CHAPTER 3: STATEWIDE ACTIVITY

Introduction

Washington's aviation system accommodates significant levels of commercial airline, commercial air cargo and general aviation activity. Over 17 million scheduled passengers currently land at Washington airports every year, and more than 600,000 tons of air cargo flow through the state's airports annually. There are over 8,000 general aviation aircraft based in the state, including piston-powered airplanes, multi-engine turboprops, business jets, helicopters, and experimental and light sport aircraft. Swift air transportation of people and goods facilitates commerce, and air cargo operations are essential to many businesses and industries across the state.

Aviation contributes to Washington's economy directly and indirectly. Airports provide jobs, generate revenue, and foster commerce. A 2001 economic impact study estimated that Washington's commercial and general aviation airports directly generated 171,000 jobs and $18.5 billion in sales output.

Continued growth in aviation demand expected over the next twenty-five years due to socio-economic growth

Continued growth in aviation demand is expected in Washington State over the next 25 years, as the state's population and economy continue to grow steadily. Historically, socio-economic growth has resulted in increased aviation activity for business, freight, emergency access, public safety and recreation. Significant growth in population, as well as personal income and employment, is expected in Washington over the next 25 years.

Washington's population is expected to increase by 2.6 million or 1.4 percent annually through 2030

The population in Washington has doubled in the last 30 years and is expected to increase an additional 2.5 million between 2005 and 2030. Washington's population was 6.3 million in 2005, ranking 14th in the nation. By 2030, the population will have grown to 8.8 million[10]. This represents an annual growth of 1.4% which exceeds the national population growth average of 1.0%.

Significant population growth is concentrated in four regions of the state:

- Puget Sound: 1.4 million increase from 2005 to 2030
- Southwest Washington: 290,000 increase from 2005 to 2030
- Spokane Area: 120,000 increase from 2005 to 2030

[10] NPA Economic Projections, 2007

- Tri-Cities Area: 100,000 increase from 2005 to 2030

Growth in income and employment in Washington State is expected to remain above national average

Growth in Washington's economy has historically exceeded the national average and is expected to continue above the national average through 2030. Between 1975 and 2005, Washington's total income grew at 3.9% annually on average while national income grew at 3.1%. Washington's total income is expected to grow at 3.1% annually from 2005 to 2030, while national income is expected to grow at 2.8%. In terms of employment, Washington enjoyed a 2.8% annual growth between 1975 and 2005, compared to a national average of 1.9%. Employment in Washington is expected to grow at 1.6% annually between 2005 to 2030, compared to a national average of 1.3%.

An overview of statewide commercial passenger service, general aviation, and air cargo activity is presented below.

Commercial Passenger Service Overview

Commercial air transport activity is a critically important generator of economic and quality-of-life benefits to the State of Washington

Effective and competitive airline service is critically important to Washington State's economy, providing mobility to Washington businesses and their customers, and offering convenient and affordable transport to Washington residents and visitors.

Commercial air transportation offers many benefits to commerce, economic development, and the quality of life within Washington State:

- Facilitates commerce, by permitting face-to-face meetings between companies in Washington State and their customers
- Helps to attract corporate investment in the state: Companies which choose to locate facilities in Washington State may do so in part because of the availability of effective air service
- Enables rapid leisure and personal travel by residents of Washington State, as well as visitors to the state
- Allows for fast and convenient shipment of manufactured goods produced or consumed in Washington State
- Allows for expedited shipment of time-critical documents and commodities, including high value business products, cancelled checks and medical supplies

