

Regional Aviation Baseline Study



Puget Sound Regional Council

Today's Briefing

- Scenario Development & Economic Analysis
- Analysis of Region's Airports



Scenario Development & Economic Analysis



Near-Term Challenges

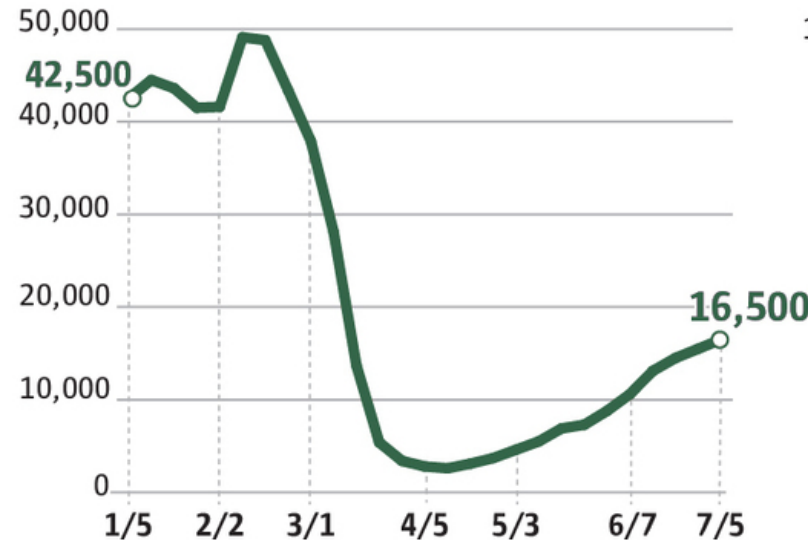
CORONAVIRUS ECONOMY DAILY CHART

Growth in Sea-Tac Airport passenger traffic has slowed

The number of passengers going through Seattle-Tacoma International Airport is still rising, but the pace has tapered off.

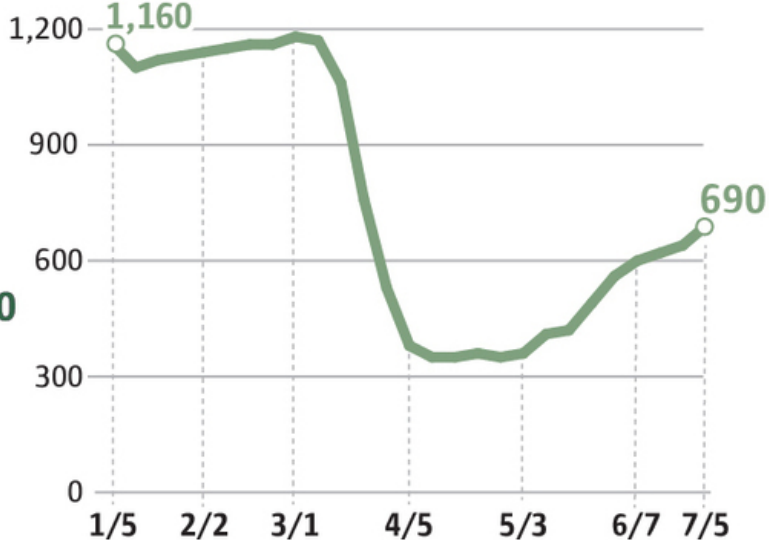
Week's daily average, for Sunday through Saturday

