

Regional Aviation Baseline Study



Puget Sound Regional Council

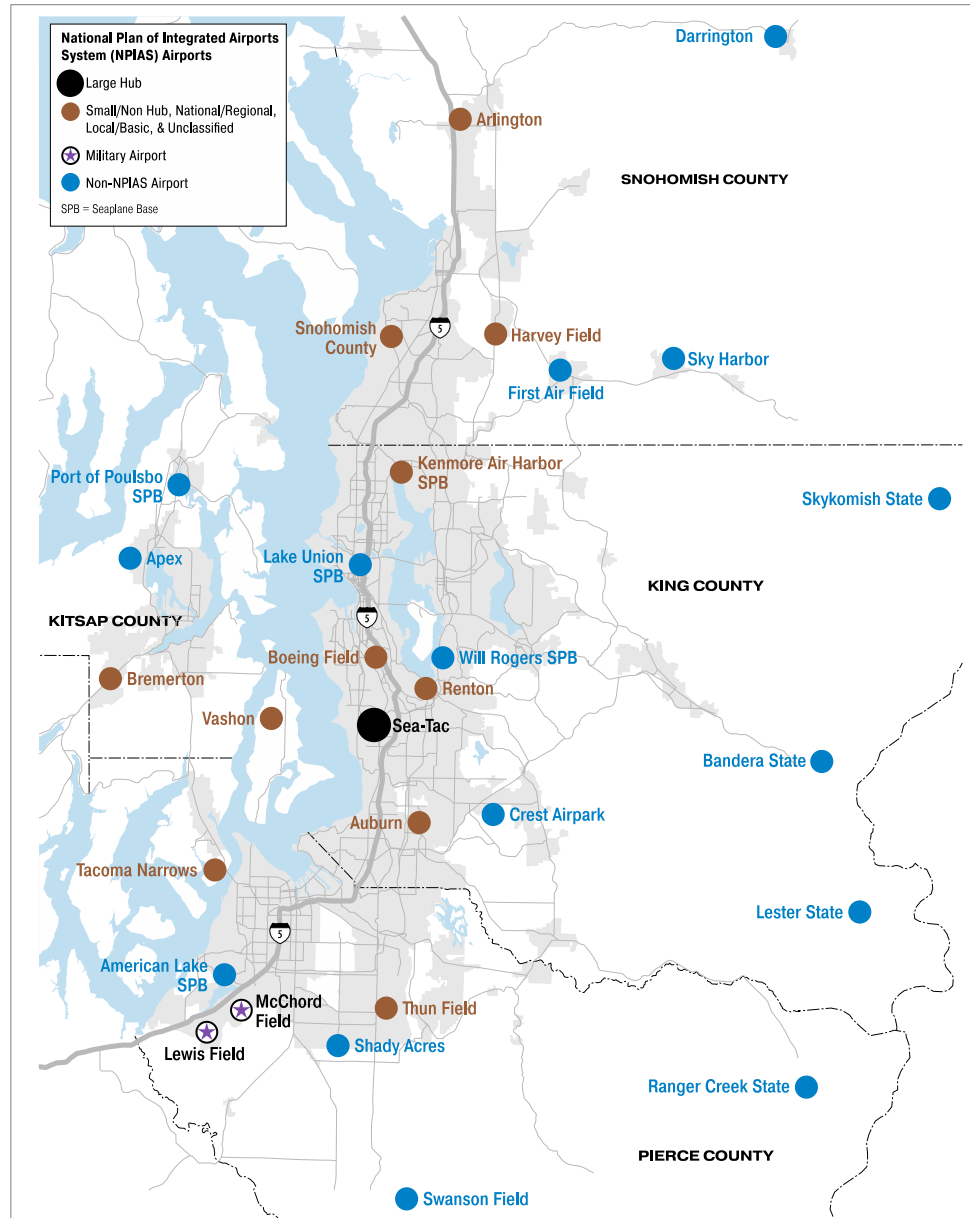
Regional Aviation Baseline Study

Study Objectives

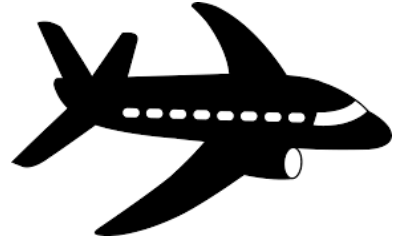
- Identify the roles of each airport and the aviation activities within the region based on existing planning efforts
- Provide a regional perspective on how aviation activities at airports in the region interact with each other, the community and the broader economy
- Obtain input from stakeholders about their needs and build a common understanding about aviation and airspace constraints
- Identify future aviation needs within the central Puget Sound Region and set the stage for future planning



Study Area: 29 Regional Airports



Regional Forecasts



Commercial

Scheduled passenger service



Air Cargo

Freight and mail carried in the lower hold of passenger aircraft and on dedicated freighters



General Aviation

Business, flight instruction, medical, emergency, law enforcement, recreation, and tourism

Forecast represents regional demand for service in 2050 if unconstrained by airport or airspace capacity



