WSDOT invites the public to submit comments on the WASP draft report. Please send comments to WASPFeedback@wsdot.wa.gov by April 17.

Robert Hodgman
WASP Project Manager/Senior Aviation Planner
360-596-8910 Hodgman@wsdot.wa.gov

Dear Mr. Hodgman,

Thank you for the opportunity to comment on the WASP draft report. In the interest of full disclosure, it's important to inform you that the City of Burien recently filed litigation against the Federal Aviation Administration (FAA) for new, high levels of aircraft noise exposure in Burien neighborhoods commencing in summer 2016 because of increased flight and passenger demands at Seattle Tacoma International Airport (Sea-Tac).

Burien citizens—residents, human beings--have for too long been familiar with repetitive degradations of our environment—air quality and noise pollution—and lower property values from the ever-growing number of commercial aircraft operations at Sea-Tac Airport for the sake of economic development everywhere around the world and the U.S. But we are not alone, neighborhoods in Seattle (Georgetown, Beacon Hill, Rainier Valley, and South Park), as well as the City of Sea-Tac, Des Moines, and other South King County communities, continue to suffer from a decision to have a single major airport in Western Washington.

Yes, Burien was "sound-insulated" by the Port and FAA for the third runway, but the livability of our outdoor spaces are dramatically compromised by high decibel levels of single noise events that interrupt and annoy normal daily activities (sports events, parks, backyard barbeques); not to mention debilitating particulates too small for detection by the human eye that constantly erode air breathed by our children, family, friends, and pets. Library book shelves nationwide and across the globe are filled with research documenting the deleterious effects of ***sustained*** poor air quality and transportation-related noise.

WSDOT's 2017 WASP is sorely inadequate, except to promote aviation and economic development. For example, it's Aviation System Goals and Performance Objectives are completely devoid of any expression of human hearing loss, poor student performance caused by noise exposure ***outside classrooms*** (i.e. playfields), interruptions of sleep and increased incidents of asthma caused by poor air quality. In the WASP, environmental "needs" receive little attention, except stormwater drainage, recycling, and alternative fossil fuels.

However, the most egregious omission of the 2017 WASP occurs in the Policies and Recommendations section where there is ***absolutely no recommendation or action*** detailed to mitigate the fact that Sea-Tac is almost at 100% capacity ***now*** and another expansion—with funding still undefined and dependent upon ***new taxes*** and/or doubtful federal funds—is planned. Consequently, residents of Burien and South King County are destined to endure the burden of yet more and more deteriorating health and environmental living conditions. This is not fair, equitable, or safe for communities already struggling to address homelessness, crime, and congestion.

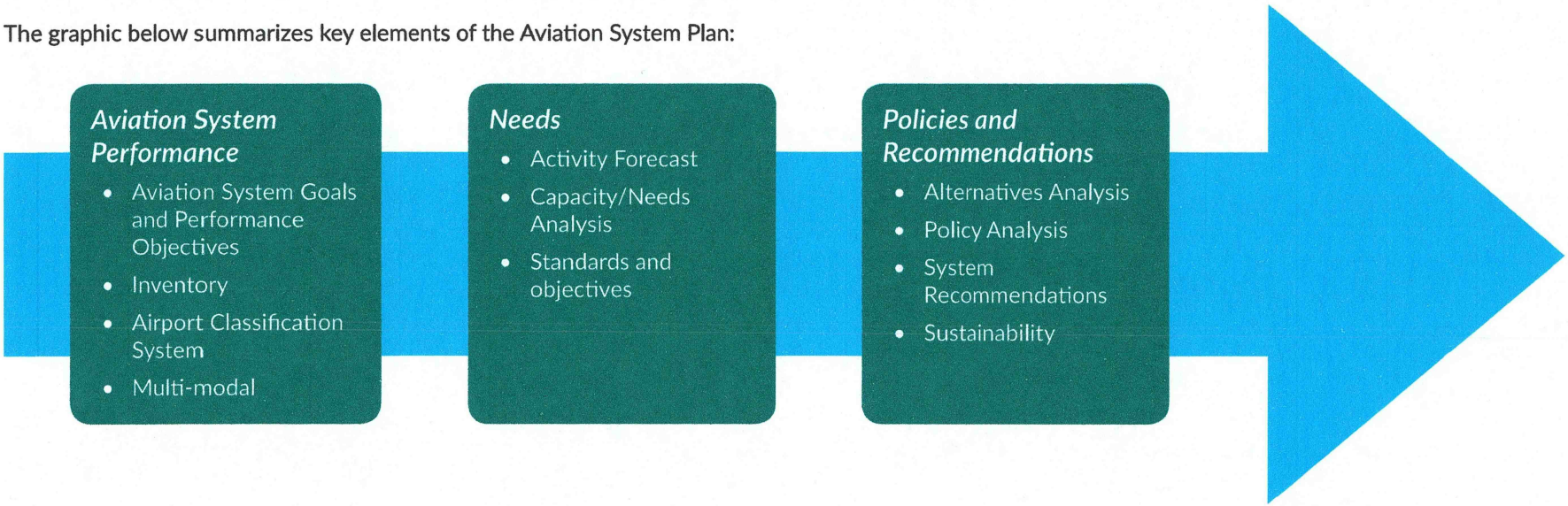
In a state that boasts its progressiveness, beautiful natural surroundings, and booming economy, surely WSDOT could do a better job to tell the ***whole*** aviation story and begin the process—along with other local and regional governments (i.e. PSRC, King County) of identifying alternative locations for commercial aircraft activity that do not favor affluent communities over ethnically diverse, lower-income communities.