TSA-screened passenger volume



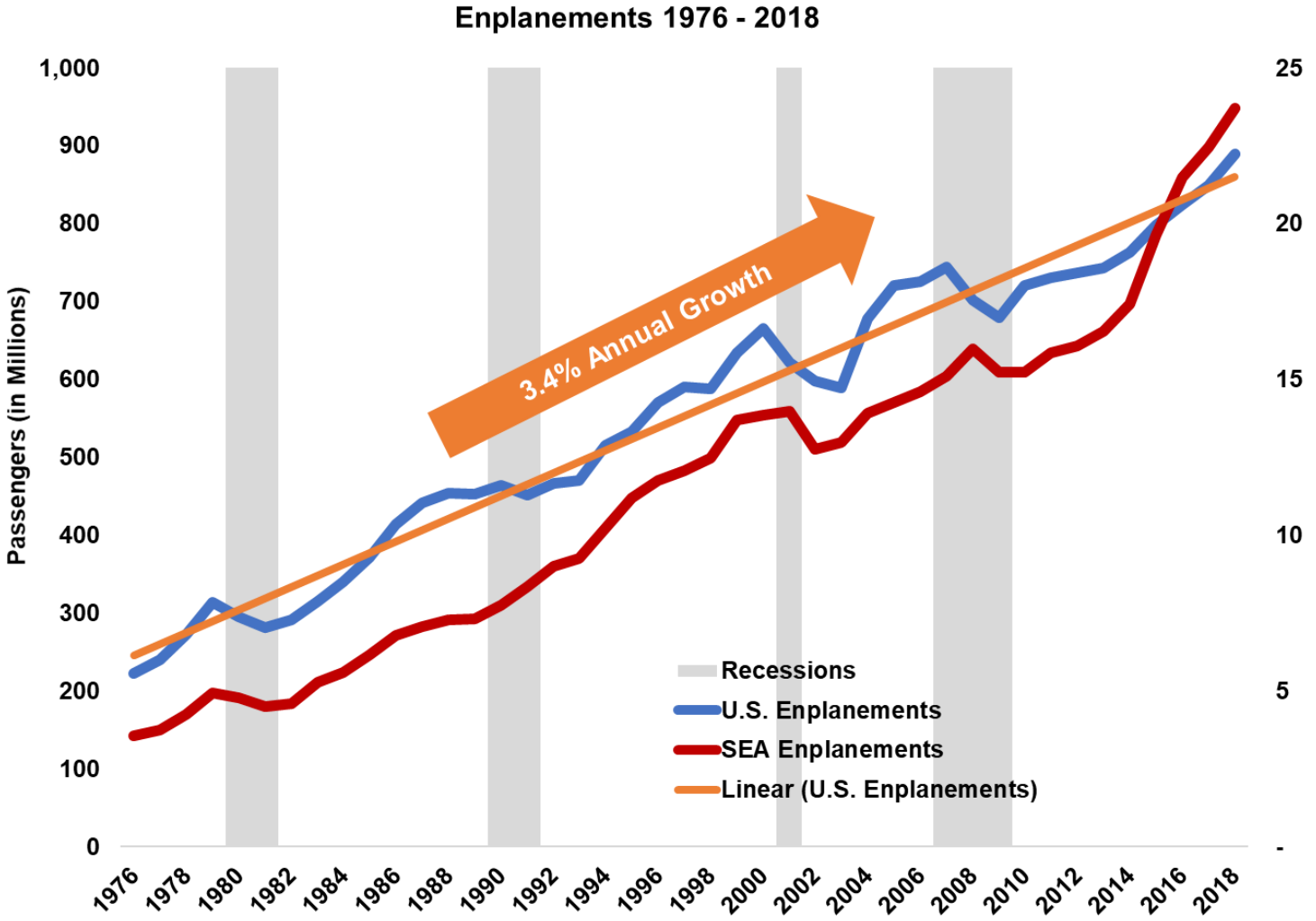
Source: Port of Seattle

Aircraft takeoffs and landings



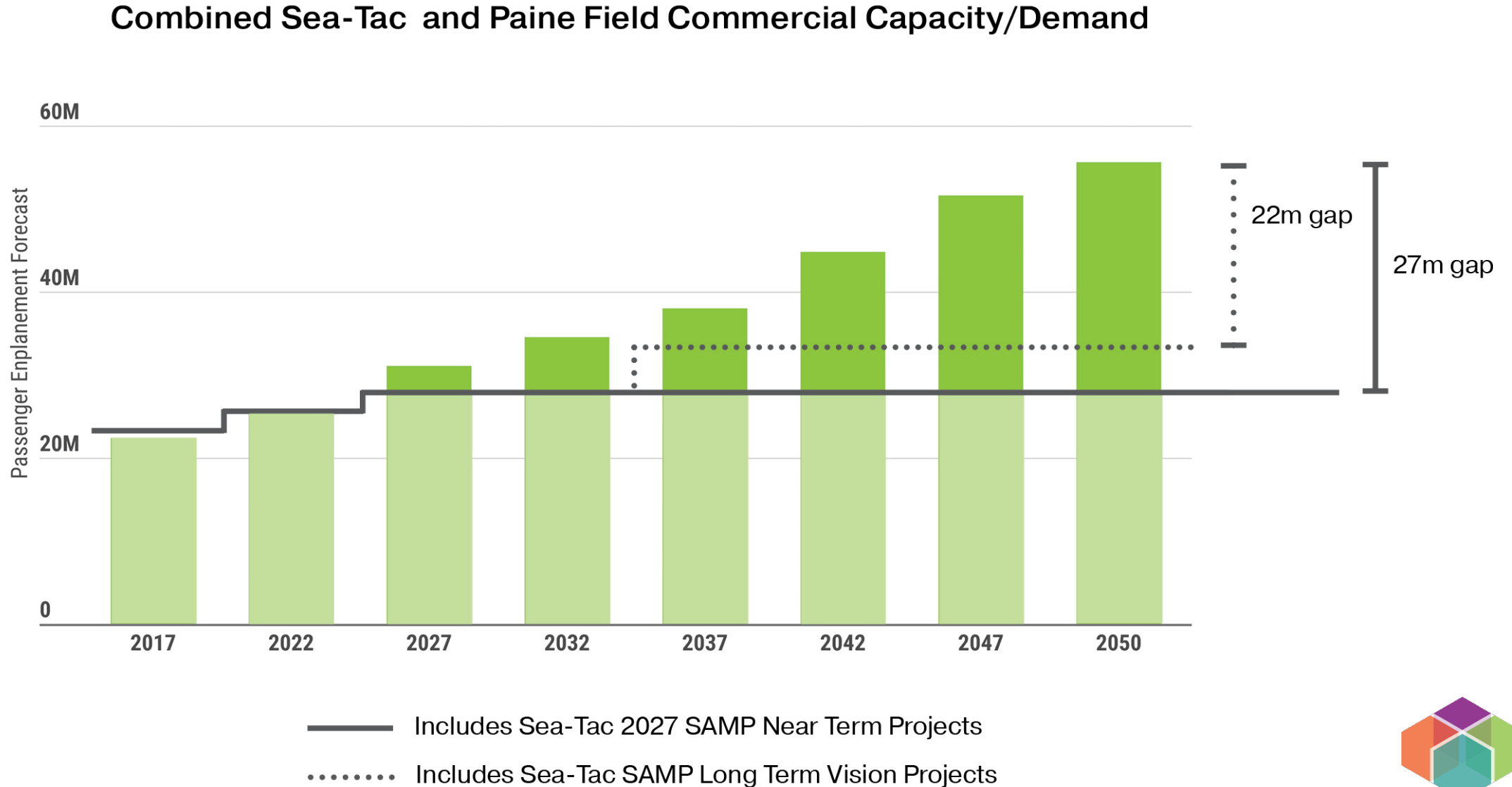
THE SEATTLE TIMES

Long-Term Commercial Aviation Trends



Source: International Civil Aviation Organization (ICAO) for the U.S. Total, FAA Terminal Area Forecast (TAF) for SEA.

Commercial Service Forecast & Gap Analysis



Scenarios Analyzed to Address 2050 Demand

Scenario 3: Meet 100% of demand

55 million

Scenario 2: Meet 80% of demand

44 million

Scenario 1: Baseline (50-60% of demand)

33 million

28 million

2050 Passenger Enplanement Forecast



Scenario 1: Baseline (50-60% of Demand)

Existing Commercial Facilities

- Sea-Tac: Implements range of near-term and long-term projects
 - Increase gates from 83 to estimated 105-113
- Paine Field: Maintains current capacity
 - Limited to 24 flights/day

New Commercial Airports Required

- No new commercial airports