Study Phases



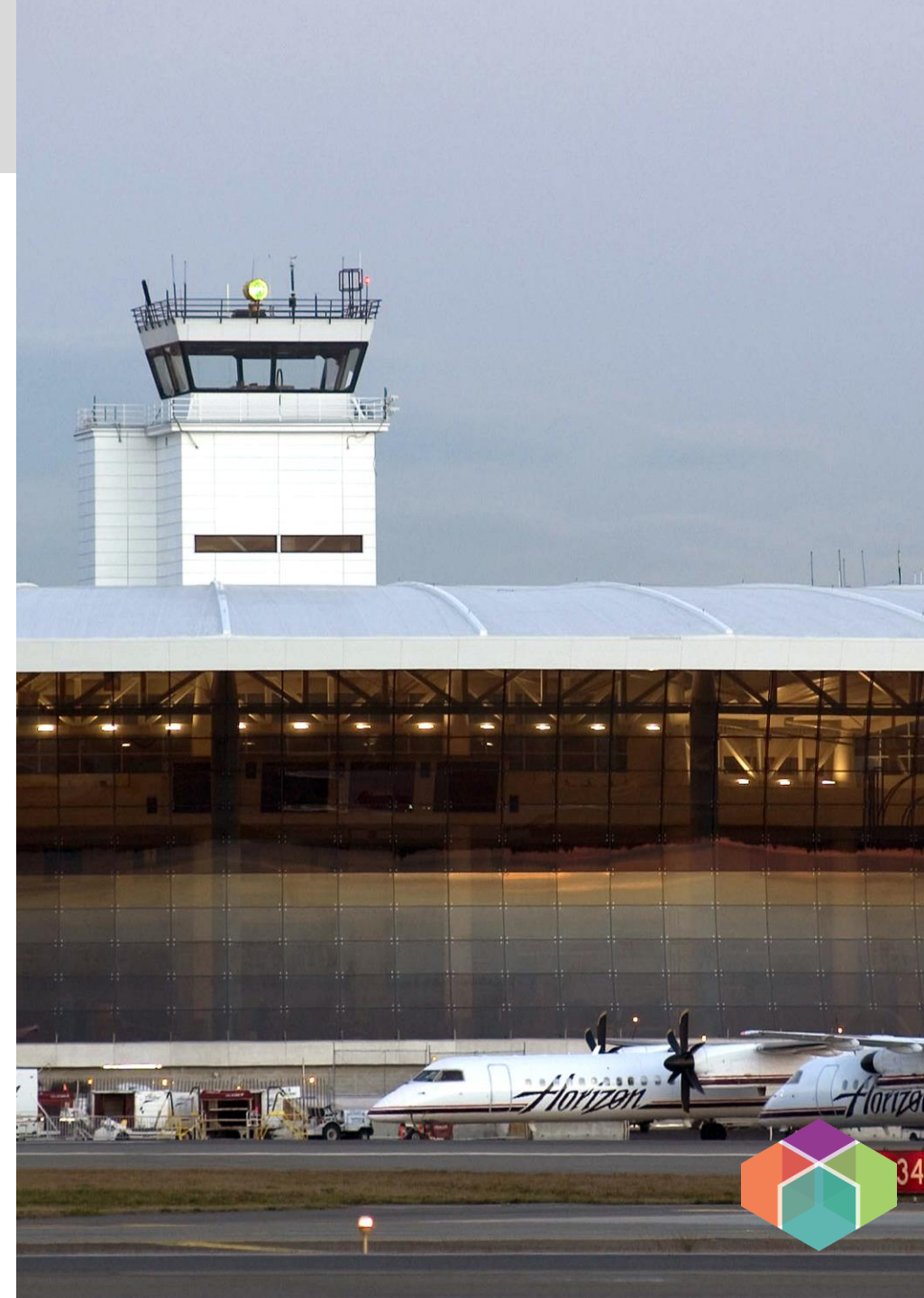
Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Technical Analysis				Scenario Evaluation		Project Completion	
<u>Airport & Aviation Activity</u> <ul style="list-style-type: none"> ✓ Existing conditions ✓ Aviation sector analysis ✓ Regional forecasts 		<u>Aviation Issues Analysis</u> <ul style="list-style-type: none"> ✓ Airspace flow analysis ✓ Future capacity needs • Economic analysis 		<ul style="list-style-type: none"> • Identify & evaluate future scenarios • Summary of community perspectives • Identify next steps 		<ul style="list-style-type: none"> • Publish Final Report 	

Public Involvement	
Stakeholder outreach meetings	
Technical Working Group	Media briefings
Community meetings	
Public survey	
Online open house	



Key Takeaways

- Demand for commercial service will more than double by 2050
 - Even with planned investments, Sea-Tac Airport will not be able to meet the region's 2050 demand for passenger air service
 - Drive times to Sea-Tac will get substantially worse for most of the region's residents
- Demand for air cargo will more than double by 2050
 - Investments will be needed to meet air cargo demands
- Demand for general aviation will increase by 1/3 by 2050
 - Region has capacity to meet general aviation demand, but capacity constraints exist at individual airports
- The region's airspace is complex and constrained



Commercial Enplanement Comparison

U.S. Airport Passenger Enplanements Ranking, 2018 (millions)

1	Hartsfield–Jackson Atlanta International Airport	ATL	51.9
2	Los Angeles International Airport	LAX	42.6
3	O’Hare International Airport	ORD	39.9
4	Dallas/Fort Worth International Airport	DFW	32.8
5	Denver International Airport	DEN	31.4
6	John F. Kennedy International Airport	JFK	30.5
7	San Francisco International Airport	SFO	27.8
8	Seattle–Tacoma International Airport	SEA	24.0
9	McCarran International Airport	LAS	23.7
10	Orlando International Airport	MCO	23.2



Commercial Forecast

Enplanements in the Central Puget Sound Region (millions)

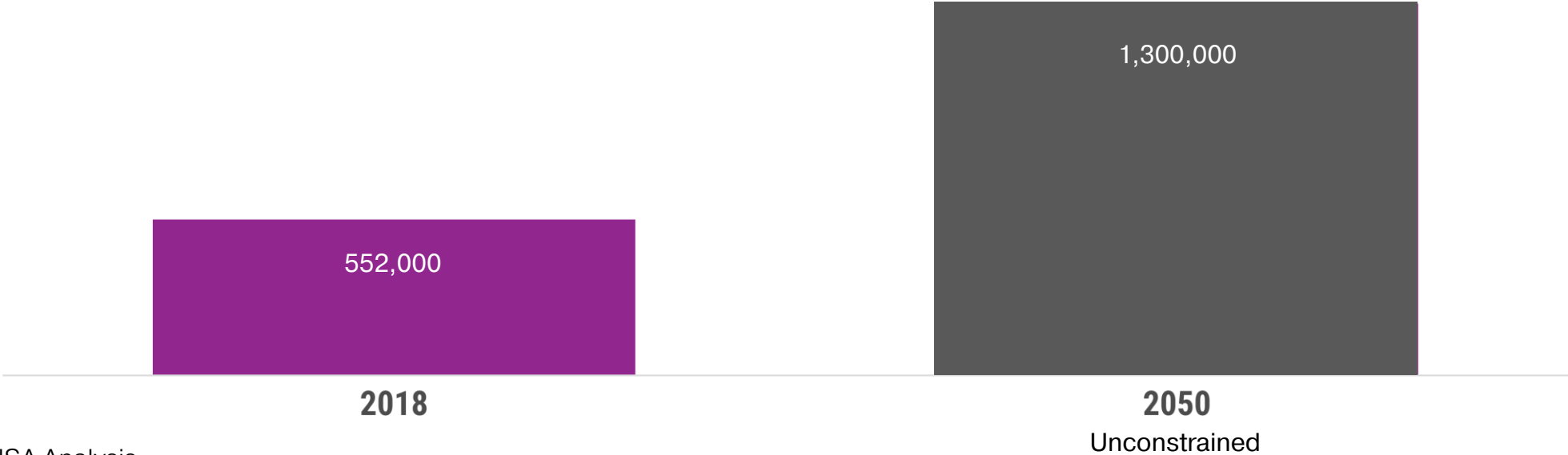


Source: WSP USA Analysis. Enplanements = passenger boardings



Air Cargo Forecast

Commercial Air Cargo Handled in the Central Puget Sound Region (metric tons)