cc: Governor, Transportation Commission Chairman and members, King County Executive, King County Council members, Director and members of PSRC, Mayors and City Council members of cities mentioned, King County legislators, State members of Congress.

The priorities of the Aviation System Plan are to:

- Identify issues and evaluate impacts to determine needed airport and system improvements
- Develop performance goals and metrics to better meet the aviation needs of communities and the aviation system as a whole
- Serve as an effective decision-making tool for the development of policies and recommendations that will advance Washington's aviation system

The graphic below summarizes key elements of the Aviation System Plan:



WAAS provides horizontal and vertical navigation capability for all phases of flight, including approaches, departures, and enroute operations. Area Navigation (RNAV) is a method of navigation that permits aircraft operations on any desired flight path within the coverage of ground or space-based navigation aids, or a combination of both.

To take advantage of the full benefits of NextGen technology and procedures, airports must have certain infrastructure in place. FAA's requirements may require runway and taxiway widening; parallel taxiways; taxiway relocation; runway and taxiway lighting; and obstruction lighting, marking, and removal. Other actions include airport master plan and airport layout plan updates, obstruction surveys and obstruction removal, and land acquisition for runway safety areas and runway protection zones, approach protection, and acquisition of avigation easements.

Currently, any user can request an improved approach procedure for an airport. All new approaches fall into the NextGen realm, with development of approaches such as Performance Based Navigation (PBN), Required Navigation Performance (RNP), and vertically guided approaches, typically Localizer Performance with Vertical guidance (LPV). However, these requests are not vetted through WSDOT or in some cases through the airports to evaluate the infrastructure to determine the ability of the airports to support the procedure.

As an alternative, WSDOT can assist airports and the system through an evaluation of the capabilities and needs of the entire statewide airport system, developing a prioritized list of airports for which new NextGen procedures could best benefit the state system. For example, the Puget Sound Regional Council (PSRC) evaluated its regional system needs and worked closely with FAA to determine how NextGen can improve the accessibility of the system. This regional approach is beneficial to the Seattle-Tacoma area, however, this focused effort could be expanded to evaluate the opportunities and needs of the state system.

WSDOT is engaged at the national level with other states in supporting NextGen implementation that benefits all users, while identifying the challenges that exist in each state specific to their conditions and environment. As part of the WASP, WSDOT Aviation convened a working group to evaluate and discuss NextGen implementation and provide options for consideration. These options include actions that WSDOT could consider to assist with NextGen implementation in the state and are as follows:

- Continue the statewide airports geographic information system (AGIS) project to support NextGen implementation at select airports
- Explore and pursue the streamlining of avionics hardware and software certification to reduce costs for the pilot community and increase the availability
- Pursue legislation addressing geo-fencing and reduce the need for ADS-B
- Work with airport sponsors and the FAA's Flight Standards to communicate changes to approach procedures associated with NextGen
- Partner with education institutions and the aerospace industry to increase the number of individuals in the career field of avionics through marketing and education to meet demand caused by the ADS-B Out rule taking effect on January 1, 2020
- Develop a brochure to educate airport sponsors on how to protect airports from obstructions

Infrastructure Funding Challenges
Appendix B

- Develop a Management Best Practices toolkit for state airports
- Investigate FAA funding best practices by region

Of these 33 solutions, ten (10) core study solutions were identified and recommended for performance analyses. These 10 solutions were those that scored highest against a set of screening and evaluation criteria to help ensure the solutions are "feasible, acceptable, suitable, distinguishable and complete." The 10 core solutions identified in the study are provided below. The solutions are not presented in any particular order. The following are the 10 core study solutions:

1. Public Private Partnerships (P3) – entails the full utilization of private sector funding for all types of revenue producing airport projects. This would involve the full range of P3 funding sources from full airport privatization to partial, facility-specific privatization;
2. Alternative Taxing of Airport Operationally Oriented Uses – state law that would allow for airport operational activities, such as licensed motor vehicles based at an airport, non-aviation fueling consumption, airport parking, and others, to be taxed or levied a fee, with proceeds going to the Aeronautics Account;
3. Alternative Economic Development Based Consumption Tax – would tie to existing local and statewide visitor based tax funding to leverage a share of tourist taxes;
4. Establish a State-Sponsored Revolving Aviation Infrastructure Loan Fund (SRF) – providing a pool of funds to initiate a low-rate loan fund that is applicable to either revenue funded or airport sponsor funded programs;
5. Realignment of Current Transportation Revenue Allocations – refines allocations of current State transportation-generated revenues with a direct nexus to the state aviation system to allow revenues to be reinvested to aviation capital needs in proportion to the benefit provided by aviation and air commerce;
6. Reallocate Airport Leasehold Tax to the Aeronautics Account – leasehold tax revenues would be routed to the State Aeronautics Account to fund aviation preservation and capital projects rather than being diverted to the General Fund;
7. Increase Select Aviation Tax Rates – increases in the current taxation program that goes into the State Aeronautics Account with a focus on taxes that currently support aviation and that would have a meaningful impact on the funding gap;
8. Revise Fuel Excise Tax Exemptions – reviewing and optimizing existing exemptions to create a more consistent aviation fuel excise tax base;
9. Modify the State Aircraft Excise Tax Program – revise the state excise tax program for aircraft by modifying legislation that established the current program and includes changing the Aeronautics Account revenue allocation from 10% to 100%; and
10. Develop a Best Management Practices (BMP) Guidebook/Toolkit for Airports – develop a tool kit mainly for non-self-sufficient GA airports that would help airports adopt the best practices that would better allow them to move towards self-sufficiency in their capital improvement programs.

Strategies for Implementing State Funding Solutions

The *Airport Investment Solutions Study* identified many possible solutions for providing infrastructure funding to Washington airports. All of the possible solutions will likely require coordination that starts with identification of a champion, which could be a group or a key individual that will take the lead in the efforts necessary for implementation. Most of the potential solutions require changes in state legislation or policies that will take political support for successful enactment. The list below identifies strategies that can be considered to support the implementation of some of these solutions:

- Support the continuation of the Advisory Committee membership from the *Airport Investment Solutions* Study or a similar group to continue the momentum developed during the study regarding the importance of finding state funding solutions to assist with the funding needs

- Airports with active development partnerships with chambers of commerce, tourism bureaus, service organizations, industries, governments, and recreational user groups
- Airports with business parks or landside real estate development (existing and available) and those with on-site aerospace manufacturing leases

2.4 Education, Outreach, and Community Engagement

The goal of *Education, Outreach, and Community Engagement* is to promote aviation and its importance, impact, and activities on a broad level extending beyond just the airports. The objectives include promoting aviation education to enhance safety and community support, increasing community knowledge of the aviation systems to communicate airport benefits and contributions to local communities and economies, and promoting aviation activities matched to local and aviation community needs.

By promoting aviation through education, the airport helps further aviation to create a sustainable future of aviators and promotes a more knowledgeable community that understands aviation and airports. Education programs may be in need of land to build facilities, existing facilities to host events, aircraft and automobile parking, or access to the airfield depending on the type of program. This may also include supporting programs such as Young Eagles that introduces children to aviation through flights from local pilots or airport staff participating in a career development day at a local school. Additionally, by providing opportunities for the aviation and non-aviation community to provide feedback to the airport helps in the overall success of the airport. As airports seek to maintain and improve facilities, community support is needed and the knowledge and understanding generated through education, outreach, and engagement helps to build this support for airport development.

Following are the system performance measures for the Education, Outreach, and Community Engagement goal:

- Airports that host aviation education/schools and communities with aviation educational programs
- Airports that host community events that include aviation expert guest speakers related to their airport activities and role
- Airports that host community input programs that solicit feedback on airport meeting community aviation needs

2.5 Infrastructure Improvement, Preservation, and Capacity

The goal of *Infrastructure Improvement, Preservation, and Capacity* is focused on ensuring the existing system is maintained and improved to handle the current and forecasted capacity. The objectives include providing access for aircraft during all weather conditions, maintaining the facilities to established WASP classification levels, and planning to meet emerging requirements in technology and infrastructure, such as the Next Generation Air Transportation System (NextGen).

