cost/benefit studies, certain assumptions were developed and used [i.e., in FEIS]. Those assumptions reflect our opinion on how Sea-Tac will operate with three runways.”²⁰⁰ Thus, it appears that for purposes of the FEIS analysis, it was assumed that the third runway would only operate during inclement weather, even though Mr. Wall’s letter states that “dual arrival streams” (i.e. the first and third runways used for simultaneous landings) will occur whenever the FAA control tower decides the volume of aircraft traffic so dictates.

- A comment on the DSEIS includes the observations that the DSEIS “only depicts noise contours for approximately 474,000 [annual aircraft] operations” and that “it would be more relevant to compare [then current] 1997 noise contours with the noise contours associated with 630,000 annual operations – the maximum capacity of the proposed Airport expansion [in the Master Plan Update]. Such a comparison would expose the fallacy of the DSEIS’ assertion that future noise exposure would be less than current operations.”²⁰¹

The above-quoted comments and responses related to the Third Runway EIS clearly show the biased and inadequate environmental impact analysis conducted by the Port and FAA. Although its future impacts were analyzed assuming inclement weather use only, the Third Runway Project was environmentally “cleared” without operational restriction. Due to passenger demand in the ensuing years and lack of identified mitigations for the additional noise and health effects from unfettered third runway usage, the City of Federal Way and its impacted residents have learned a painful lesson having “played by the rules” during the Port’s and FAA’s joint environmental impact process.

f. **Initial Review of Final Sea-Tac Sustainable Airport Master Plan**

Port staff publicly summarized and announced the release of the final SAMP on May 30, 2018. This document appears to consist of an Executive Summary and nine Technical Memoranda, all of which are available on the following Port webpage (except for an “Airport Layout Plan” that the FAA apparently has not yet approved):
<https://www.portseattle.org/plans/sustainable-airport-master-plan-samp>.

Sea-Tac reported a total of 412,170 aircraft operations²⁰² (all departing and arriving commercial, cargo, general aviation, and military flights) during 2016, a one-third increase in its reported totals over the three previous years. SAMP documents show a 7.4% increase in total

¹⁹⁹ Id. at page F-106

²⁰⁰ Id.

²⁰¹ Comments on DSEIS at page G-397

²⁰² “Noise Programs & NextGen Briefing” (Port of Seattle Power Point Presentation at May 24, 2017 meeting of Highline Forum held in Sea-Tac International Airport Conference Center) at Slide 4.

operations from 2013 to 2014, which seems consistent with the actual growth trend during this three-year period.²⁰³ However, the SAMP forecasts a significant drop in the annual percentage growth of future annual aircraft operations and is surprisingly outdated by showing 2014 as the last “historical” year: 3.2% from 2014 to 2019; 2.4% 2019-2024; 2.1% 2024- 2029; and 1.7% 2029-2034.²⁰⁴ This aircraft growth rate drop-off is explained by increased load rates (i.e. average percentage of commercial aircraft seats that are occupied) and larger planes. However, the forecasts contain acknowledgments that “[i]nvariably, some of the assumptions . . . will not be realized” and that “there are likely to be differences between the forecast and actual results, and those differences may be material.”²⁰⁵ Since forecasted flight activity will be a key factor for many aspects of the SAMP EIS, an underestimated growth forecast would result in under-analyzed environmental impacts of its proposed projects. This fear is magnified by the fact that the SAMP projections show 398,210 operations in 2019, a number that, as indicated above, was *already* exceeded in 2016!²⁰⁶

The SAMP documents identify the environmental impact categories to be analyzed in the draft EIS, including air quality and noise, prior to the Port undertaking proposed construction of a new terminal and its other near-term improvement projects needed to meet 2027 forecasted demand.²⁰⁷ Ominously, however, the SAMP goes on to state that Sea-Tac currently meets federal, state and regional air quality standards for fine particulates (PM 2.5),²⁰⁸ despite aircraft engines currently pumping 13 tons of PM 2.5 into the air each year. It also fails to mention the state-funded University of Washington Environmental Health Department study currently underway to inventory ultra-fine particulates (UFPs) that continually fall on tens of thousands of Federal Way and other residents in the FAA’s “sacrificial” flight corridor for Sea-Tac.