Source: WSP USA Analysis



General Aviation Forecast





General Aviation Operations in the Central Puget Sound Region



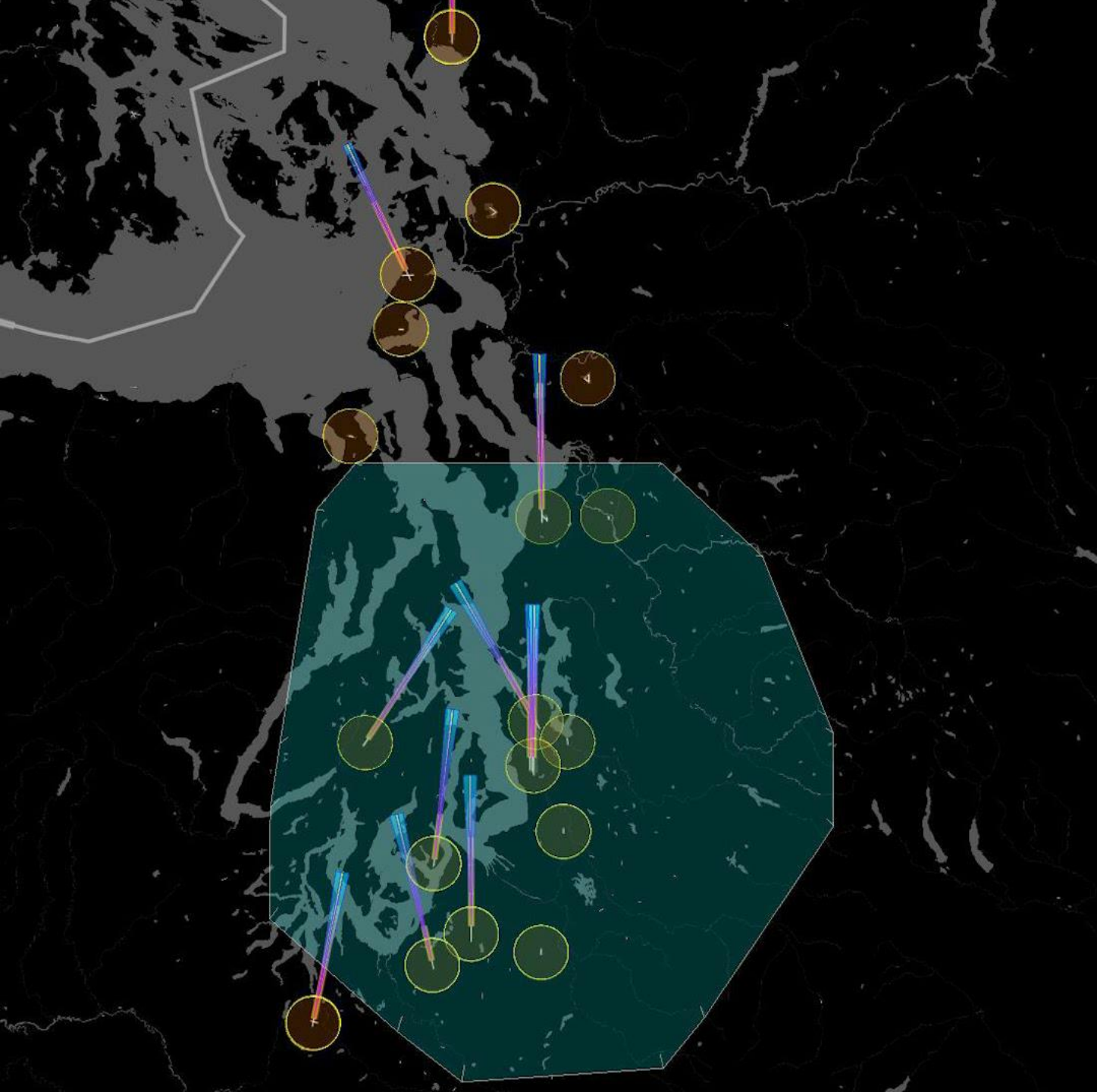
Source: FAA ATADS, NFDC, FAA Aerospace Forecast, and WSP. Operations = takeoffs + landings