When the weather is clear and pilots can see where the aircraft is going, many pilots do not need to rely heavily on their aircraft's instrumentation for navigation, especially in general aviation operations. As weather worsens and certain conditions exist, pilots must utilize their instrumentation more, particularly when landing at airports via instrument approach procedures (IAP). IAPs provide continued and better

vary widely. Airports are encouraged to focus on waste, air and water quality, alternative energy sources, and wildlife management.

Financial sustainability is a key topic for many airports as they strive to become self-sufficient and continue to provide their local share of the funds for development projects. Airports should be innovative and strategic in the methods they use to obtain and grow their revenue sources. Traditional methods of generating revenue include land leases for offices and tenants, aircraft storage, fuel sales, landing fees, and concessions. By reviewing the existing fee schedule, policies, and procedures, an airport may be able to determine if it is obtaining the best return on its investments, if it is charging the market rates, and potentially discover methods of obtaining future revenue sources. Conducting a business plan can help ensure an airport is choosing development projects that give them the best returns on their investments, charging the correct rates, operating and marketing the airport properly and efficiently, and review additional sources of revenue.

By connecting sustainability to the other goals at the airport, it is outlining a successful program that is more easily achieved. These programs and practices can be implemented into any planning, design, or construction project as well as in an overall sustainability plan that outlines the overall goals and objectives of the airport. By measuring the success rate and reviewing the goals periodically, the airport can better formulate an effective plan.

Following are the system performance measures for the Sustainability goal:

- Airports with storm water pollution prevention plans (SWPPP), recycling programs, alternative fuel vehicles, and noise contours in last 10 years
- Airports with sustainability plans that have energy conservation goals
- Airports that have implemented financial sustainability measures

Table 2-1 summarizes the WASP goals, objectives, and system performance measures.

Table 2-1. Summary of Goals, Objectives, and System Performance Measures (continued)

GOAL	OBJECTIVES	SYSTEM PERFORMANCE MEASURES
Sustainability	▪ Reduce environmental impacts ▪ Provide an aviation system that is sustainable ▪ Implement airport financial sustainability measures	▪ Airports with storm water pollution prevention plans, recycling programs, alternative fuel vehicles, and noise contours in last 10 years ▪ Airports with sustainability plans that have energy conservation goals ▪ Airports that have implemented financial sustainability measures

Source: WSDOT Aviation, 2016

State Aviation Forecasts

Forecasts were developed to identify future demand in commercial passenger traffic, GA activity, and air cargo activity

Forecasting future aviation demand is critical to long range facility planning for the state. In LATS, forecasts of future activity at public use airports across Washington State were developed. The forecasts identify expected demand in commercial passenger traffic, general aviation activity, and air cargo activity in Washington through 2030. Forecast results are summarized below.

- Between 2005 and 2030, passenger enplanements at Washington State's airports are forecast to increase by 85 percent, from 17 million to 31 million -- or 2.5 percent per year on average.
- Passenger traffic in Washington State is projected to remain highly concentrated at Seattle-Tacoma International and Spokane International airports for the foreseeable future. The forecast projects that in 2030, Sea-Tac will still account for 85 percent of the state's total enplanements, and Spokane will account for an additional 11 percent.
- The state's commercial passenger aircraft operations are projected to increase at a healthy 2.1 percent per year, from 570,000 in 2005 to 960,000 by 2030. This represents a 69 percent increase in commercial operations between 2005 and 2030. Commercial operations are expected to grow more slowly than enplanements, as aircraft size, load factors and average passenger loads increase in the future in line with national trends.
- In 2005, approximately 8,100 general aviation aircraft were based at public use airports in Washington State. The number of statewide based aircraft is forecast to increase to approximately 9,700 aircraft in 2015, and 11,800 aircraft in 2030. From 2005 to 2030, the state's based aircraft will increase at an average annual rate of 1.5 percent. This tracks the national average closely.
- Washington State's general aviation aircraft operations are forecast to increase from 3.0 million in 2005 up to 4.4 million in 2030, representing average annual growth of approximately 1.60 percent. The growth in GA operations is slightly higher than the growth in based GA aircraft, reflecting a small increase in the average number of operations per based aircraft.
- Washington's total air cargo volume is expected to grow from approximately 600,000 tons in 2005 to 1,407,000 tons in 2030. This represents a significant 3.5 percent annual growth over the forecast period.