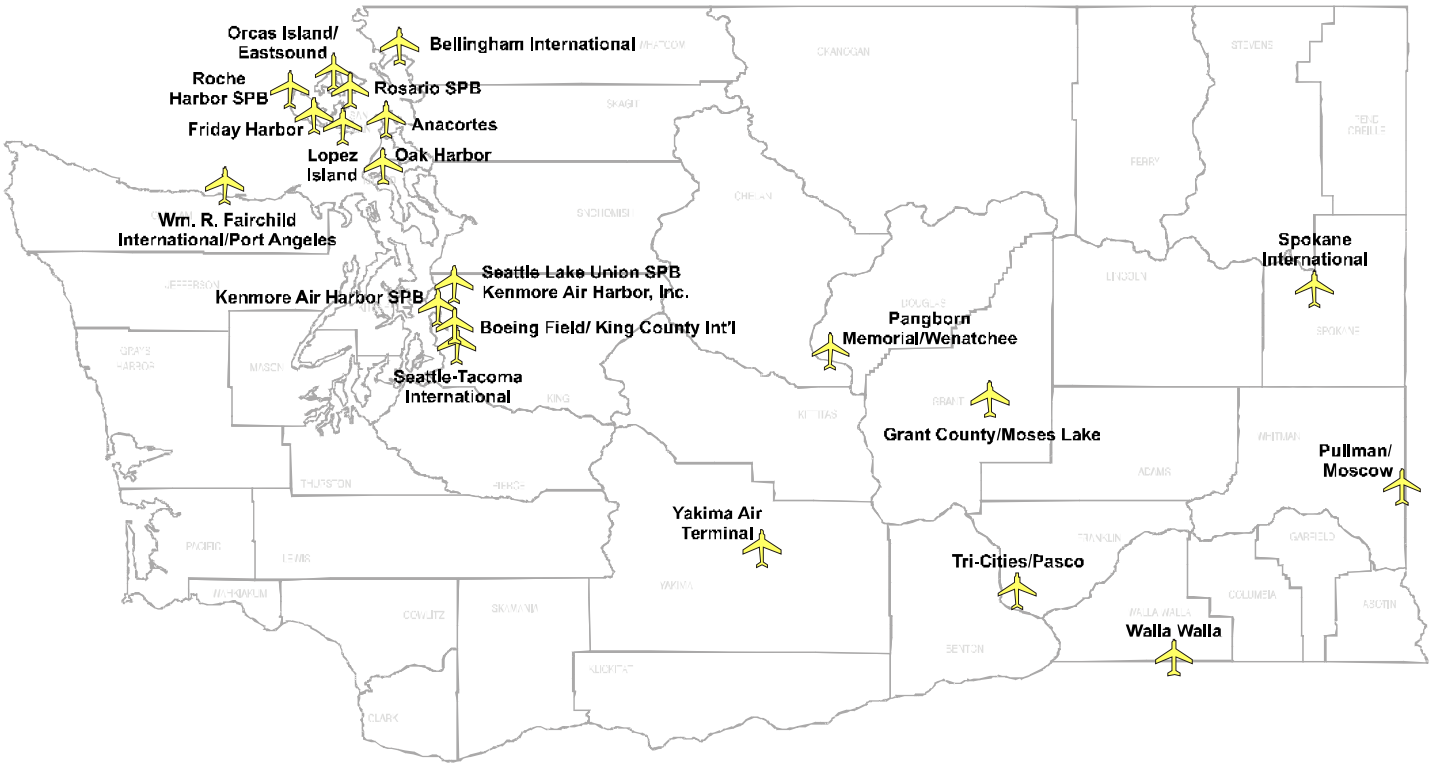
In 2006, commercial service airports in Washington State accommodated 17 million passenger enplanements and 528,000 commercial passenger aircraft operations.
There are 20 Commercial Service airports in Washington State which either currently receive or were recently served by scheduled commercial

passenger air service. These 20 airports are listed in Exhibit 3-1 on the following page and identified in Exhibit 3-2.

Exhibit 3-1: Washington Airports with Commercial Passenger Service[11]

Anacortes	Pullman/Moscow
Bellingham International	Roche Harbor SPB
Boeing Field/King County Int'l	Rosario SPB
Friday Harbor	Seattle Lake Union SPB
Grant County/Moses Lake	Seattle-Tacoma International
Kenmore Air Harbor, Inc.	Spokane International
Lopez Island	Tri-Cities/Pasco
Oak Harbor	Walla Walla
Orcas Island/Eastsound	Wm. R. Fairchild Int'l/Port Angeles
Pangborn Memorial/Wenatchee	Yakima Air Terminal

Exhibit 3-2: Map of Washington Airports with Commercial Passenger Service



[11] The abbreviation "SPB" refers to Seaplane Bases

Exhibit 3-3 shows passenger enplanements (boardings) at the 20 Commercial Service airports in Washington in 2006.

Exhibit 3-3: Airports Ranked by Passenger Enplanements, *CY 2006*[12]

Airport	Passenger Enplanements	Share of Total	Cumulative Share
Seattle-Tacoma	14,981,560	86.6%	86.6%
Spokane	1,617,895	9.4%	96.0%
Tri-Cities/Pasco	225,880	1.3%	97.3%
Bellingham	136,448	0.8%	98.1%
Yakima	55,506	0.3%	98.4%
Seattle Boeing Field	52,447	0.3%	98.7%
Wenatchee	39,798	0.2%	99.0%
Seattle Lake Union SPB	34,000	0.2%	99.2%
Walla Walla	28,260	0.2%	99.3%
Pullman/Moscow	23,680	0.1%	99.5%
Port Angeles	16,034	0.1%	99.5%
Oak Harbor	13,500	0.1%	99.6%
Friday Harbor	12,500	0.1%	99.7%
Grant County/Moses Lake	12,417	0.1%	99.8%
Rosario	11,000	0.1%	99.8%
Kenmore Air Harbor	10,000	0.1%	99.9%
Lopez Island	7,500	0.0%	99.9%
Eastsound/Orcas Island	4,800	0.0%	100.0%
Roche Harbor	4,000	0.0%	100.0%
Anacortes	2,930	0.0%	100.0%
Total	**17,290,155**	**100.0%**	**100.0%**

The vast majority of Washington State commercial air transport traffic and activity is concentrated at two airports: Seattle-Tacoma International Airport ("SeaTac") and Spokane International Airport, which combined account for more than 96 percent of the state's enplanements and 67 percent of its commercial aircraft operations.