Equally ominous but expected, is the SAMP’s reference only to noise impact mitigation defined by the 65-decibel day-night noise (DNL) exposure standard used to determine the latest Part 150 Noise Compatibility study area boundary, despite its acknowledgment that a subsequent noise impact analysis in 2016 prepared for the SAMP showed the impacted area being larger than the Part 150 study boundary due to “growth in aircraft activity occurring notably faster than predicted [in that study].”²⁰⁹

Finally, and most significantly, the SAMP documents state that the Sea-Tac airfield/airspace system has “insufficient capacity to meet the unconstrained 20-year forecast

²⁰³ “Forecasts of Aviation Activity” (Technical Memorandum No. 4 at Page 6-24 (Table 6-8))

²⁰⁴ Id.

²⁰⁵ Id.

²⁰⁶ Id.; “Noise Programs & NextGen Briefing” (Port of Seattle Power Point Presentation at May 24, 2017 meeting of Highline Forum held in Sea-Tac International Airport Conference Center) at Slide 4.

²⁰⁷ “Environmental Overview” (Technical Memorandum No. 8)

²⁰⁸ Id. at Page 2-1

²⁰⁹ Id. at Page 2-12.

demand.”²¹⁰ The documents do contain a Long-Term Vision that would satisfy the SAMP 2034 forecasted demand by describing an operationally efficient airport layout, which would be achieved by twenty specific airport expansion and redevelopment improvement projects that it details (in *addition* to the SAMP’s 30 Near-Term projects).²¹¹ However, SAMP documents go on to state that these “longer-range projects are not ripe for conducting detailed environmental impact analysis” and that “[o]nce those projects are ripe for review, the Port will be required to comply with NEPA and SEPA.”²¹²

This truncated approach to undertaking the required SAMP environmental impact analysis may violate SEPA’s “phased review” prohibition against “merely divid[ing] a larger system into exempted fragments or avoid[ing] discussion of cumulative impacts.”²¹³

“A cumulative impact analysis need occur only when there is some evidence that the project under review will facilitate future action that will result in additional impacts.”²¹⁴ But when “[t]he project’s cumulative impacts are merely ‘speculative,’” they “need not be considered.”²¹⁵ Also, a cumulative impact argument requires a demonstration “that the project is dependent on subsequent proposed development.”²¹⁶ “An EIS need not cover subsequent phases if the initial phase under construction is substantially independent of the subsequent . . . phases, and the project would be constructed without regard to future developments.”^{217 218}

Here, the SAMP documents state that after the SAMP is completed, “[t]he Port and the FAA have committed to scoping” a further analysis of airfield/airspace constraints to implementing the SAMP long-term vision projects needed to meet 2034 forecasted demand.²¹⁹ Clearly, the subsequent proposed long-term vision improvement projects are not speculative in nature. The short-term projects will facilitate the long-term projects. The long-term projects are dependent upon the completion of the short-term projects. They are substantially related to each other as part of one unified vision. Thus, excluding the long-term vision projects from the scope

²¹⁰ SAMP Executive Summary at Page 5-12.

²¹¹ “Facilities Implementation and Financial Feasibility” (Technical Memorandum No. 7) at Pages 6-1 – 6-4.

²¹² “Environmental Overview” (Technical Memorandum No. 8) at Page 1-2.

²¹³ WAC 197-11-060(5)(d)(ii)

²¹⁴ Boehm v. City of Vancouver, 111 Wn. App. 711, 720 (2002).

²¹⁵ Id.

²¹⁶ Id.

