

Metropolitan Transportation System: *Regional Airports*



Puget Sound Milestones

Puget Sound Regional Council



MAY 2004 (revised AUGUST 2004)

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Funding for this document provided in part by member jurisdictions, grants from U.S. Department of Transportation, Federal Transit Administration, Federal Highway Administration and Washington State Department of Transportation.

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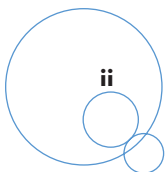
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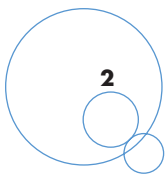


Executive Summary

This *Puget Sound Milestones* Report is the first in what will be a recurring series of reports on regional airport system performance. The Regional Council prepares these reports to monitor the performance of major regional transportation system components (such as airports, highways, ferries, and transit) and to track progress implementing regional policy as expressed in our growth management, economic, and transportation plans (VISION 2020, the Comprehensive Economic Development Strategy, [CEDS], and *Destination 2030*). This document reports on progress in two major areas: airport system performance and implementing regional policy. The performance measures used here are commonly used in the aviation industry (FAA, airlines, WSDOT, and airport sponsors). These include items such as capacity, delay, on time performance, airport pavement condition, and runway safety areas. The policy section reports on commercial air transportation capacity, air cargo, general aviation, regional airport access, PSRC Resolution A-96-02, and airport compatible land use. Because this report is the first in the series, it also includes historical trend information. The following is a summary of airport system trends and performance for the period 1998 through 2003.

- Sea-Tac Airport remains the region's major commercial service airport, serving 26,755,888 passengers, 354,770 aircraft operations (take-offs and landings), and 351,240 metric tons of air cargo in 2003.
- The number of general aviation reliever airports (5) and total number of public use airports (28) remains unchanged. These airports handled over 1.5 million aircraft operations in 2002.
- Between 2000 and 2003 passenger activity at Sea-Tac Airport dropped 6 percent (the first decline since 1981) and operations dropped 20 percent. Air cargo volumes are down 23 percent. Much of this decline is due to the residual affects of the 9-11 terrorist attacks and the weak economy.
- Due to reduced passenger and aircraft volumes at Sea-Tac Airport, overall delay and on time performance have improved. Late arrivals are down from 29% in 2000 to 16% in 2003 and late departures have declined from 26% to 14%. Average arrival delay is two minutes (down from 12 minutes) and average departure delay is five minutes (down from 12 minutes).
- Numerous capacity projects are underway at Sea-Tac. Fill for the third runway is scheduled to continue in Spring 2004; the new office tower opened in March 2004; the central terminal expansion and Pacific Marketplace project is well underway, and scheduled for completion in 2005; the new FAA air traffic control tower is set to open later this year; and the new Concourse A will open in June.
- Several runway safety area projects have been completed.
- General aviation based aircraft have increased from 3,620 in 1998 to 3,734 in 2003, and 233 new aircraft hangars have been built to accommodate growing demand.

- Operations (take-offs and landings) at general aviation airports have declined 7%.
- Pavement conditions at the region's airports are very good. The average pavement condition index (PCI) for runways, taxiways, and aprons is 76.19 (out of a possible 100).
- Transportation Security Administration (TSA) security procedures are in place and being enhanced for commercial passengers, air cargo, and general aviation.
- Adequate facilities for landside air cargo needs at our two air cargo airports will be in place through 2010, but a long range strategy has not been decided. The Regional Council will begin a *Regional Air Cargo Strategy* in mid-2004 (scheduled to be complete in mid-2006). The study will outline a strategy to meet the region's long range air cargo needs.
- Regionally allocated transportation funds (through the regional TIP) have supported ground access improvements at Seattle-Tacoma International and Paine Field, and the Regional Council is conducting a *Regional Airport Ground Access Plan* (scheduled to be complete in mid-2004).
- Noise mitigation programs identified in Regional Council Resolution A-96-02 are underway. With financial help from the Port, FAA, and the State, the Highline School District has begun insulating 15 noise impacted schools. In addition, the Port is implementing its 2001 Part 150 Noise Study.