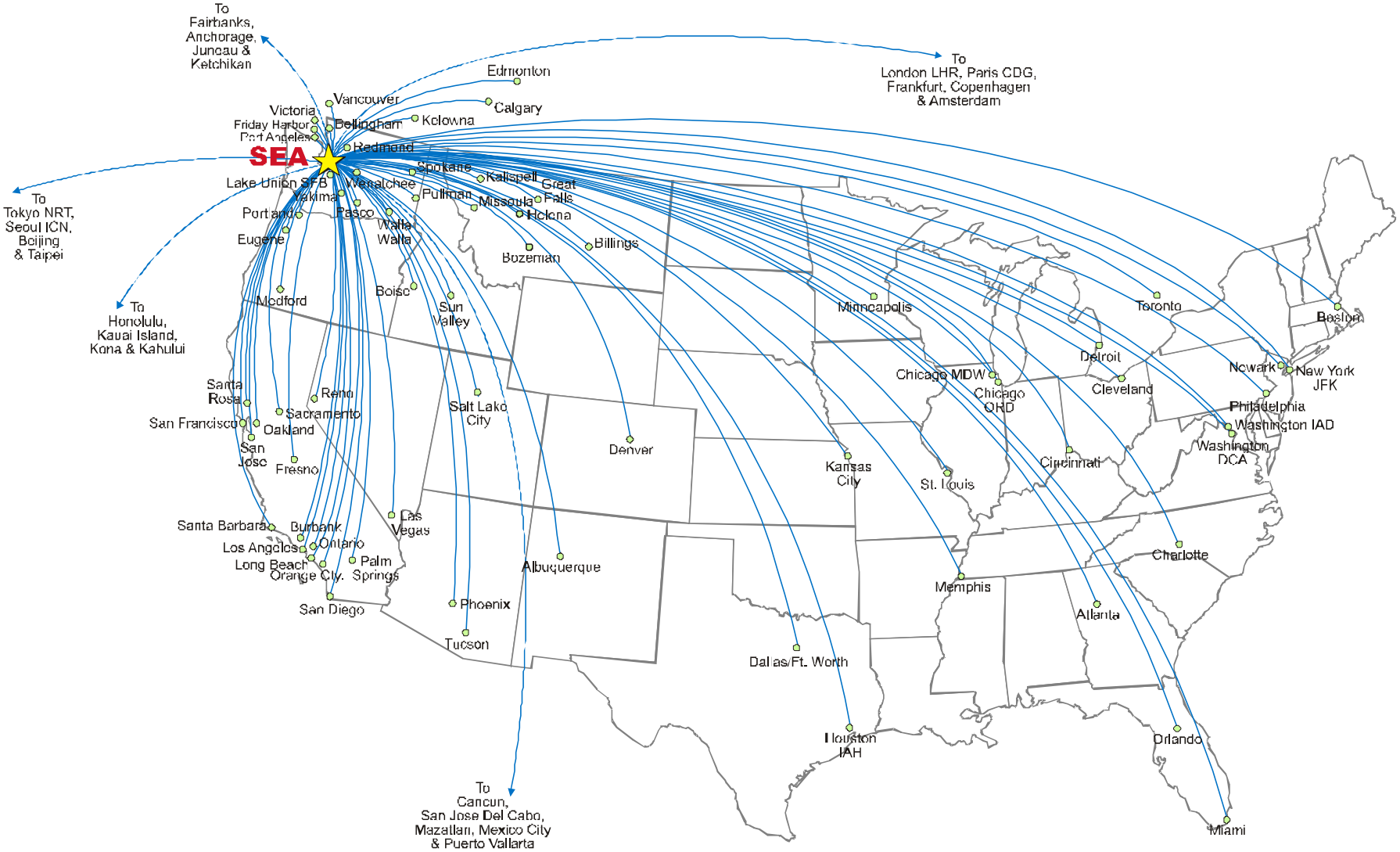
Sea-Tac accounts for 87% of Washington State's commercial passenger traffic