Scenario 2: Meet 80% of Demand

Existing Commercial Facilities

- Sea-Tac: Implements near-term and long-term projects
 - Increase gates from 83 to 113
- Paine Field: Maintains current capacity
 - Limited to 24 flights/day

New Commercial Airports Required

- 1-2 new commercial airports, totaling 2 runways

Scenario 2: Options for New Commercial Airports

One airport with two runways (examples)



San Jose International



Sacramento
International

Two airports with single runway (examples)



John Wayne



Bellingham International

Scenario 3: Meet 100% of Demand

Existing Commercial Facilities

- Sea-Tac: Implements near-term and long-term projects
 - Increase gates from 83 to 113
- Paine Field: Maintains current capacity
 - Limited to 24 flights/day

New Commercial Airports Required

- 1-3 new commercial airports, totaling 3 runways

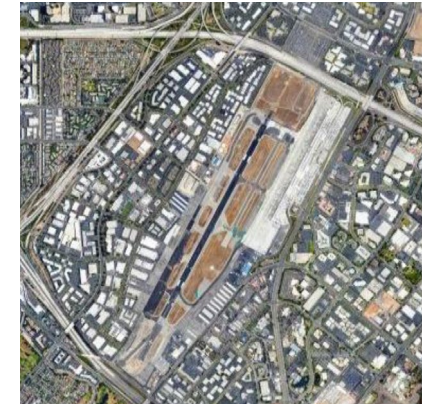
Scenario 3: Options for New Commercial Airports