CHAPTER 1 PSRC Performance Monitoring Program — An Overview

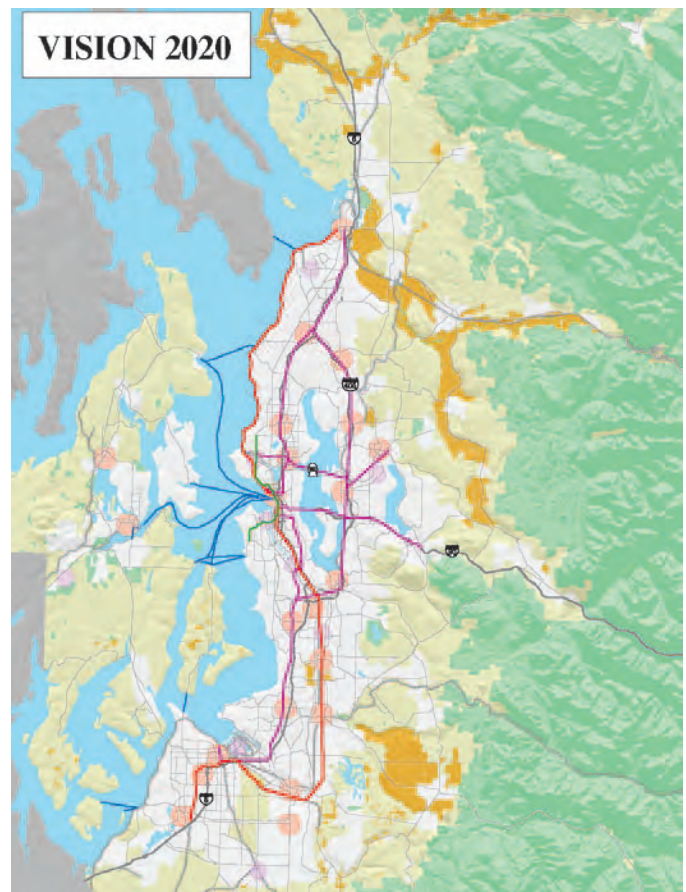
Adopted in 1990 and updated in 1995, VISION 2020 is the long-range growth management, economic and transportation strategy for the central Puget Sound region. It provides a framework for achieving the goals of the Growth Management Act that builds upon and supports local, countywide, regional and state planning efforts. Adopted in 2001, *Destination 2030* is the functional transportation element of VISION 2020 and serves as the long-range regional and metropolitan transportation plan.

Key to realizing the vision put forth in these two documents is ensuring that the region is able to measure progress over time, determine whether planned actions are occurring, and if these actions are achieving desired results. Plan implementation and system performance monitoring is the link that connects the policies contained in the plans with real outcomes. The information generated by monitoring efforts will help provide decision makers with the knowledge and tools they need to update and refine the region's plans and programs, and to make critical choices about its future. Working with local jurisdictions, public agencies, and others, the Regional Council has developed a monitoring program called *Puget Sound Milestones*. The program is designed to track and regularly report on the region's progress toward implementing the policies and achieving the goals put forth in VISION 2020 and *Destination 2030*.

PUGET SOUND MILESTONES

The program consists of two distinct types of monitoring:

- **System Performance and Trend Monitoring.** This type of monitoring entails measuring, analyzing, and reporting on the characteristics and performance of the transportation system and