Regional Air Traffic

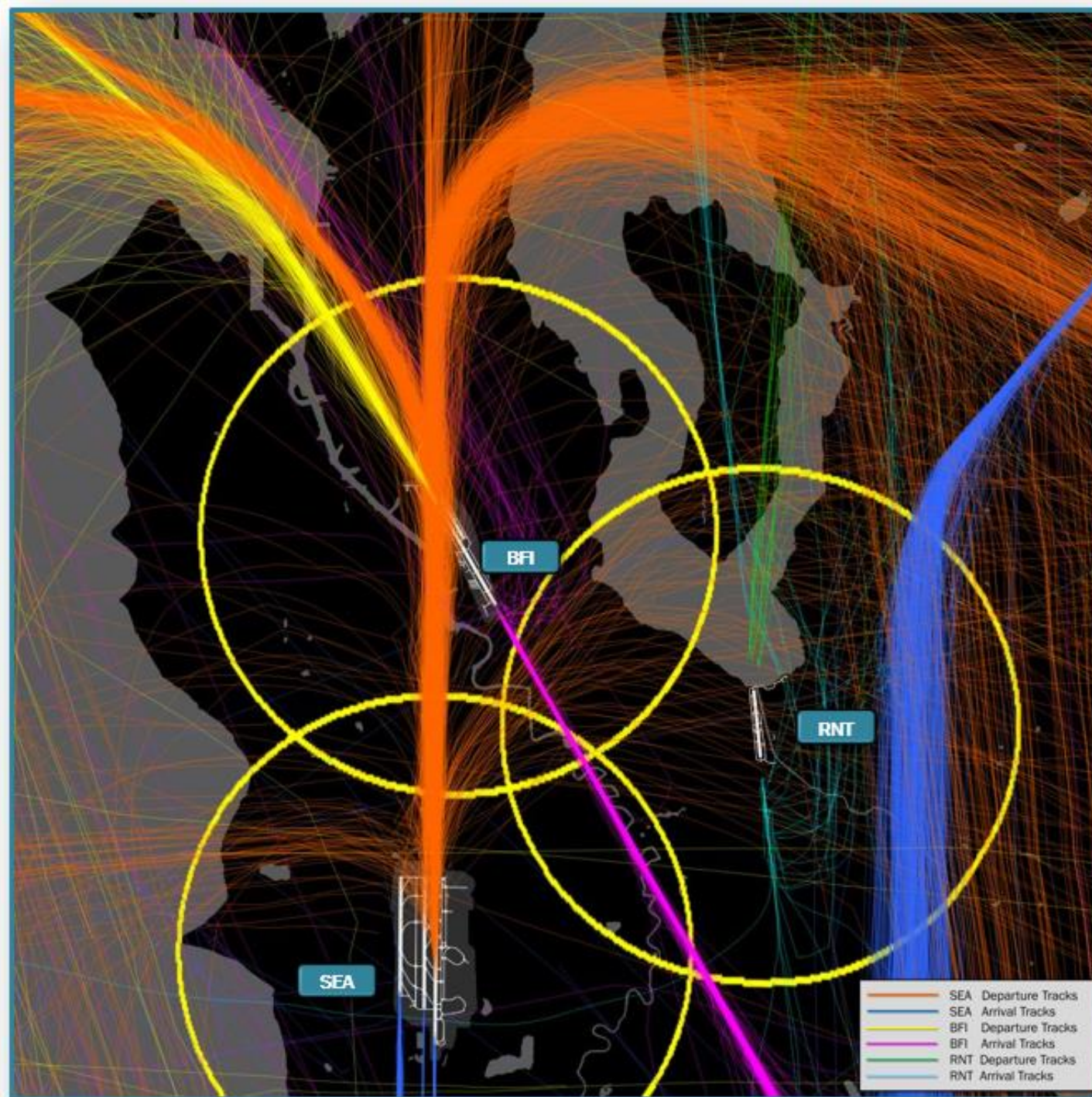
Sea-Tac	Arrivals	
	Departures	
Other	Arrivals	
	Departures	

Video represents approx. 1.5 hours



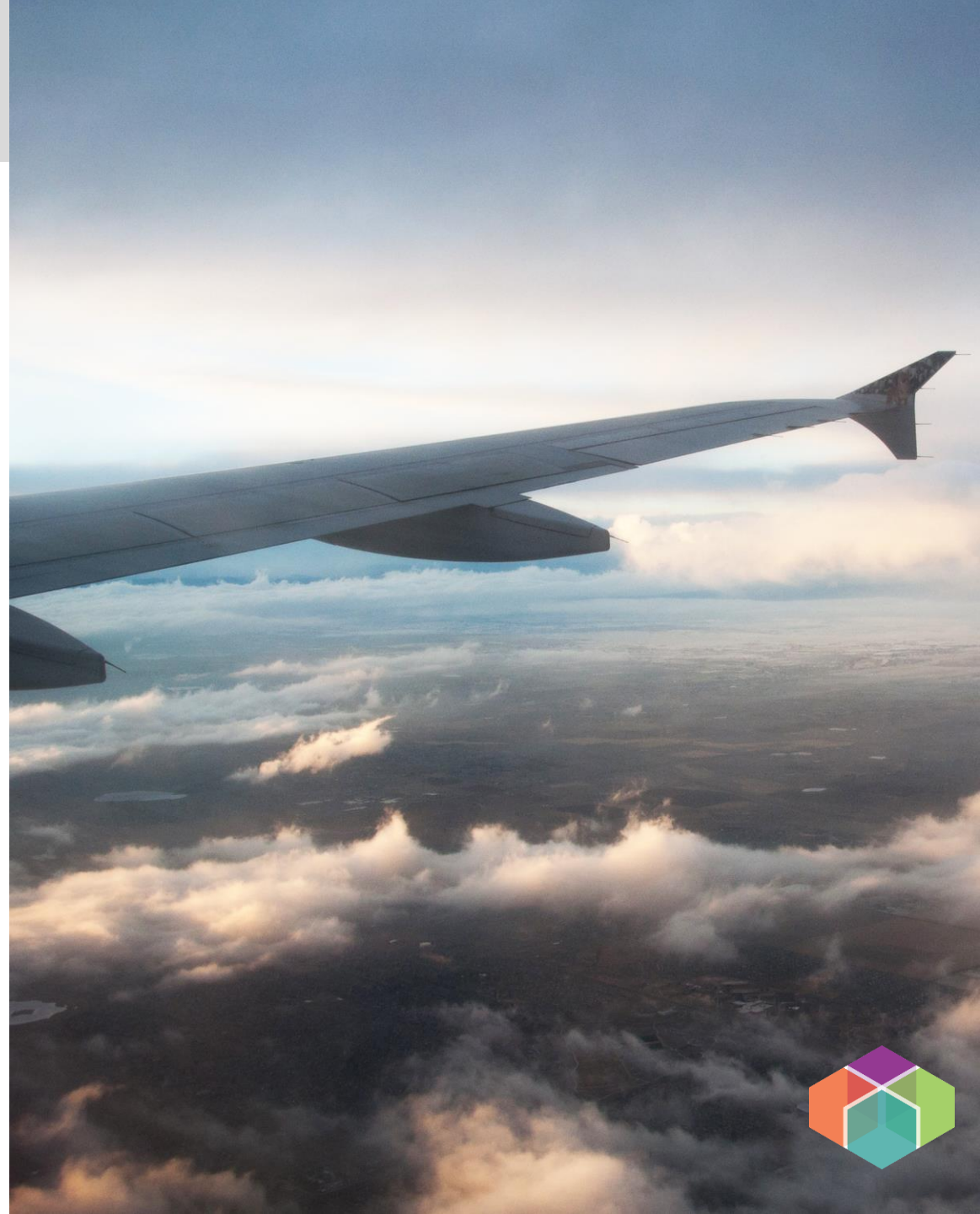
Airports in Close Proximity

Sea-Tac, Renton and Boeing Field are home to the region's most challenging airspace