²¹⁷ Id. (quoting SEAPC v. Cammack II Orchards, 49 Wn. App. 609, 614-615 (1987))

²¹⁸ A subsequent case cites Boehm while appearing to say the opposite, i.e., that cumulative impacts analysis is only required when the *subsequent* project is dependent on the *proposed* project. Gebbers v. Okanogan County Pub. Util. Dist. No. 1, 144 Wn. App. 371, 386 (2008) (“When . . . any future project is not dependent on the proposed action, no cumulative impacts analysis is required.”)

²¹⁹ SAMP Executive Summary at Page 5-12.

of the SAMP draft EIS may violate the legal precedent for required cumulative impact analysis.

g. Recommendations

Given what transpired with the Third Runway environmental review process, coupled with the initial deficiencies in the SAMP documentation, both of which are described above, the City of Federal Way needs to be prepared well in advance for the likely prospect that the Port and its FAA partner may take a similarly problematic analytical approach in the SAMP EIS. The City should therefore obtain the capacity to produce technical data needed to refute unsupported EIS conclusions regarding aircraft noise and health impacts.

The City should also strive for the creation of alternative, objective standards that measure *actual* noise, and available empirical data on current and potential health impacts, in order to counter the non-objective standards and outdated information the Port and FAA are likely to use in the SAMP draft EIS.²²⁰ Without convincing technical data and reference to alternative standards in its comments, the City can expect the type of inadequate responses that it received on the Third Runway EIS.

Finally, the City should continue to advocate for state and federal legislation aimed at raising airport-related environmental impact standards; take advantage of local partnership opportunities to fund the technical capacity required to effectively engage in the SAMP environmental review process; and actively support actions by other entities that may produce valuable overflight impact data and meaningful alternatives to Sea-Tac expansion. In the absence of an aggressive, proactive strategy on the City's part, the SAMP EIS is unlikely to identify mitigations for the intolerable increase in noise and health impacts on Federal Way residents that the proposed Sea-Tac airport expansion inevitably will create.

The following are specific policy actions that the Task Force recommends the Mayor propose for City Council consideration in connection with the SAMP environmental review process:

1. **Closely monitor, and advocate for Federal Way's interests, in connection with the activities and recommendations of the Port Commission's newly formed Regional Airport Capacity/SAMP Committee.** Its members are Commissioners Stephanie Bowman and Peter Steinbrueck. Along with their Commission colleagues Courtney Gregoire, Fred Felleman and Ryan Calkins, they all have publicly declared as "unrealistic and unattainable," due to traffic congestion and noise/health impacts, the expansion of Sea-Tac to accommodate the SAMP's 66 million per year passenger demand projection.

²²⁰ For example, the state-funded, ACC-managed 1997 Sea-Tac International Airport Impact Mitigation Study used "single-event noise levels" (SELs) as the measure of actual overflight noise to determine geographic areas requiring mitigation, rather than the 65 DNL standard used by the Port and FAA in the third runway EIS. As discussed in **Section IIa** above, the study recommended funding \$148.1 million in mitigation for noise and/or vibration for eight Federal Way neighborhoods (as well as neighborhoods in other impacted cities) that were excluded from mitigation of future flight track impacts identified in the third runway EIS. As an alternative mitigation method, the study also stated that modified arrival/departure procedures would avoid direct overflights of those neighborhoods.

The City should encourage and support the current Port Commission's prospective efforts to explore alternative airport locations in the region and state, in order to help meet future passenger and air cargo demand within the Puget Sound region.