Airfield Capacity

The airfield capacity (or operations capacity) of an airport measures the number of aircraft operations that can be accommodated by the airport's runway/taxiway system without incurring unacceptable levels of congestion and delay. Key findings of the airfield capacity analysis are described below.

- Existing and future levels of aircraft operations activity on a statewide basis are well below the capacity of the aviation system as a whole. However, aircraft operations are not uniformly distributed among Washington State airports. Much of the available capacity is not placed strategically to serve expected demand.
    - In 2005, total aircraft operations in Washington utilized less than 15 percent of overall system operations capacity at the state level. Aircraft demand is expected to only increase from 14.6 percent of capacity in 2005 to 22.5 percent of total system capacity in 2030.
    - The primary capacity issue is the distribution or concentration of demand in the most populated regions of the state, particularly in the Puget Sound Region. Airports located in and around the major population and economic centers of the state experience the greatest demand.
    - The smaller, outlying airports in Washington provide over 60 percent of the state's operations capacity, but only generate about 25 percent of statewide activity. The largest airports provide only one-third of total operations capacity but attract 75 percent of the demand.
- Airfield capacity constraints (or the inability of an airport's runway system to accommodate forecast flight activity) are expected to emerge at twelve airports.

Four airports – all located within the Puget Sound Region – are expected to exceed their operational capacity by 2030

    - Four Washington airports are anticipated to exceed 100 percent of their operating capacity by 2030. The four airports are all located within the Puget Sound Special Emphasis Area and include:
        - Seattle-Tacoma International
        - Boeing Field
        - Harvey Field
        - Kenmore Air Harbor Inc.
    - Eight additional airports in Washington were identified as exceeding the 60 percent capacity planning threshold – the

- The large number of Puget Sound airports anticipated to experience capacity constraints limits the options for managing demand within the region. Methods such as traffic redistribution or demand management are more difficult when all system airports are nearing capacity.

Exhibits ES-14 and ES-15 below summarize the aircraft operations forecast and Airport Service Volume (ASV) or available operational capacity at each of the twelve constrained airports.

Exhibit ES-14: Airports Exceeding 100 Percent of Operations Capacity by 2030

	ASV	2005	2010	2015	2020	2025	2030
Commercial Service Airports							
Boeing Field/King County Int'l	380,000	251,856	305,209	368,356	423,083	482,822	549,181
Percent Capacity		66%	80%	97%	111%	127%	145%
Operations Over 100% Capacity					43,083	102,822	169,181
Seattle-Tacoma International	533,041	346,744	391,960	443,068	499,673	563,563	633,599
Percent Capacity		65%	74%	83%	94%	106%	119%
Operations Over 100% Capacity						30,522	100,558
Regional Service							
Harvey Field	230,000	139,160	156,790	173,950	193,091	214,556	237,636
Percent Capacity		61%	68%	76%	84%	93%	103%
Operations Over 100% Capacity							7,636
Commercial Service/Seaplane Base							
Kenmore Air Harbor, Inc.	56,250	57,000	65,950	71,250	75,150	78,950	83,300
Percent Capacity		101%	117%	127%	134%	140%	148%
Operations Over 100% Capacity		750	9,700	15,000	18,900	22,700	27,050

Passenger Terminal Capacity

Six airports are either currently or expected to exceed their peak hour passenger capacity by 2030 – expansions required at other airports not significant compared to Sea-Tac

Passenger terminal capacity is a measure of how many passengers can be processed through an airport's terminal facilities during peak periods of activity while maintaining an acceptable level of customer service and convenience. The passenger terminal capacity findings for Washington State are summarized below.

- The analyses determined that six airports are expected to exceed their peak hour passenger capacity by 2030. The projected passenger terminal expansion requirements for these airports are presented in Exhibit ES-16. The six airports include:
  - Anacortes
  - Kenmore Air Harbor, Inc.
  - Kenmore Air Harbor Seaplane Base
  - Orcas Island
  - Seattle-Tacoma International
  - Tri-Cities

Exhibit ES-16: Passenger Terminal Expansion Requirements

Airport	2005 Terminal Peak Hr Capacity	2005		2030		
		Peak Hour Passengers	Capacity Utilization (%)	Peak Hour Passengers	Capacity Utilization (%)	Add'l Terminal Area Required (sq. ft.)
Anacortes	9	9	100%	32	350%	4,025
Kenmore Air Harbor, Inc.	8	8	100%	13	161%	875
Kenmore Air Harbor SPB	8	8	100%	13	161%	875
Orcas Island	7	7	100%	11	153%	700
Seattle-Tacoma Int'l	8,065	4,800	68%	10,274	127%	386,575
Tri-Cities	271	185	68%	313	115%	7,350