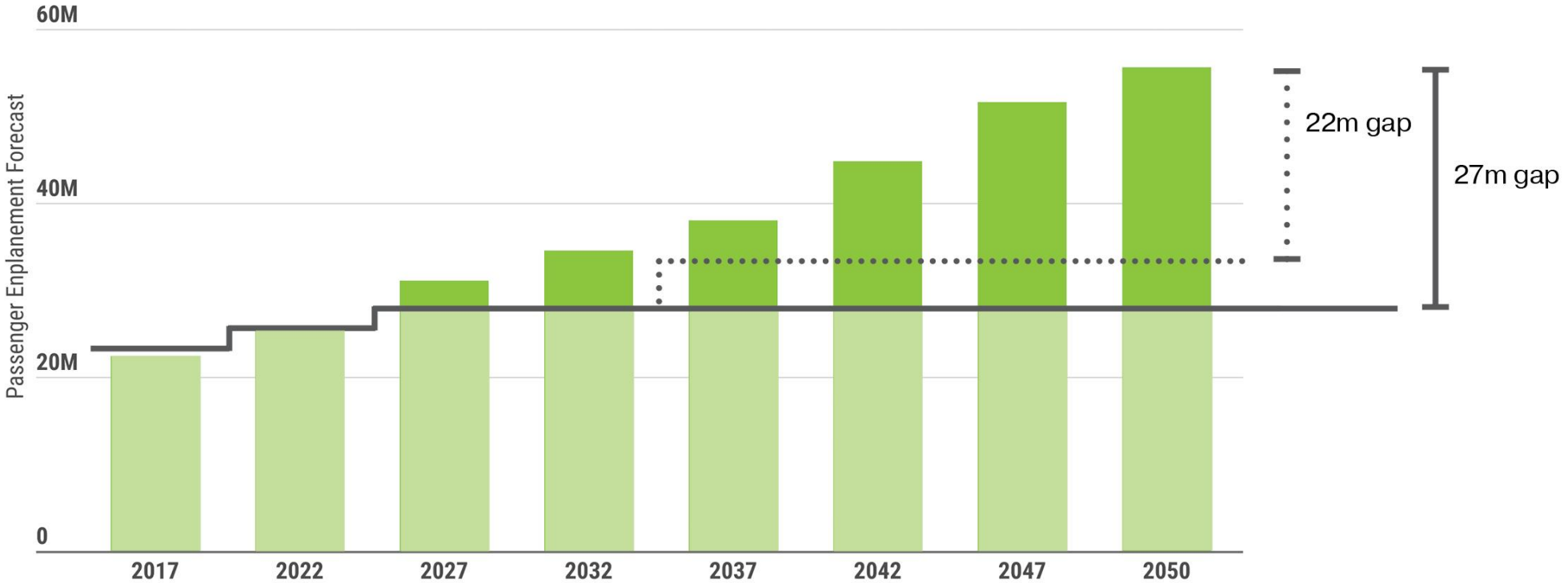
Airspace Constraints

- Terrain, such as Cascade Range
- Proximity of airports to each other
- Historic noise abatement
- Poor weather conditions
- Airfield limitations
- Existing air traffic flow patterns
- Restricted use areas, such as military
- Traffic origin/destinations
- Volume of air traffic in and out of Sea-Tac
- Air traffic procedures and complexities



Commercial Service Gap Analysis

Combined Sea-Tac and Paine Field Commercial Capacity/Demand



- Includes Sea-Tac 2027 SAMP Near Term Projects
- Includes Sea-Tac SAMP Long Term Vision Projects



Commercial Service Gap Analysis

Assessment of commercial service passenger needs through 2050

Puget Sound Central Region	Forecast of passenger enplanements			
	2017	2022	2027	2050
Passenger enplanements (high forecast)	22,450,500	25,400,000	31,100,000	55,600,000

Source: WP #1, WSP

Note: Low forecast for 2050 is 49,300,000 enplanements based on unconstrained forecast

PAE + Sea-Tac	Potential passengers accommodated			
	2017	2022	2027	2050
1-Constrained 2027 SAMP Near Term Projects Scenario ^{1,2}	23,050,000	25,655,000	28,600,000	28,600,000
2-Constrained SAMP Long Term Vision Scenario ^{1,3}	23,050,000	25,655,000	28,600,000	33,600,000

Source: SAMP 2016, PAE Supplemental EA, 2018

Puget Sound Central Region	Gap (demand-supply)			
	2017	2022	2027	2050
1-Constrained 2027 SAMP Near Term Projects Scenario ^{1,2}	559,500	255,000	-2,500,000	-27,000,000
2-Constrained SAMP Long Term Vision Scenario ^{1,3}	599,500	255,000	-2,500,000	-22,000,000

Note:

¹Assumes PAE accommodates 600,000 annual enplanements, per Supplemental EA

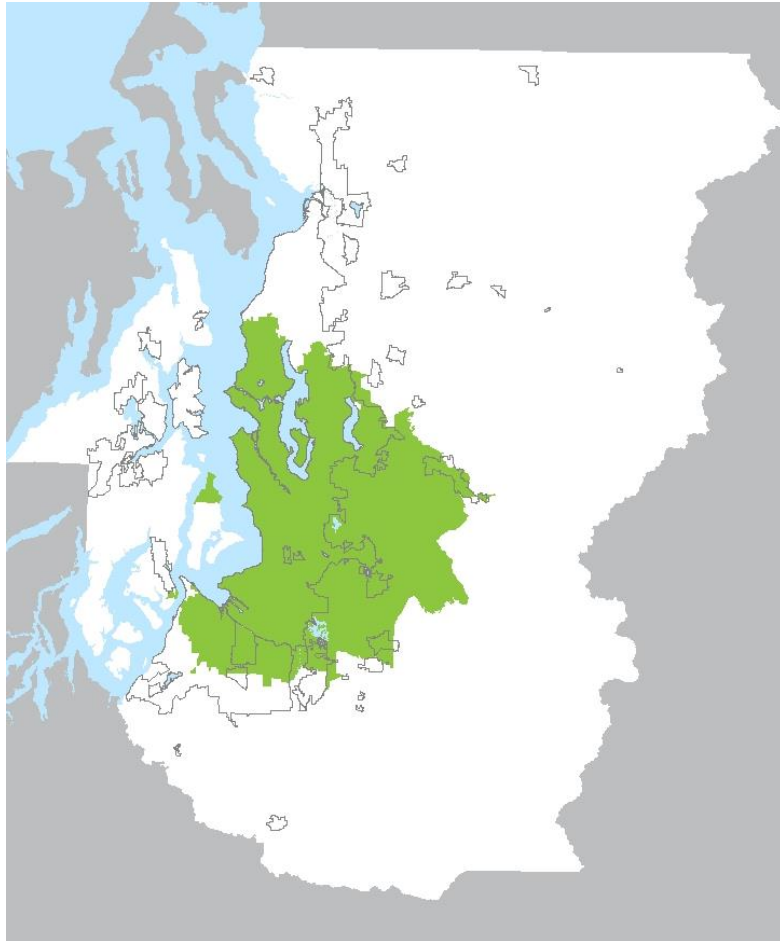
²Based on Sea-Tac SAMP Near-Term Projects, accommodating up to 28 million annual enplaned passengers