One airport with three runways
(example)



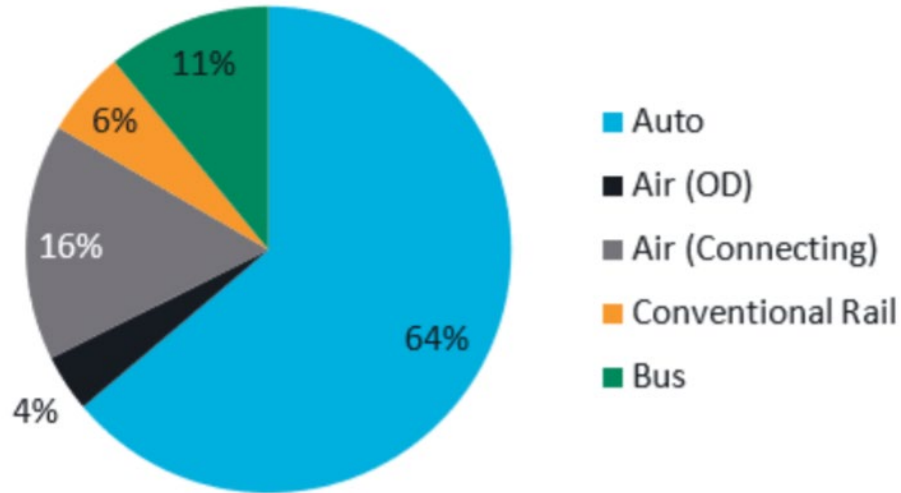
Sea-Tac International

**Multiple airports totaling
three runways**

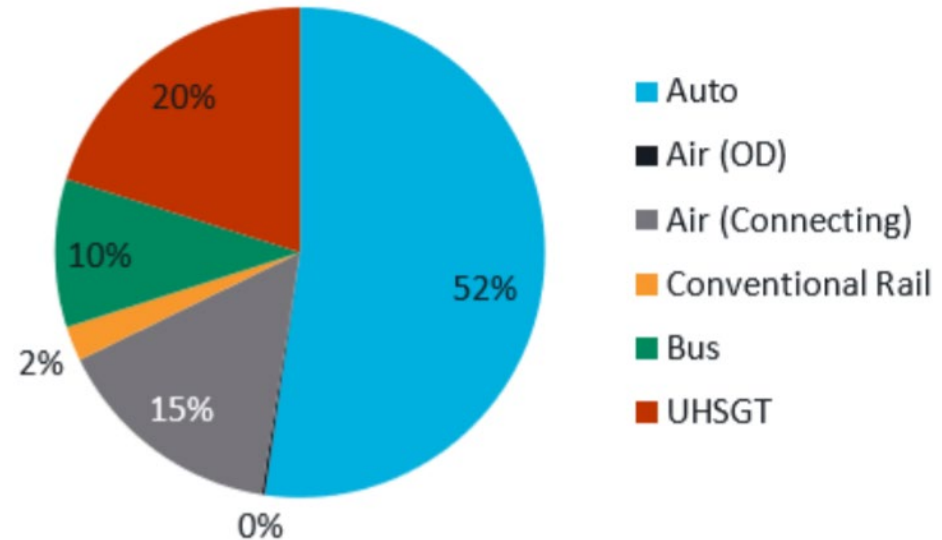


High Speed Rail (Vancouver, B.C. - Seattle – Portland)

Market Composition
(2040 Without UHSGT)