2. **Support, closely monitor and advocate for Federal Way's interests during and after the PSRC's Central Puget Sound Regional Aviation Baseline Study, requested and funded by the FAA, which will analyze the potential capacity of regional airspace and airports in King, Kitsap, Pierce, and Snohomish counties to meet future air travel and cargo demand generated by those counties.**²²¹ Following informal recommendation of the Task Force, prior to submission of this report, City of Federal Way Mayor Jim Ferrell voted to support this proposed regional aviation baseline study that was approved at the February 22, 2018 PSRC executive board meeting. Importantly, at Mayor Ferrell's urging, additional language was added to the study's scope of work specifically referencing impacts on communities surrounding Sea-Tac and other airports, as well as the region's current capacity ("landside and airside") to absorb future growth.²²² Once this study is completed, the City of Federal Way should support the siting of a new regional airport.
3. **Actively support State Rep. Mike Pellicciotti's plan to reintroduce an aircraft noise abatement bill amending RCW 53.54.020 and .030 during the 2019 legislative session.** Introduced at the City's request during the 2018 regular session of the State Legislature, HB 2497 proposed to amend existing state aircraft noise abatement law affecting Sea-Tac. Specifically, this amendment would enlarge the current geographic area within which the Port is authorized to operate an airport noise abatement program, by extending its reach from the current six miles south of Sea-Tac, to 12 miles south into Federal Way. Although HB 2497 was not passed during the abbreviated 2018 legislative session, Rep. Pellicciotti has committed to reintroduce similar legislation next year and seeks needed co-sponsors in the interim. The City should rally local support for this bill and actively lead the lobbying effort that will be needed to help ensure its passage.
4. **Engage the technical and legal expertise needed for analysis and response to the forthcoming SAMP DEIS, possibly by joining the other four airport-impacted cities that plan to collectively engage.** The Task Force strongly believes that the City will need to engage outside technical and legal experts with experience analyzing the environmental impact of major airport expansion plans in order to thoroughly review the SAMP Draft EIS (DEIS), which is likely to be hundreds of pages in length. That expertise will be needed to identify and compile written comments related to potential factual flaws, inadequately supported conclusions, and unanswered questions in the DEIS regarding potential future noise and health impacts. Those comments must be submitted within a 30-day period following release of the DEIS, should the Port allow only the minimum response period provided for under SEPA. A combined and coordinated

²²¹ See July 19, 2018 PSRC Staff Memorandum and Scope of Work Summary in July 26, 2018 PSRC Executive Board meeting packet (Pages 52-56); <http://psrcwa.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=1649&Inline=True>

²²² Id.

response to the DEIS potentially will be more persuasive to the Port and FAA and is also a more cost-effective method for the City of Federal Way and the other impacted cities to engage in the SAMP environmental review process. Unfortunately, the \$1.50 per capita funding formula in the Inter-local Agreement (ILA) recently entered into by the Cities of Burien, Des Moines, Normandy Park and SeaTac would disproportionately affect the City of Federal Way.²²³ However, the ILA states that this formula applies only to *initial* funding of a joint effort, so the City of Federal Way could mitigate this financial disadvantage by seeking to negotiate a more equitable funding approach as a condition for joining the ILA. For example, the City could propose a funding formula that is based on the resident population of Federal Way neighborhoods identified for needed noise mitigation in the 1997 Sea-Tac airport impacts study. Also, it is vital that consultants with the proper technical and legal expertise be engaged. If this is not the case with the experts hired by the four airport-impacted cities, the City of Federal Way may have to retain its own.

5. **Support the State of Washington study of current Sea-Tac Airport impacts.** The City of SeaTac has committed up to \$250,000 toward a “baseline” analysis, to be conducted by the State of Washington Department of Commerce, “of both positive and negative community and economic impacts”²²⁴ on cities surrounding the airport, in order to equip those cities and community members with objective and relevant data prior to the Port’s release of the draft SAMP EIS. The State Legislature approved a 2019 state operating budget “proviso” appropriation of \$300,000 (sponsored by Rep. Mike Pellicciotti), to match an equal local funding amount. The proviso directs the State Department of Commerce to undertake and complete the study by December 2019. Under SEPA, the SAMP EIS must also compare baseline conditions against future impacts of proposed airport expansion projects. However, City of Seatac staff believes that the State study would more broadly quantify baseline conditions and current impacts than will the SAMP DEIS and would provide useful information with which to identify flaws and shortcomings in the Port’s environmental impact analysis. Following the Task Force’s informal recommendation to Mayor Ferrell and prior to submission of this report, the Federal Way City Council unanimously approved Resolution 18-735 endorsing the proposed state impacts study. The Task Force further recommends and supports the City of Federal Way contributing a share of the funding.