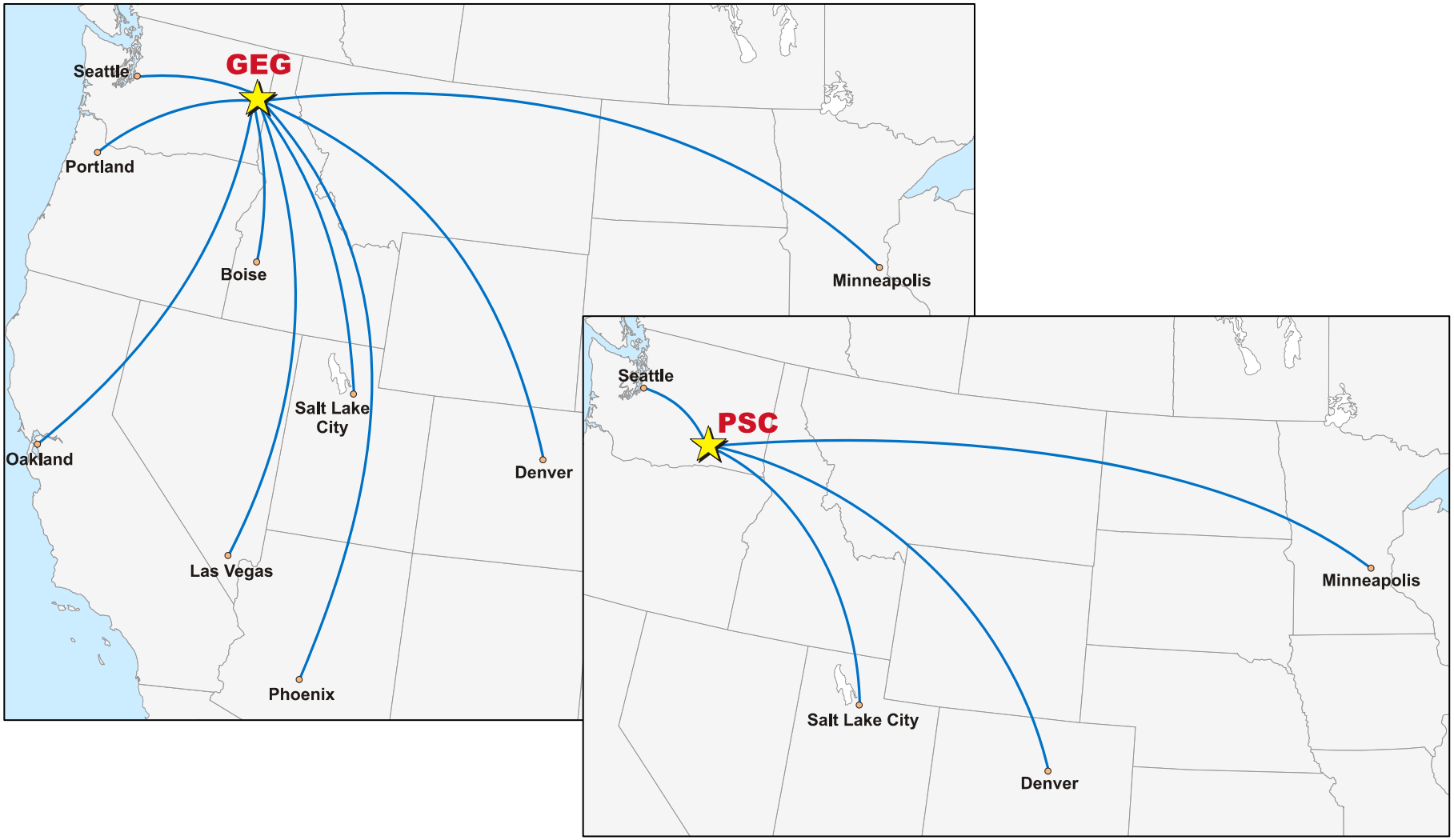
Sea-Tac in particular drives aviation activity in the state. As of April 2007, Sea-Tac offered scheduled service to 71 destinations in the United States and 16 outside the U.S. Twenty-five airlines currently offer scheduled passenger service at Sea-Tac. Alaska Airlines and its code-sharing regional partner carrier, Horizon, have their primary connecting hub at Sea-Tac, and provide more than 50 percent of the airport's seat capacity.