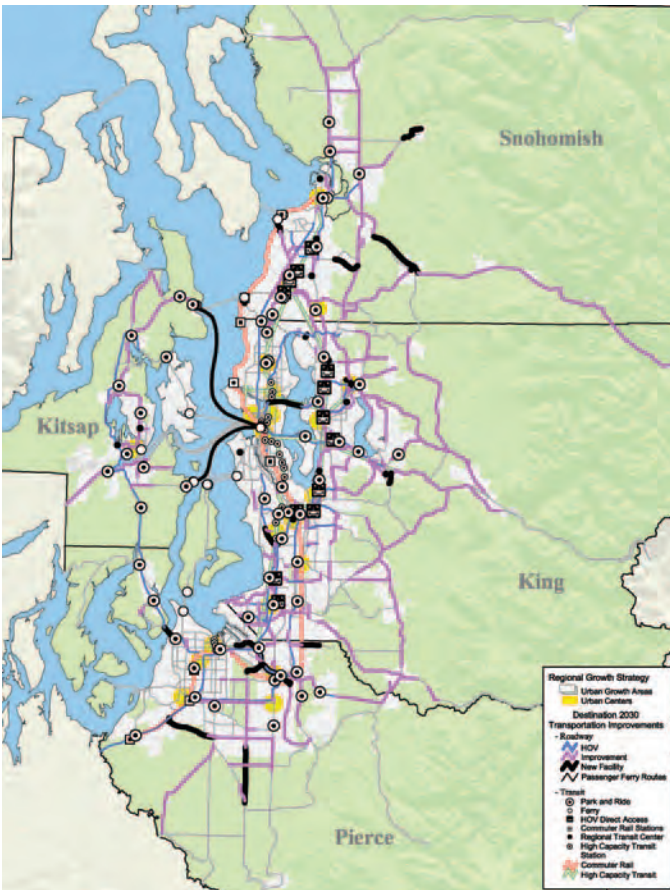
VISION 2020 – the region's long range Growth Management, Economic, and Transportation Strategy

regional demographic and growth trends. Aviation system performance measures used here are commonly used by the FAA, the airline industry, the WSDOT Aviation Division, and individual airports.

- **Plan Implementation Monitoring.** This type of monitoring involves tracking and documenting local, regional, and state progress toward implementing the planned projects, programs, and policies outlined in the regional plans, and include Resolution A-96-02 related to the third runway.

The Regional Council’s program will conduct both types of monitoring to provide policymakers and the public with answers to questions like “How is the region’s transportation system doing?” and “How is the region growing and changing over time?” as well as “Are we building the projects, developing the services, and implementing the policies that we said we would?”

MONITORING THE METROPOLITAN TRANSPORTATION SYSTEM



Destination 2030

Together, VISION 2020 and *Destination 2030* call for a coordinated multimodal transportation system that is integrated with and supported by region-wide growth management and economic objectives. The regionally significant components of these systems are crucial to the mobility needs of the region and make up the Metropolitan Transportation System (MTS). The MTS serves as a planning tool used to identify regional transportation problems and analyze and develop regional solutions. As such, the performance of regional MTS facilities and services must be monitored over time.

The MTS includes facilities and services that are defined both functionally and geographically. A facility or service is part of the MTS if it provides access to any activities crucial to the social or economic health of the central Puget Sound region. Facilities that weave parts of the region together by crossing county or city boundaries are critical to the MTS. Any link that accesses a major regional activity center, such as an airport, is also a critical element of the MTS. Specific facilities or services are included in the MTS based on their function within the regional transportation system rather than their geometric design or physical characteristics. A performance-monitoring framework has been adopted and designed to analyze performance for the various MTS components within separate reports. Each report will

individually consider and resolve measurement questions appropriate to the particular MTS component. Facilities in the MTS include those from the following seven transportation system components:

- Roadway System
- Ferry System
- Transit System
- Non-motorized System
- Freight and Goods System
- Intercity Passenger Rail System
- Regional Aviation System

Regional Airport System Performance Monitoring Measures / Performance Summary

This 2004 *Regional Airport System Performance Monitoring Report* provides a baseline of information on the regional airport system (including historical trends in airport activity), and assesses the region's progress related to a set of airport system performance monitoring measures.

Additional measures may be developed in the future and used in future performance monitoring reports. The 2004 report also reviews the region's progress in implementing regional aviation policy as contained in the 2001 *Regional Airport System Plan* and *Destination 2030*. The 2004 report coincides with the three-year review of *Destination 2030*, which is mandated by federal law. Due to data limitations, this report does not contain complete information for all performance measures at all airports. For some measures we report trends for the past 5 years, whereas for other measures we have only one baseline data point. As future monitoring continues we will be able to report trends for additional performance measures.