³Based on Sea-Tac SAMP Long-Term Vision, possibly accommodating up to 33 million annual enplaned passengers



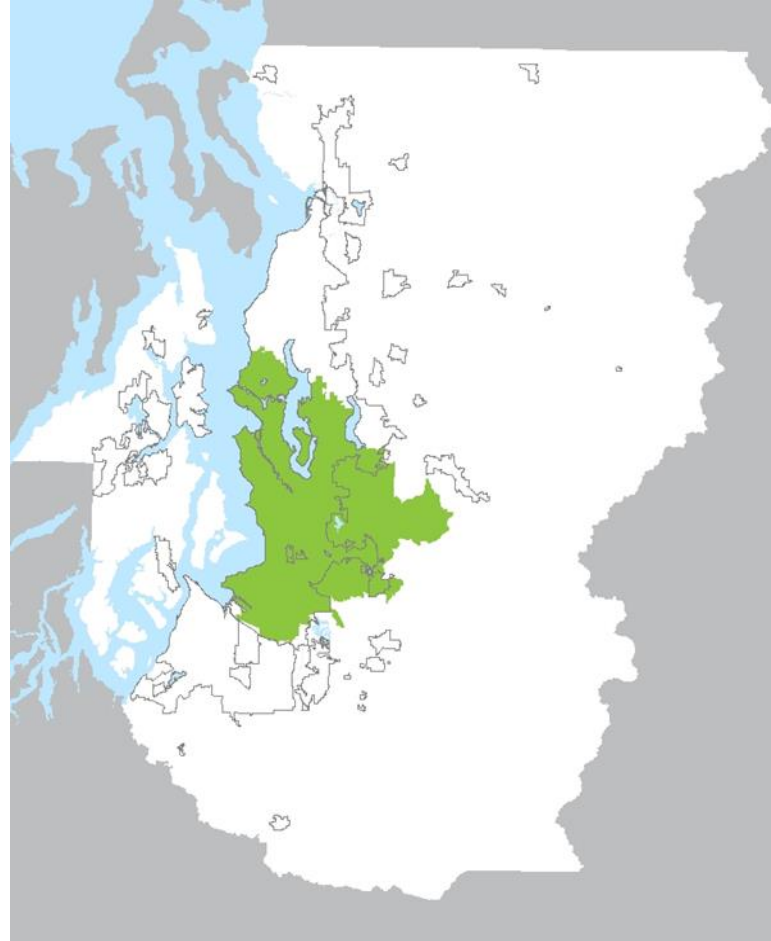
60 Minute Drive Time to Sea-Tac

Sea-Tac in 2017



People within an hour	People outside an hour
2,500,835	1,565,165
62%	38%

Sea-Tac in 2050

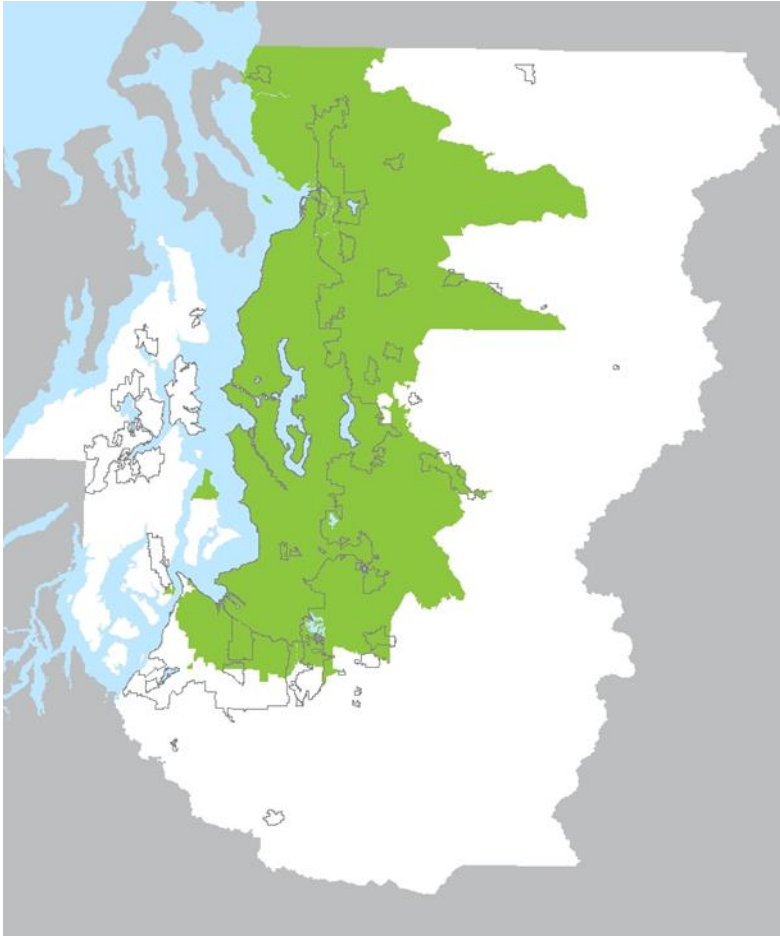


People within an hour	People outside an hour
2,472,531	3,351,469
42%	58%



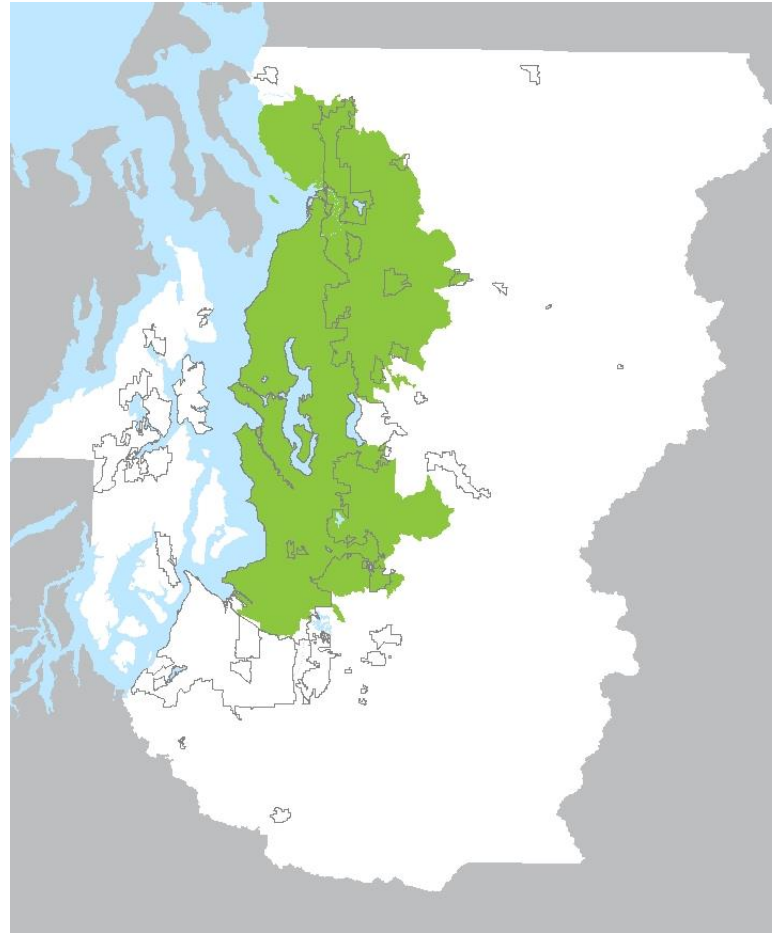
60 Minute Drive Time to Sea-Tac & Paine Field

Sea-Tac & Paine Field in 2017



People within an hour	People outside an hour
3,355,813	710,187
83%	17%

Sea-Tac & Paine Field in 2050



People within an hour	People outside an hour
4,090,318	1,733,682
70%	30%



Air Cargo Gap Analysis

Assessment of air cargo needs through 2050

PS Central Region	Air Cargo Projections				
	2017	2022	2027	2037	2050
Forecasted Air Cargo Volumes (Metric Tonnes)	539,600	650,000	750,000	963,000	1,319,000
Facility Requirements for Air Cargo Warehousing & Landside (SF)	1,184,357	1,450,110	1,677,983	2,154,591	2,951,489

Source: WP#1 and #2, WSP
Based on unconstrained forecast