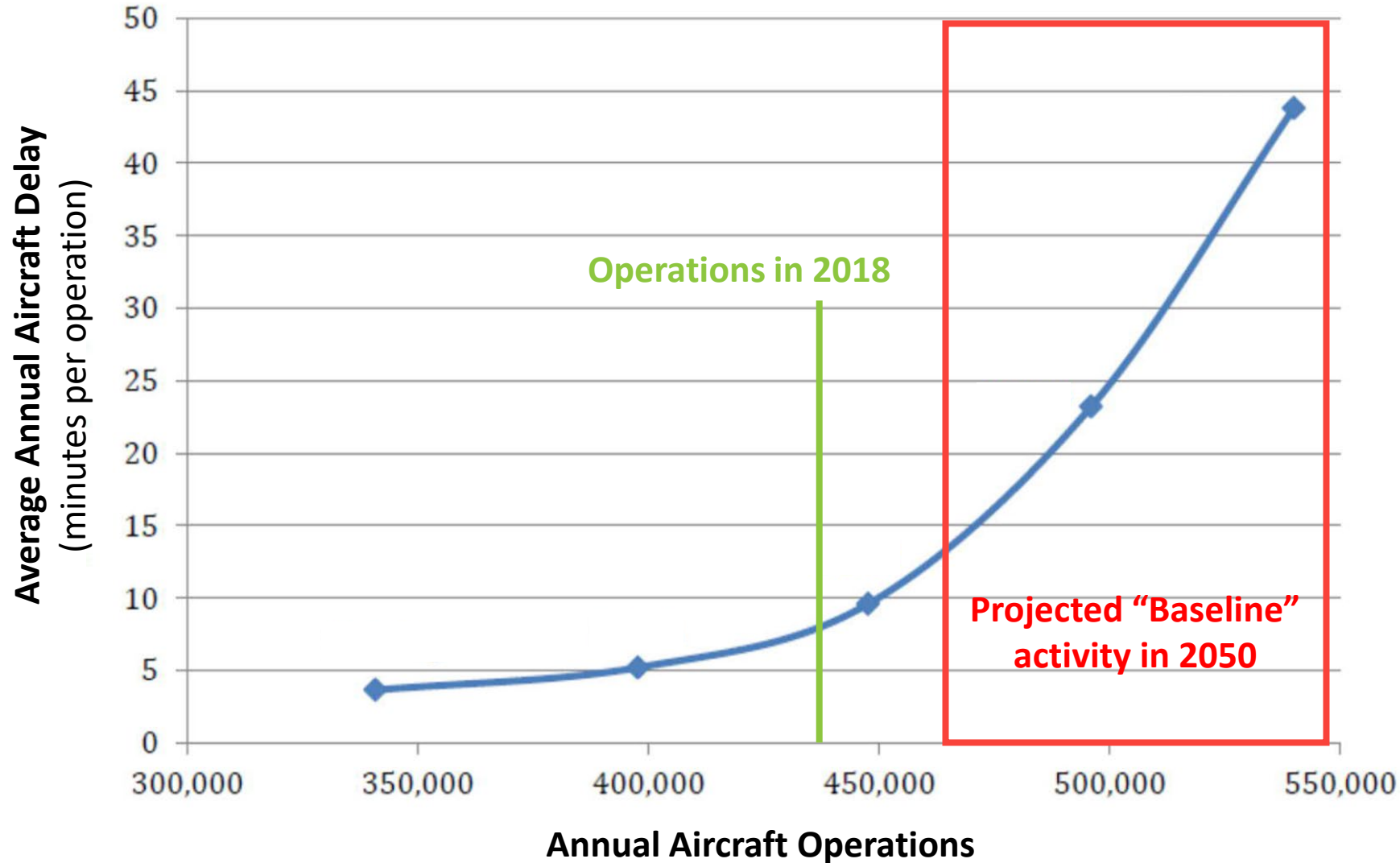
Market Composition
(2040 With UHSGT)



Estimated 1.7 - 3 million annual intercity trips by 2040

Source: WSDOT Ultra-High-Speed Ground Transportation Business Case Analysis (2019)