6. **Consider asking the Washington Department of Transportation or other appropriate state agency to request designation as the SEPA lead agency for preparation of the SAMP EIS.** An independent lead agency would help ensure that the SAMP environmental impact analysis is impartial and objective. This alternative would require the Port to agree to transfer the lead agency responsibility to a state agency.²²⁵ Although not required, SEPA Guidelines encourage the two agencies to enter into a

²²³ See City of Burien City Council agenda report dated February 15, 2018

²²⁴ “The City of SeaTac 2018 Supplemental Operating Budget Proviso Request: Airport Impact Study”

²²⁵ WAC 197-11-942 (“Any agency may assume lead agency status if all agencies with jurisdiction agree.”)

written agreement to avoid later confusion. This could be a comment submitted during the SAMP EIS scoping period.

7. **Request the Port to underwrite the technical support needed by airport-impacted Federal Way community-based organizations to conduct their own review of and comment on the SAMP draft EIS.** Although not provided for in SEPA, doing so has precedent in State law that governs the Washington Utilities and Transportation Commission (UTC). Specifically, the UTC is required to grant “intervener status” to any group or individual that can show it has a legitimate interest in the outcome of a utility rate case or other regulatory matter. Obviously, those neighborhoods in Federal Way that lie directly under the current Sea-Tac flight path and suffer from low-flying aircraft noise and health impacts have a legitimate interest in the outcome of the SAMP.
8. **Form an Aviation Impacts Committee of the City Council to oversee implementation of the City’s various policy actions and initiatives related to Sea-Tac existing operations and future growth.** As described and proposed in this report, the City likely will be engaged in several simultaneous and politically challenging inter-governmental efforts to mitigate and limit the adverse effects on Federal Way residents of existing and future Sea-Tac overflights. While the Task Force acknowledges the Mayor’s Office has primary responsibility for coordinating this effort, it is recommended that this important and complex responsibility be shared with the City Council. Thus, a three-member committee of the City Council should be formed to monitor implementation of City policies related to aircraft overflight impacts, to keep the full City Council apprised of the status of those efforts, to serve as a “sounding board” for concerns of residents in overflight-impacted neighborhoods, and to keep those residents and the entire community informed of the City’s various efforts. Although the Port’s SAMP implementation process and related inter-governmental initiatives are expected to take several years, the Task Force envisions this being an *ad hoc* (i.e. limited duration) City Council committee, during which time its members would hold regular public meetings as appropriate and needed.

VII. MILITARY AIRCRAFT

A. Discussion

On December 7, 2017, City of Federal Way Mayor Jim Ferrell, Senior Policy Advisor Yarden F. Weidenfeld, Quiet and Healthy Skies Task Force (Former) Chair John Resing, and Quiet and Healthy Skies Task Force Member Britt Ohlig met at McChord Air Force Base with the leadership of the 62nd Airlift Wing (Wing Commander Col. Rebecca J. Sonkiss, Wing Vice Commander Col. Stephen P. Snelson, and Operations Group Commander Col. Mark S. Fuhrmann), as well as other leading officers. Roel A. van der Lugt, Director of Military Affairs & Senior Policy Advisor for United States Congressman Dennis Heck (WA-10), was also present. Christine Nhan, District Representative for Congressman Adam Smith (WA-9), participated by telephone.

Mayor Ferrell explained that exercises with C-17 military aircraft had, at times, impacted residential neighborhoods, such as Marine Hills, in Federal Way. Task Force member Britt Ohlig also pointed out that there were low and loud C-17 aircraft over Browns Point. It was also mentioned that military aircraft had been seen and heard as far as the Twin Lakes Neighborhood in Federal Way.