Sea-Tac	Air Cargo (SF) Accommodated				
	2017	2022	2027	2037	2050
1-Constrained SAMP Near Term Projects Scenario ¹	1,739,545	1,739,545	1,739,545	1,739,545	1,739,545
2-Constrained SAMP Long Term Vision Scenario ²	1,739,545	1,739,545	1,739,545	2,024,784	2,024,784

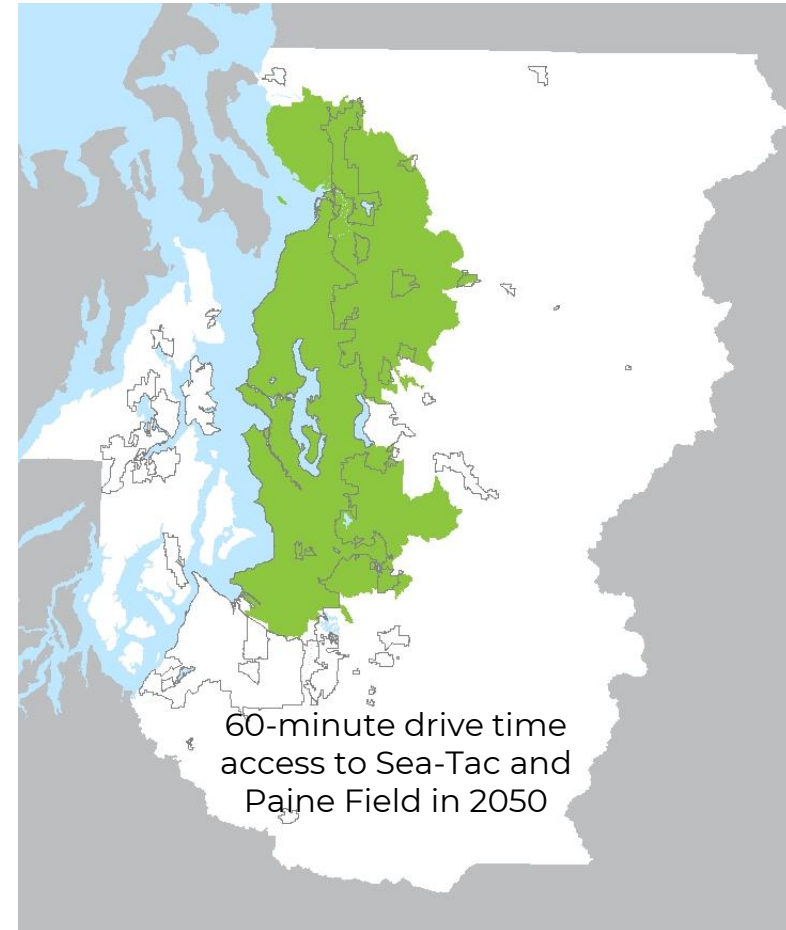
Source: Port of Seattle's LCS 2018 report and TRB's ACRP Report 143

PS Central Region	Gap (demand-supply)				
	2017	2022	2027	2037	2050
1-Constrained SAMP Near Term Projects Scenario ¹	555,188	289,435	61,562	-415,046	-1,211,944
2-Constrained SAMP Long Term Vision Scenario ²	555,188	289,435	61,562	-129,807	-926,705

Note: ¹Based on Sea-Tac SAMP Near-Term Project and Port of Seattle's LCS report, includes redevelopment of the existing north cargo area, with two additional off-warehouses and redevelopment of the south cargo warehouse. KCIA has no cargo warehousing nor proposed in the future. ²Based on Sea-Tac SAMP Long-Term Vision, includes the redevelopment of the existing north cargo area, the South Aviation Support Area (SASA), and the three off-airport warehouses. KCIA has no cargo warehousing nor proposed in the future.