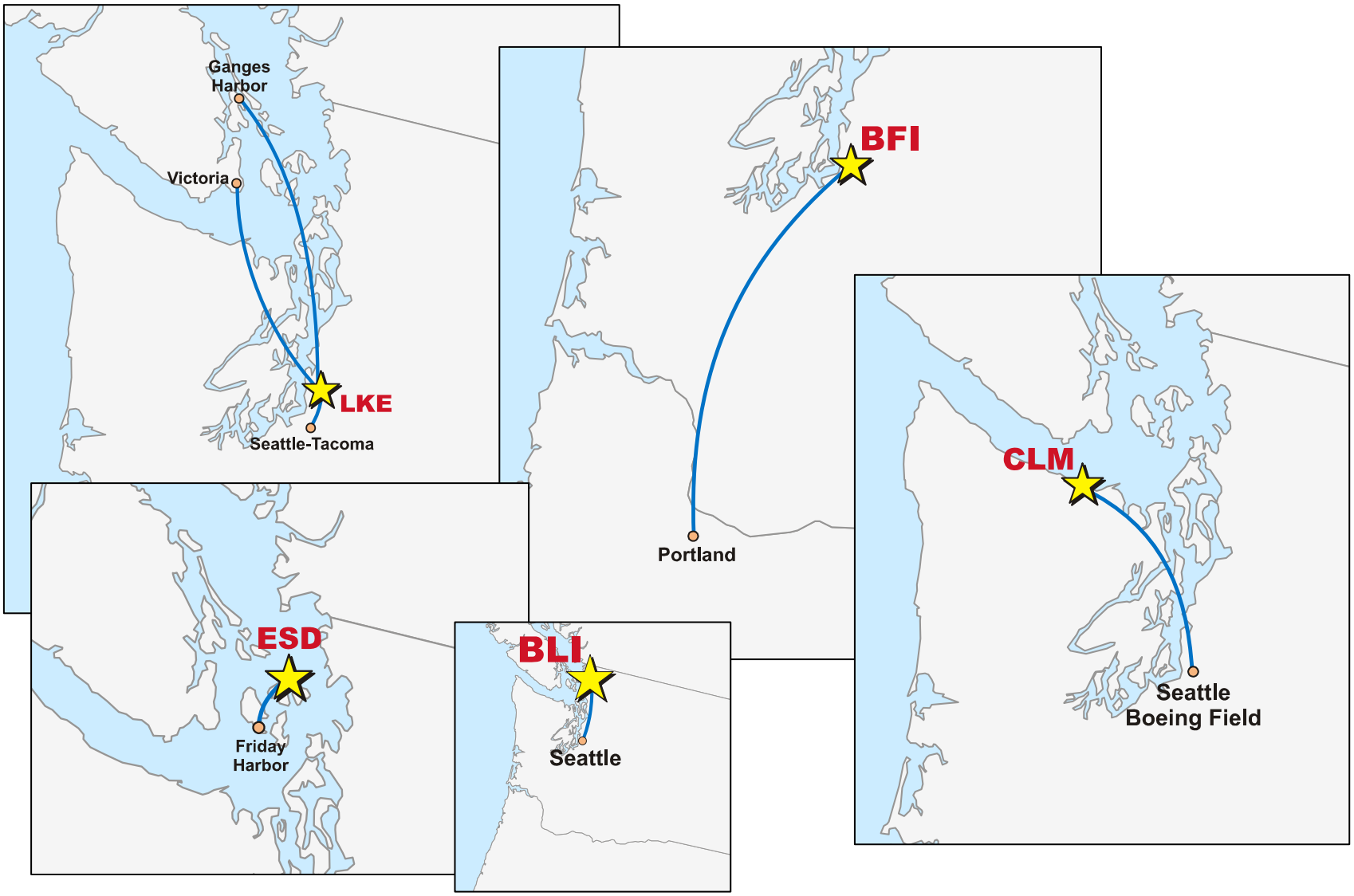
Route maps of current scheduled airline service from Sea-Tac and the other Washington commercial airports are displayed in Exhibit 3-4.

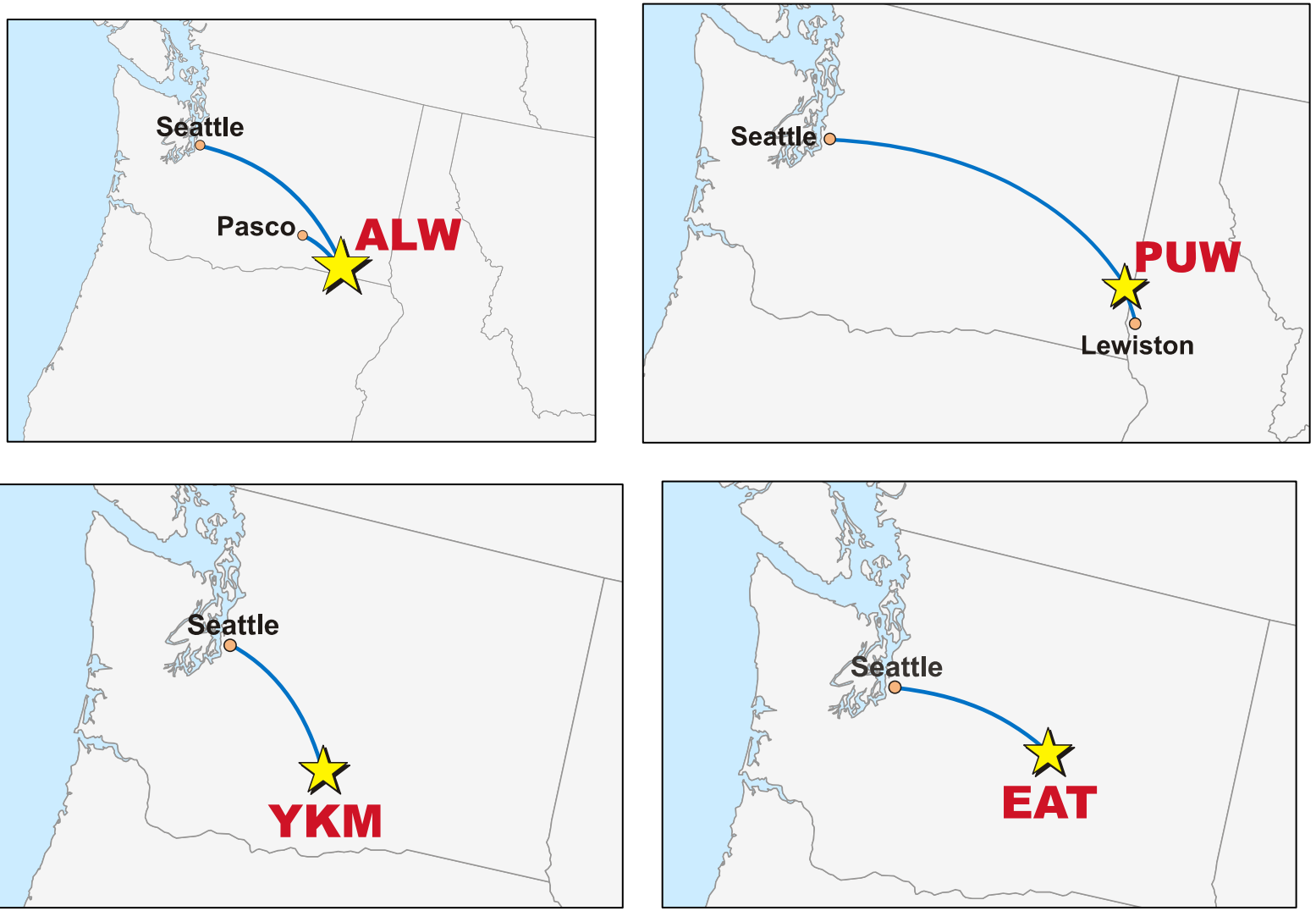
[12] Sources: Data provided by airports, Federal Aviation Administration Terminal Area Forecasts (TAF), and US DOT T100. Data for Roche Harbor and Anacortes is for 2005.