REGIONAL AVIATION SYSTEM COMPONENT OF THE MTS

The regional aviation system component of the MTS consists of six airports: the region's Primary Commercial Service airport (Seattle-Tacoma International Airport) plus the region's five General Aviation Reliever airports:

- Seattle-Tacoma International Airport
- Snohomish County Airport
— Paine Field
- Harvey Field (Snohomish)
- King County International Airport
— Boeing Field
- Renton Municipal Airport
- Auburn Municipal Airport



Harvey Field in Snohomish

In addition to Sea-Tac International Airport and the region's five reliever airports, the regional airport system includes 20 public use general aviation airports and two military airfields. While these airports are not officially included on the Metropolitan Transportation System (MTS), they are important to the region's multi-modal transportation system, and are included in the Regional Airport System Performance Monitoring Report.

The entire regional airport system includes 28 airport facilities in the following categories:

Commercial Service Airports	1
Reliever Airports	5
Other General Aviation Airports	13
State-owned Emergency Airports	3
Seaplane Bases	4
Military Airfields	2
Total	28



Business and Corporate aviation are a major component of activity at the region's major general aviation reliever airports, including Boeing Field, Paine Field, and Renton Municipal

COMMERCIAL SERVICE AIRPORT (SEA-TAC INTERNATIONAL)

Four areas of performance are being monitored for Sea-Tac Airport: airport activity levels, capacity, delay, and on-time performance.

Airport Activity Levels

This measure tracks changes in the volume of passengers, aircraft flights, and air cargo over time, and compares these trends with existing capacity. The table below shows historic trends in activity levels at Sea-Tac Airport from 1990 through 2003. For the decade starting in 1990 the airport set new records each year, reaching over 28 million passengers and 445,677 annual operations in 2000. But like most U.S. airports, Sea-Tac was hard hit by the residual affects of the September 11th 2001 terrorist attacks and the lagging economy. Between 2000 and 2003 passenger activity dropped by 6% and aircraft operations have declined 20%. Air cargo volumes were down 23% over the same time period.

SEA-TAC INTERNATIONAL AIRPORT ACTIVITY TRENDS AND EXISTING CAPACITY

	1990	1995	2000	2003	Existing Airport Capacity*
Total Passengers	16,240,309	22,773,986	28,408,553	26,755,888	25,000,000
Passengers Per Flight**	47	61	65	76	
Total Flights (take-offs and landings)	355,007	386,536	445,677	354,770	460,000
Large Air Carrier Flights	193,482	226,190	236,355	209,314	
Commuter Flights	150,376	149,444	203,723	141,908	
Other Flights	11,149	10,902	5,599	3,548	
Air cargo (metric tons)	313,460	408,198	456,920	351,240	n/a

Source: Port of Seattle annual Airport Activity Report (2003) for 1990, 1995, and 2000, and Airport Activity Highlights for 2003.