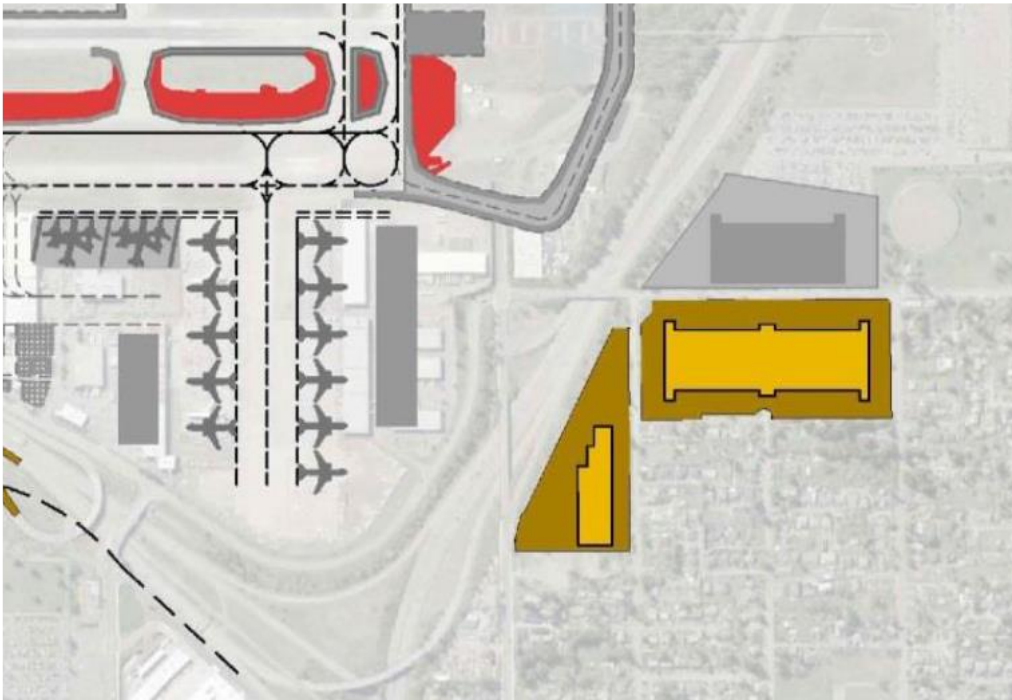
Commercial Service Challenges

- Less reliable access to commercial air service for all of Pierce and Kitsap counties
- Sea-Tac does not have capacity to meet the regional unconstrained 2050 forecast of 55 million enplanements (SAMP's Near-Term Projects could accommodate about 28 million enplanements)
- Due to airspace and landside constraints, Boeing Field (KCIA) has limited ability to accommodate more passengers or expand
- Paine Field is currently limited to 600,000 annual enplanements (2018 Sup. EA)



Air Cargo Challenges

- Limited on-airport cargo facilities at Sea-Tac (Near-Term Projects would add 420,000 SF of off-airport cargo warehousing)
- UPS serves Boeing Field (KCIA), with limited ramp and landside space



Sea-Tac Near-Term Cargo Projects



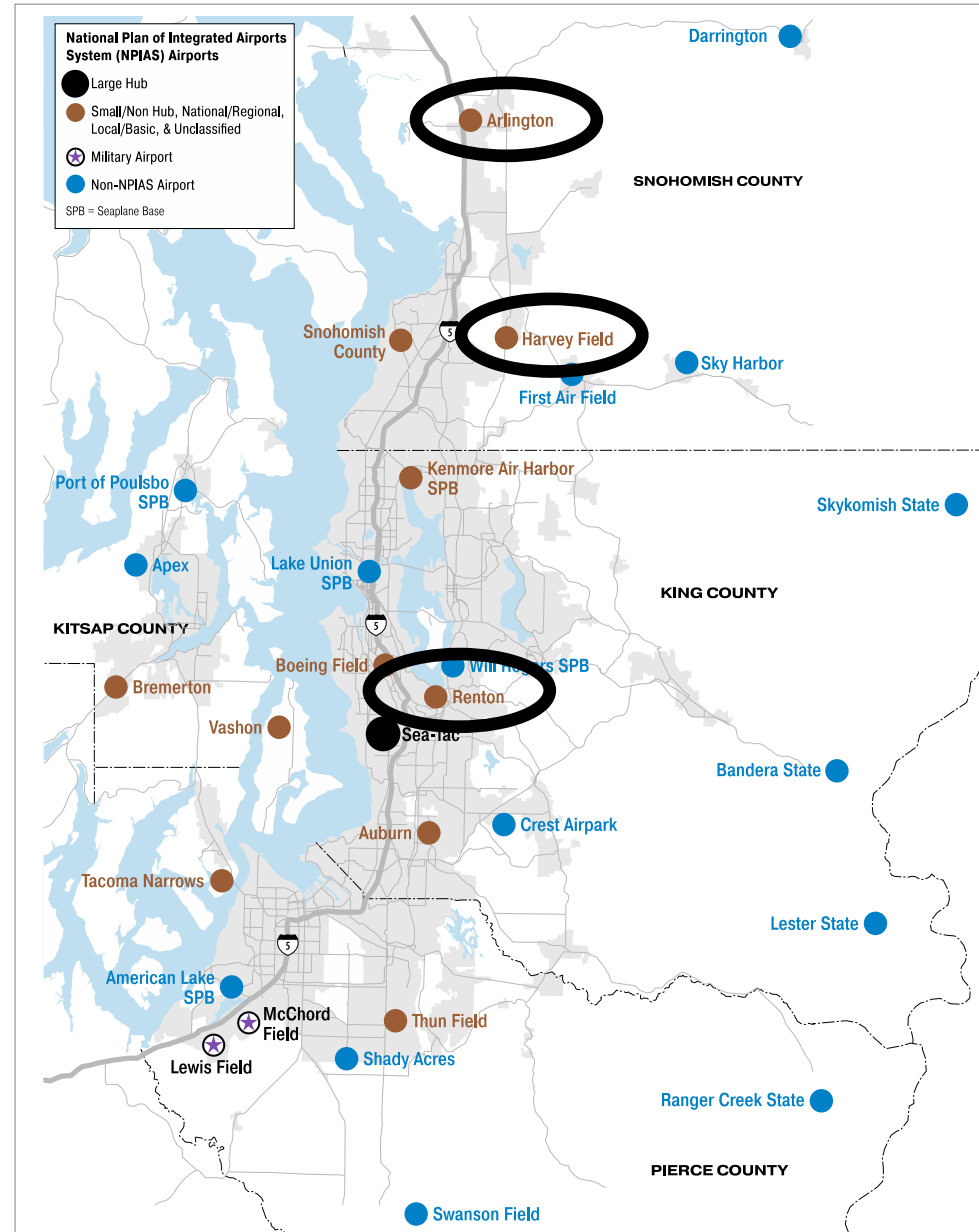
KCIA Air Cargo Facilities and Pass. Terminal



General Aviation Challenges

Airports approaching 80% airfield capacity by 2050:

- Arlington Municipal
- Harvey Field
- Renton Municipal



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Upcoming

Statewide Commercial Aviation Coordinating Commission: Charged with selecting site(s) by 2022



Thank you

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PSRC

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