Exhibit 3-4: Washington State Commercial Airport Route Maps, *April 2007*




GEG
Seattle
Portland
Boise
Minneapolis
Salt Lake City
Oakland
Denver
Las Vegas
Phoenix
PSC
Seattle
Minneapolis
Salt Lake City
Denver


Ganges Harbor
Victoria
LKE
Seattle-Tacoma
BFI
Portland
CLM
Seattle Boeing Field
ESD
Friday Harbor
BLI
Seattle


Seattle
Pasco
ALW
Seattle
PUW
Lewiston
Seattle
YKM
Seattle
EAT

An economic impact study commissioned by the Washington State Department of Transportation estimates that commercial air transport activity produces the following economic impacts in the state economy:

- $18.1 billion in total output
- $3.9 billion in employee compensation
- 164,000 jobs[13]

These figures understate overall economic impact and do not include additional investment in the state that occurs as a result of the availability of convenient air service. These figures also exclude the impact of aerospace and commercial aircraft manufacturing, which have a significant presence in the state.

General Aviation Overview

GA provides a wide range of essential services from business transportation to medical evacuation and agricultural support

While GA activity sits often in the shadow of commercial activity, it plays an integral role in the state aviation system. The majority of airports in Washington are used primarily for general aviation, and GA aircraft account for the largest share of aircraft operations in the state.

GA transportation provides a wide range of essential services to communities across Washington State, including:

- Business transportation
- Recreational flying
- Emergency medical
- Search and rescue
- Firefighting
- Agricultural support
- Pilot training

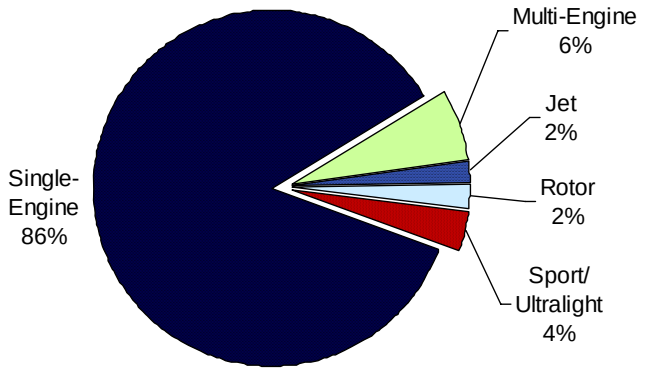
Single-engine aircraft 86 percent of total based aircraft, while jet-engine aircraft only 2 percent

Out of the 8,200 GA aircraft based at public use airports in Washington in 2005, approximately 7,000, or 86 percent, were single-engine piston-powered aircraft. Multi-engine aircraft (multi-engine pistons, as well as multi-engine turboprops) numbered 520, representing approximately 6 percent of total. Experimental aircraft and light sport aircraft numbered 300, accounting for 4 percent of total. Jet-engine aircraft numbers were small. Like rotor aircraft, jets accounted for only 2 percent of total based

[13] Washington State Department of Transportation, Aviation Division: Aviation System Plan – Forecast and Economic Analysis Study, 2001.

aircraft in Washington, numbering approximately 160. The Washington State fleet mix is illustrated below in Exhibit 3-5.