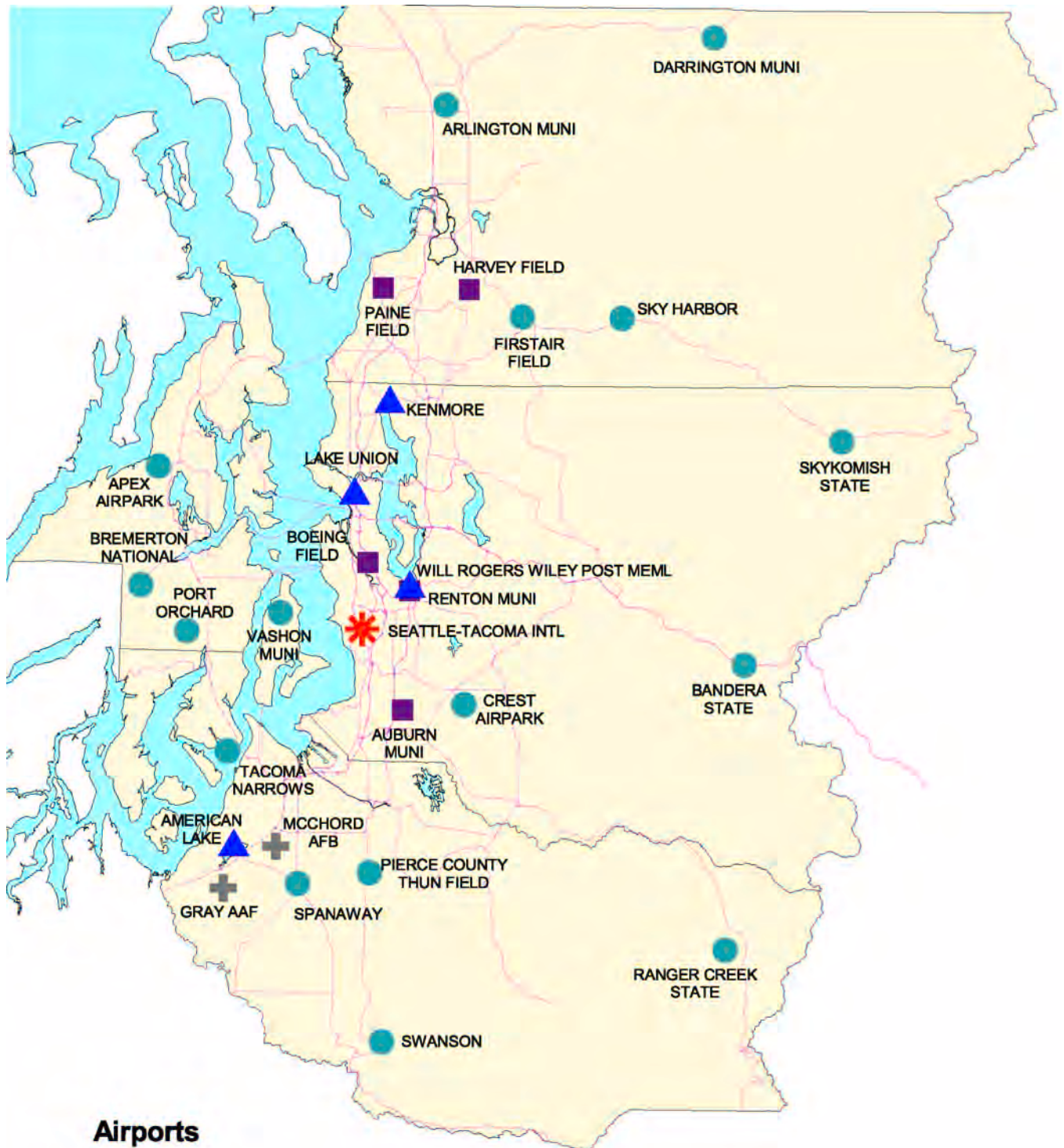
* Estimated capacity of the existing passenger terminal is 25,000,000 passengers per year.

Maximum theoretical capacity of the existing airfield is 460,000 annual operations based on the 1992 Flight Plan Study and confirmed in the Airport Master Plan Supplemental Final EIS (May 1997). At 460,000 annual operations the airport would experience average delay of 20 minutes per flight. For comparison, average delay for all arriving and departing flights in the year 2000 (the worst delay year of those included in this report) was approximately 12.5 minutes.

** Includes only large air carrier and commuter flights.

Capacity

The Regional Council has a strong interest in assuring Sea-Tac airport can meet the region's long range capacity needs as expressed in the Port of Seattle's Master Plan for Sea-Tac Airport, the



Airports

- ✱ Primary
- Reliever
- General Aviation
- + Military Airfield
- ▲ Sea Plane Base
- ~ Major Highways



Seattle-Tacoma International Airport

2001 *Regional Airport System Plan*, and the Metropolitan Transportation Plan (*Destination 2030*). The capacity performance measure reports changes in airport capacity by tracking the completion of new airport facilities that provide new capacity, such as roadways, parking, passenger terminal facilities, airfield improvements, cargo processing facilities, etc.

The FAA's 2004 *Northwest Mountain Regional Airport Plan (RAP)* states: "Working with airport sponsors, the [FAA Northwest Mountain Region] Airports Division encourages and financially supports new runways and airports to keep up with demand." The FAA's vision is consistent with the Regional Council's goal of providing for regional airport system capacity needs [FAA's Northwest Mountain Region includes Washington, Oregon, Idaho, Montana, Wyoming, Colorado, and Utah].