Several months later, on April 4, 2018, residents in the Twin Lakes neighborhood contacted the City of Federal Way Mayor's Office stating that there were three low flying military planes right at their residence on the previous evening (April 3, 2018) at about 10:49 PM. They wrote that they "heard two passes one after another, then the third from a totally different direction, low and startling. . . . It was shockingly low, probably the lowest [they had] seen yet, and some have been low; the bright lights seemed to light up the area." They asked "why this is so necessary over a residential area when Puget Sound is over the hill . . . and they could fly up/down it? Not good PR on their part." Several members of the Mayor's staff who live in the same neighborhood reported the same thing.²²⁶

At the December 7, 2017 meeting, Col. Sonkiss emphasized that the Air Force wants to be good partners with the local community. She was happy to engage in conversations like this. However, she said that there are constraints on the air space, and the military aircraft have to land where they are aligned. She did say that Air Force traffic has decreased and will continue to decrease. Also, she said that the military aircraft do not operate on Visual Flight Rules (VFR) that far out. They are also not classified and should be visible in the Air Traffic Control System (though van der Lugt pointed out that there is a 15-minute delay).²²⁷ Col. Snelson said that we would have to ask the controllers at Sea-Tac International Airport why they vector C-17 traffic over the Browns Point neighborhood since the military pilots do not choose to fly over Browns Point—they go where the controllers (from Sea-Tac Airport) direct them.

Similarly, with respect to the April 4, 2018 complaint, Jason Waggoner, Chief of Public Affairs for the 62nd Airlift Wing, responded that "the 3 C-17 aircraft were conducting routine training and were flying under the direction of SEATAC air traffic control when they were directed to fly at 2,000 feet and onto the flight path that took them over Federal Way." Waggoner added that "the 62nd Airlift Wing is always conducting routine training and supporting worldwide humanitarian and contingency operations. Unfortunately, there are times when the aircraft are directed to fly over residential areas." The complainant did not accept this answer, replying that McChord has "many other flight paths available . . . for training purposes" and that they should "use those routes and not fly over Federal Way anymore." "There is simply no reason for your planes to be flying where they were," the complainant continued, "which is why Sea Tac took control of these aircraft"

²²⁶ On Thursday, July 19, 2018, one of these City of Federal Way staff members again reported a low-flying military plane over Federal Way at 10:03 pm.

²²⁷ In an August 31, 2017 email to City of Federal Way Senior Policy Advisor Yarden F. Weidenfeld, however, Sea-Tac International Airport Noise Programs Manager Stan Shepherd claimed that "the FAA blocks all military and sensitive aircraft from [their] tracking system so [they] don't have any further information on it."

On December 7, 2017, Col. Sonkiss also said that Moses Lake is their primary tactical location. They generally do not do tactical training at McChord.

Following upon the December 7, 2017 meeting, John Norgren, Legislative Liaison & Community Relations at Joint Base Lewis-McChord (JBLM), contacted Weidenfeld by email on December 15, 2017 with the following information concerning issues with military aircraft noise and low flight complaints:

- Community Information Line: (253) 967-0852
- E-MAIL: usarmy.jblm.imcom.mbx.pao-public@mail.mil.
- WEBSITE: <http://www.lewis-mechord.army.mil/pao/comrel.html>

Also, van der Lugt recommended contacting an FAA controller exclusively assigned to deal with military aircraft at Seattle TRACON (Terminal Radar Approach Control Facilities) at the northwest side of the airport.

b. Recommendations

At this point, the City of Federal Way should:

1. Publicize to its residents the above contact information for complaints with respect to military aircraft.
2. Follow up on the recommendation to contact an FAA controller exclusively assigned to deal with military aircraft at Seattle TRACON (Terminal Radar Approach Control Facilities) to further investigate why military planes are being directed over residential neighborhoods in or near Federal Way.
3. Seek regular (annual?) meetings with 62nd Airlift Wing Command leadership to communicate issues of concern raised by residents.

VIII. CONCLUSION

The members of Mayor Ferrell's Quiet and Healthy Skies Task Force sincerely hope that this comprehensive report will aid the Mayor and City Council in making important decisions over the coming months and years regarding how to address the many ways in which air traffic is impacting the people of Federal Way. Task Force members stand ready to assist in any way they can.

Exhibit A

Figure 1.

SEPA REVIEW PROCESS