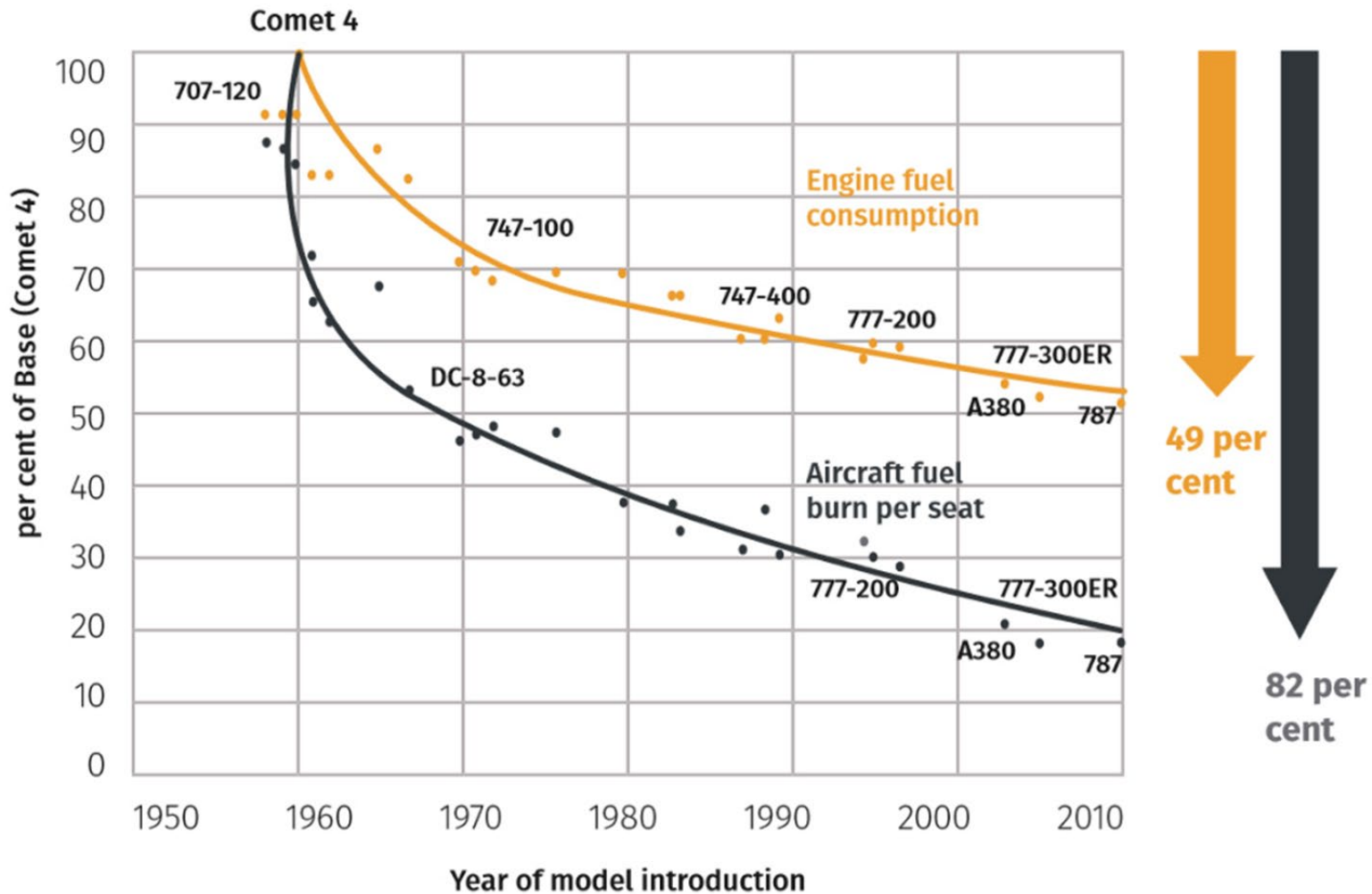
Projected Sea-Tac Commercial Service Delay



- Based on airfield capacity: airspace, runways, taxiways
- Not impacted by increase in gates
- Activity levels higher than 490,000 would likely involve FAA management of operations and/or “slot controls” like JFK, LGA and DCA

Fuel Consumption

FUEL EFFICIENCY GAIN SINCE 1960



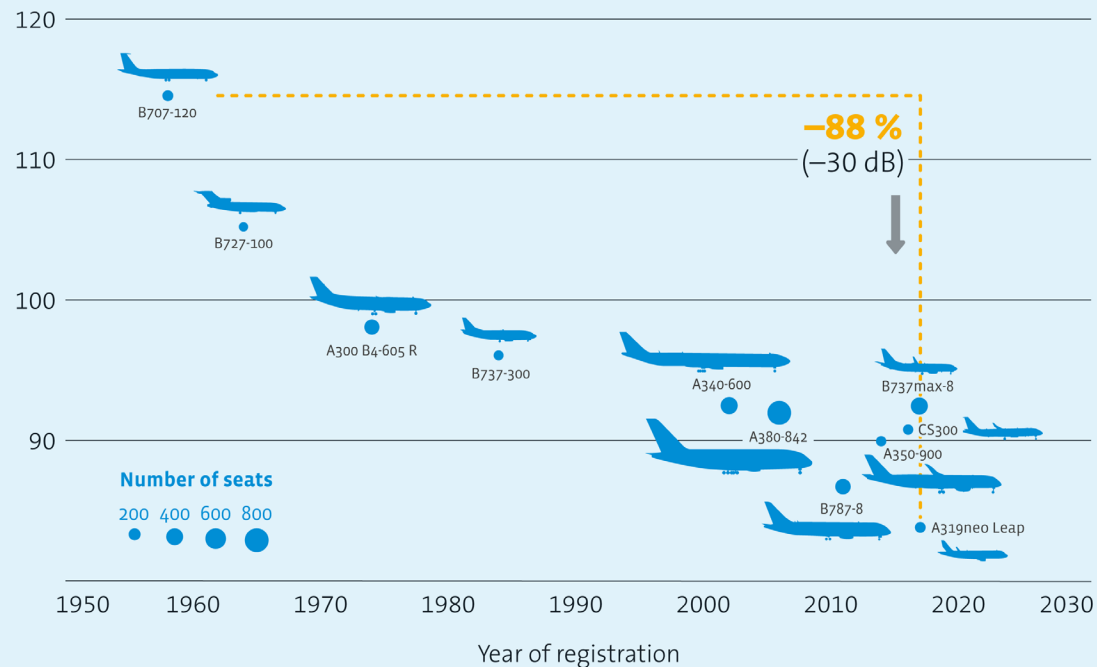
Since 1960:

- Engine fuel consumption has decreased by 49%
- Due to larger passenger capacity, fuel consumption per passenger has decreased by 82%
- Future fuel types and efficiency should reduce fuel consumption

Commercial Aircraft Noise

Development of aircraft noise emissions

Lateral noise level standardized to 500 kN EPNdB



* EPNdB: Effective perceived noise in decibels
Source: CFD Software E + F GmbH Berlin

www.bdl.aero

- Newer aircraft models have lower noise emissions
- Higher volume of operations mean that airport impacted communities experience more consistent noise at lower decibel levels

Economic Impact

- Scenario 1:** Would support an additional **\$4 - \$9 billion** in economic activity and **27,000 – 61,000 added jobs**.
- Scenario 2:** Would support an additional **\$20 billion** in economic activity and **135,000 added jobs**.
- Scenario 3:** Would support an additional **\$31 billion** in economic activity and **209,000 added jobs**.

Economic benefit of airport activity includes direct and indirect jobs and labor and business income.

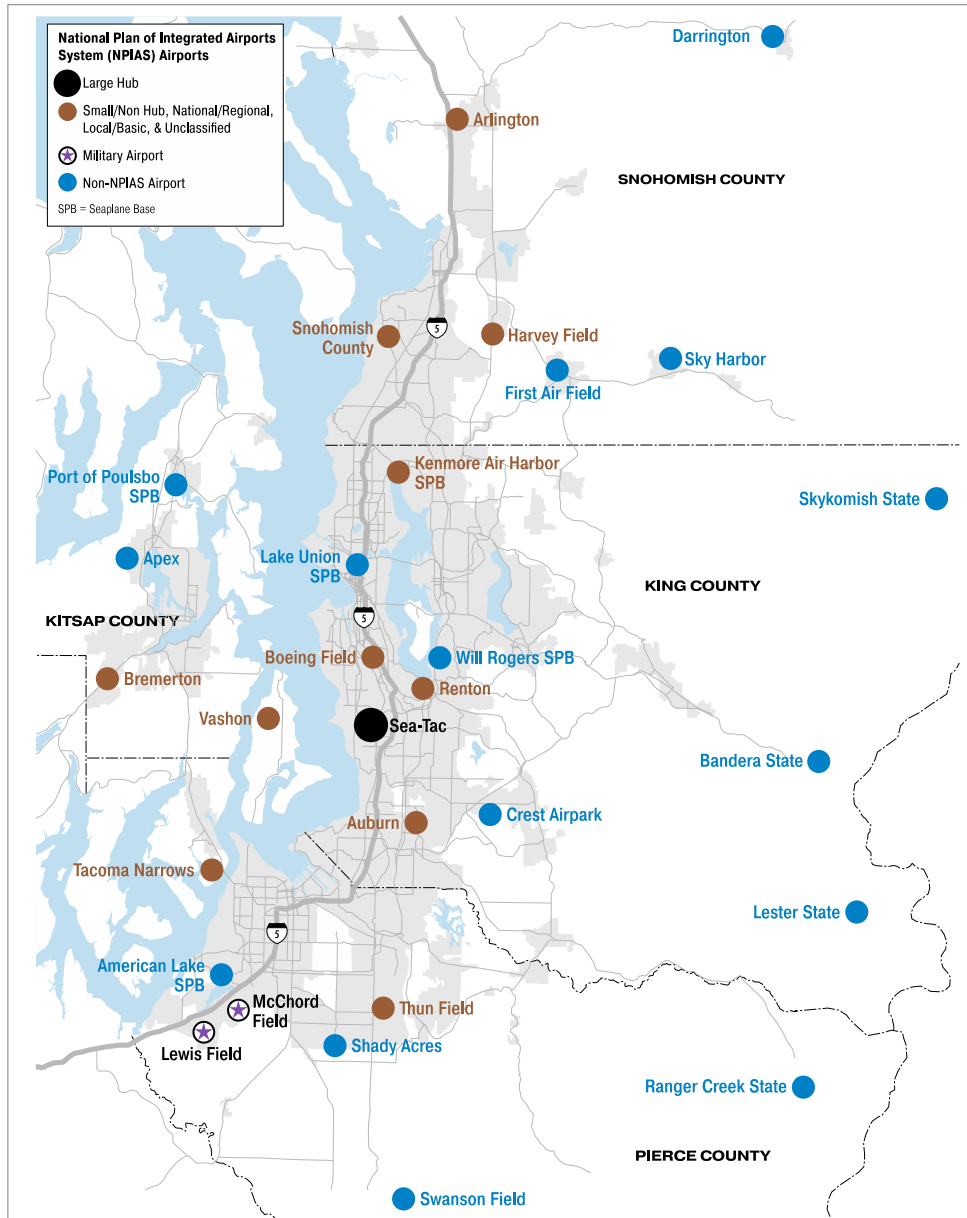
Comparison of Scenarios

Scenario 1: Baseline 50-60% of 2050 demand met	Scenario 2 80% of 2050 demand met	Scenario 3 100% of 2050 demand met
<p>460-540k annual operations 2 commercial airports 0 additional runways</p> <hr/>	<p>720k annual operations 2-4 commercial airports 2 additional runways</p> <hr/>	<p>900k total operations 2-5 commercial airports 3 additional runways</p> <hr/>
<p>28-33 million enplanements 22-27 million unmet enplanements</p> <hr/>	<p>44m enplanements 11 million unmet enplanements</p> <hr/>	<p>55m enplanements 0 unmet enplanements</p> <hr/>
<p>\$4-9 billion added annual benefit 27-61k added jobs</p>	<p>\$20 billion added annual benefit 135k added jobs</p>	<p>\$31 billion added annual benefit 209k added jobs</p>

Analysis of Region's Airports



29 Regional Airports



Airport Evaluation Criteria

All 29 regional airports were analyzed for the ability to potentially accommodate commercial air service.

Evaluation criteria included:

- Ability to accommodate at minimum one 7,000 ft. runway