Exhibit 3-5: Washington State Fleet Mix, *2005*



Sources: WA LATS Database, 2007

46 percent of all based aircraft and 68 percent of based jets in Washington are concentrated in the Puget Sound Region

The greatest concentration of based aircraft in the state is in the Puget Sound Region--46 percent of the statewide total. A breakdown of Washington based aircraft by Regional Transportation Planning Organization (RTPO) is presented in Exhibit 3-6.

Exhibit 3-6: Washington State Based Aircraft by RTPO, *2005*

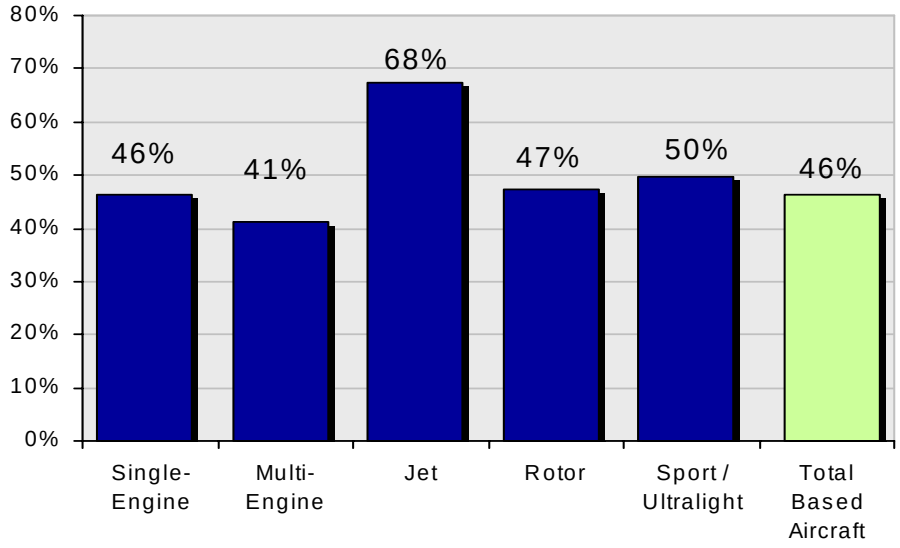
Rank	RTPO	Num of Airports	Total Based A/C	% State Based A/C
1	Puget Sound Regional Council	28	3,798	46%
2	Spokane Regional Transportation Council	5	579	7%
3	Benton-Franklin-Walla Walla RTPO	7	471	6%
4	Southwest Washington RTC	9	440	5%
5	Quad-County RTPO	19	413	5%
6	North Central RTPO	15	410	5%
7	Peninsula RTPO	7	345	4%
8	Skagit/Island RTPO	7	328	4%
9	Southwest Washington RTPO	13	327	4%
10	Thurston Regional Planning Council	4	254	3%
11	Whatcom Council of Governments	5	248	3%
12	Yakima Valley Council of Governments	3	146	2%
13	Palouse RTPO	7	112	1%
14	Northeast Washington RTPO	6	60	1%
	No RTPO – San Juan Islands	6	246	3%
	Total Washington	*141*	*8,177*	*100%*

Note: Evergreen Field, Hillcrest, Western Airpark, and Blaine Municipal included
Sources: WA LATS Database, 2007

Puget Sound not only accounted for nearly half of the based aircraft in the state, it also accounted for approximately two-thirds of the state's jet aircraft. Jet aircraft in the Puget Sound Region represented 68 percent of the statewide total.

Exhibit 3-7 shows Puget Sound's share of the various based aircraft types in Washington.

Exhibit 3-7: Puget Sound Region Share of Washington State Based Aircraft by Type, *2005*



Sources: WA LATS Database, 2007

Approximately 3 million GA Operations in 2005

Total GA operations (public use airports only) in 2005 were estimated at approximately 2,970,000. Compared to approximately 730,000 commercial and military operations[14] reported in 2005, GA operations represent 80 percent of total aircraft operations in the state.

An economic impact study[15] commissioned by the Washington State Department of Transportation in 2001 estimated that general aviation activity produces the following economic impacts in the state economy:

- $490 million in total output
- $140 million in employee compensation
- Nearly 8,000 jobs

[14] In LATS, only military operations occurring at public use airports are considered
[15] Washington State Department of Transportation, Aviation Division: Aviation System Plan – Forecast and Economic Analysis Study, 2002.

Air Cargo Overview

Air cargo impacts both businesses supporting air cargo operations and businesses that depend upon air cargo for shipments of goods and materials.