One measure of how well the airport's capacity is being used is in the average number of passengers per aircraft. This is a product of aircraft fleet mix (the mix of aircraft sizes, including the split between large jet aircraft and smaller commuter aircraft) and aircraft load factors (the percent of seats occupied). At Sea-Tac, the typical large jet aircraft (Boeing 737, Boeing 757, Airbus 319, and Airbus A-320) seats between 110 and 243 passengers, while small commuter aircraft have between 29 and 70 seats. The average number of passengers per flight has steadily increased at Sea-Tac, from 47 in 1990 to 76 in 2003. This increase is due to higher average load factors and the shift to larger aircraft by the commuter airlines. Whereas in 1990 the typical commuter aircraft was a 19-seat turbo-prop, today's commuter aircraft are more likely to be 70-seat regional jets. This trend is forecast to continue, both at Sea-Tac and nationwide.

Delay

The amount of arrival and departure delay incurred at an airport (as measured by the average delay per flight) is a common measure of performance used in airport master planning. This measure tracks average delay (in minutes per flight) for departing and arriving flights and average arrival and departure delay for late flights.

On-time Performance

On-time performance is another measure of aviation industry performance commonly used by the airlines. This performance measure documents the percentage of flights arriving/departing on time (within 15 minutes of scheduled arrival/departure time), and is reported to the U.S. Department of Transportation (Bureau of Transportation Statistics) and FAA by major U.S. domestic airlines (see list below). According to the Bureau of Transportation Statistics (BTS), a flight is counted as "on time" if it arrived at the gate no more than 15 minutes after the scheduled arrival time shown in the carriers' Computerized Reservations Systems. Thus, neither diverted nor canceled flights count as

“on-time average minutes late.” Canceled and diverted flights are counted as late, but they are not included in the calculation of average or median minutes late.



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The data reported below was derived from the Bureau of Transportation Statistics’ airline on-time performance database, which tracks on time performance of the nation’s 16 largest domestic airlines: Airtran, Alaska, America West, American, Atlantic Coast, Atlantic Southeast, ATA, Continental, Delta, ExpressJet, Jetblue, Northwest, Skywest, Southwest, United, and USAIR. These airlines account for more than 90% of domestic operating revenues, and each of these airlines earns 1% or more of total domestic scheduled passenger revenue; therefore, federal regulations require them to report on-time performance data. However, because these on time statistics do not include all airlines, the departures and arrivals data shown below will not match the operations data reported above. Notably, the figures below do not include activity by Horizon Airlines, which accounts for nearly 25% of all flights.

DELAY AND ON-TIME PERFORMANCE STATISTICS FOR SEA-TAC AIRPORT

Aircraft Departures Performance Data

	Total Air Carrier Departures	Total Number of Flights Late	Percent of All Flights Late	Average Delay for All Flights (Departures)	Average Delay for Late Flights (Departures)
1995	92,016	19,372	21.05 %	7.52 min.	28.18 min.
2000	104,910	27,710	26.41 %	12.44 min.	41.42 min.
2002	100,580	16,730	16.63 %	6.34 min.	37.58 min.
2003	104,604	15,116	14.45 %	4.95 min.	38.39 min.

Aircraft Arrivals Performance Data

	Total Air Carrier Arrivals	Total Number of Flights Late	Percent of All Flights Late	Average Delay for All Flights (Arrivals)	Average Delay for Late Flights (Arrivals)
1995	92,016	21,758	23.65 %	8.36 min.	39.68 min.
2000	104,916	30,395	28.97 %	12.60 min.	49.51 min.
2002	100,581	19,465	19.35 %	4.26 min.	43.12 min.
2003	104,604	16,935	16.19 %	1.80 min.	45.47 min.

Source: Bureau of Transportation Statistics – Airline Information – Airline On-time Statistics.