- Airfield capacity
- Airspace analysis
- Flood zone constraints
- Ownership considerations
- Impact to aerospace manufacturing
- Transportation infrastructure
- Proximity to population and jobs

Airport Screening Results

Reasons for some airports to be dropped from consideration:

- **Renton Municipal:** airspace conflicts, airfield capacity constraints, manufacturing impacts, inability to accommodate 7,000 ft runway
- **Boeing Field & Thun Field:** dense development
- **McChord Field:** military use challenges
- **Auburn Municipal:** inability to accommodate 7,000 ft runway
- **Harvey Field:** location in floodplain

Airport Screening Results

No regional airports demonstrated the ability to support a three-runway airport.

Airports with potential to provide additional commercial capacity:

- **Arlington Municipal**
- **Bremerton National**
- **Paine Field**
- **Tacoma Narrows**

Note: First step for any current airport to provide commercial air service is for the airport owner to conduct an FAA Airport Master Plan with a commitment from at least one airline to serve the airport.

Airport Proximity to Population & Jobs (2050)

Airport	Population <60 mins. drive time		Employment <60 mins. drive time	
	#	% of total	#	# of total
Sea-Tac	2,473,000	42%	1,914,000	57%
Paine Field	2,286,000	39%	1,323,000	40%
Arlington Municipal	895,000	15%	407,000	12%
Bremerton Municipal	814,000	14%	412,000	12%
Tacoma Narrows	1,679,000	29%	735,000	22%

Airport System Proximity to Population & Jobs (2050)

Airports	Population <60 mins. drive time		Employment <60 mins. drive time	
	#	% of total	#	# of total
Paine Field + Sea-Tac	4,090,000	70%	2,682,000	80%
+ Arlington Municipal	4,134,000	71%	2,689,000	80%
+ Bremerton Municipal	4,904,000	84%	3,088,000	92%
+ Tacoma Narrows	5,333,000	92%	3,179,000	95%

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 Analysis of existing airports 		<ul style="list-style-type: none"> Community perspectives Next steps Publish Final Report 	

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



Thank you

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