Air cargo is a significant economic enabler and driver for Washington State and its communities. Its impact is felt within the businesses supporting air cargo operations as well as in those businesses that depend upon air cargo for shipments of goods and materials.

- Air cargo operations directly drive employment for the air carrier at the local airports as well as in courier and trucking organizations. This employment provides wages to be spent in the local community.
- Air cargo operations also support local businesses by enabling the shipment and receipt of high value or time-critical goods and documents. Air cargo facilitates operations for many businesses, allowing the businesses to create employment opportunities, growing the local wage base and stimulating spending in the local economy.

Though air cargo is a more expensive mode of transport than trucking, rail, or ocean shipment, it supports time-definite needs in manufacturing, document exchange, and finished goods delivery. Benefits can include reduced inventory carrying costs, more timely replacement of broken parts, or fulfillment of customer requirements.

In 2005, total enplaned and deplaned air cargo in Washington State amounted to approximately 601,000 tons.

The majority of Washington air cargo activity is currently concentrated at three airports: Sea-Tac, Boeing Field, and Spokane.

As is typical in other states, air cargo activity in Washington State is currently highly concentrated at a small number of airports. As shown by the tonnage data in Exhibit 3-8 on the following page, about 98.3 percent of the state's air cargo activity is concentrated at three airports: Sea-Tac, Boeing Field, and Spokane International. Out of 24 airports reporting air cargo activity in 2005, the top ten airports in terms of air cargo tonnage account for about 99.8 percent of the state's air cargo activity. Outside of these ten airports, the remaining air cargo activity across the state represents a mere 0.2 percent of total air cargo activity.

Exhibit 3-8: 2005 Washington State Top 24 Airports in Air Cargo Tonnage

Rank	Airport		Tons	Percent of Total
1	SEA	Seattle/Tacoma	373,233	62.06%
2	BFI	Seattle Boeing Field	124,620	20.72%
3	GEG	Spokane Intl Apt	93,424	15.53%
4	PSC	Pasco	3,377	0.56%
5	YKM	Yakima Municipal Apt	2,268	0.38%
6	BLI	Bellingham	1,215	0.20%
7	EAT	Wenatchee	654	0.11%
8	MWH	Moses Lake Grant County Apt	530	0.09%
9	CLM	Port Angeles	519	0.09%
10	BVS	Mount Vernon	384	0.06%
11	ESD	Eastsound	369	0.06%
12	OMK	Omak	366	0.06%
13	TCM	Tacoma Mcchord AFB	183	0.03%
14	FRD	Friday Harbor	155	0.03%
15	ODW	Oak Harbor	57	0.01%
16	PAE	Everett	36	0.01%
17	PUW	Pullman/Moscow	27	0.00%
18	ALW	Walla Walla	9	0.00%
19	EPH	Ephrata	3	0.00%
20	ZXX	Kennewick	3	0.00%
21	SFF	Spokane Felts Field	3	0.00%
	Subtotal		601,434	100.00%
	All Others		2	0.00%
	Total		**601,436**	**100.0%**

Source: US DOT, SEA/BFI airport records, SH&E analysis

Air cargo can be divided into two basic categories: air freight and air mail. Air freight, consisting of all non-mail items transported by air, is the main component of air cargo and can be further subdivided into standard freight and express freight (freight carried by integrated carriers such as DHL, FedEx, and UPS).

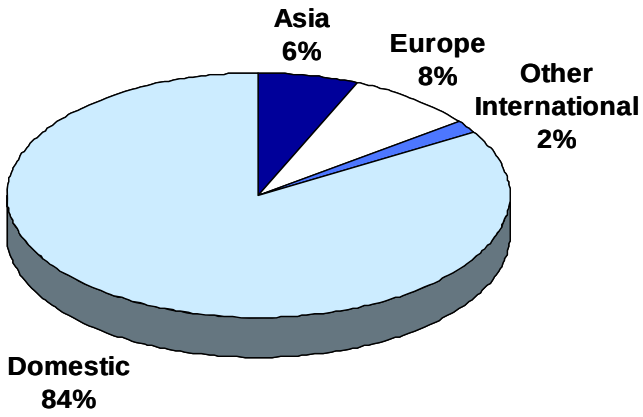
In 2005, total air freight volume at Washington State's public use airports amounted to 541,000 tons, approximately 90 percent of total air cargo volume. Total air mail volume amounted to 61,000 tons, approximately 10 percent of total air cargo volume.

Nearly 85 percent of Washington's air freight activity is domestic activity, involving the movement of air freight between the state and other points in the U.S. As shown in Exhibit 3-9 around 16 percent of Washington's air freight activity is international, with Asia activity and Europe activity representing the two most significant segments.

About 8 percent of Washington's air freight activity represents activity between Washington State and Europe, and about 6 percent activity between the state and Asia.

Exhibit 3-9: 2005 Washington State Air Freight Tonnage Share by Region

Total: 450,584 Tons



Source: SH&E analysis