Over the past three years activity levels at Sea-Tac Airport have declined. Total passenger traffic dropped from over 28 million in the year 2000 to 26.7 million in 2002. In 2003 passenger traffic turned the corner, increasing by a modest 0.2%. In the same time period, total annual aircraft operations declined more steeply, from over 445,000 in the year 2000 to 355,000 operations in 2003, a decline of 20%. The airport’s delay and on time performance figures have improved in this time frame, largely due to the drop in demand. Between 2000 and 2003, the percent of air carrier flights arriving late declined from 29% to 16%, while the percent of all air carrier flights departing late decreased from 26% to 14%. Average delay for all departing flights decreased from 12 minutes to 5 minutes, while average delay for all arriving flights declined from 12 minutes to 2 minutes. For all delayed flights, average departure delay declined from 41 to 38 minutes, and average arrival delay dropped from 49 minutes to 45 minutes.

GENERAL AVIATION AIRPORTS

The 2001 *Regional Airport System Plan (RASP)* identified the need for additional aircraft storage capacity to meet growing demand at the region's general aviation airports. Between 2001 and 2010, the general aviation based aircraft fleet is forecast to increase from 3,620 to 4,079, with a corresponding need for 460 additional aircraft hangars by 2010. The following table summarizes activity levels (operations and based aircraft) at the region's General Aviation airports for the years 1998 and either 2002 or 2003 (operations data were available only for 2002; based aircraft data were available for 2003). In addition, the table displays the number of new hangars and/or aircraft tie-downs constructed over the past 5 years, a key measure of system capacity at the general aviation airports.

ACTIVITY TRENDS AT GENERAL AVIATION AIRPORTS

Airport	Operations (Year)*		Based Aircraft (Year)*		New Hangars and/or Aircraft Tie-Downs* (1998-2003)
	1998	2002	1998	2003	
American Lake	700	700	15	15	0
Apex Airpark	19,425	19,425	50	50	0
Arlington	135,000	135,000	510	545	27
Auburn	172,000	164,539	238	205	89
Bandera	300	300	0	0	0
Boeing Field	345,120	354,231	443	466	0
Bremerton	108,800	51,215	116	188	13
Crest Airpark	95,222	97,500	334	338	0
Darrington	3,025	3,025	4	6	0
FirstAir Field	18,169	18,169	78	70	0
Gray Army Airfield	-	-	-	-	-
Harvey Field	140,700	127,905	360	316	0
Kenmore	40,000	40,000	79	100	0
Lake Union	30,500	30,500	0	0	0
Martha Lake (closed)	40,400	0	51	0	0
McChord AFB	-	-	-	-	-
Pierce County/Thun Field	86,710	90,000	229	230	14
Port Orchard	18,714	18,714	15	15	0
Ranger Creek	250	250	0	0	0
Renton	100,710	96,337	240	290	1
Sea-Tac Int'l	407,597	364,735	6	6	0
Sky Harbor	1,000	1,000	8	8	0
Skykomish State	300	300	0	0	0
Snohomish Co./Paine Field	192,612	176,052	483	565	85
Spanaway	19,380	19,000	63	62	0
Swanson	5,609	8,510	22	23	4
Tacoma Narrows	95,316	81,449	200	160	0
Vashon	6,000	7,000	31	31	0
Will Rogers/Wiley Post	2,387	2,387	45	45	0
Regional Total	2,085,946	1,932,918	3,620	3,734	233

* Data from 2001 RASP (PSRC), Statewide Airport System Plan (WSDOT), and airport sponsors. The figures shown in the table above in the column labeled "new hangars and/or aircraft tie-downs" are primarily new hangars, for which there is high demand. At most airports there are more tie-downs than needed.

Between 1998 and 2002 operations have declined, while the number of based aircraft has increased by 3%. About 230 new aircraft hangars have been built since 1998 (some 47 per year). At this rate, the region will have added 560 new hangars by the year 2010, approximately 100 more than forecast in the RASP. While total based aircraft demand was forecast to grow by 38 per

year, actual growth over the past 5 years has been about 23 aircraft per year. New hangars have been built faster than the growth in demand, providing sufficient space for new aircraft as well as allowing some existing based aircraft to move from open tie-down storage into covered hangars. This was another goal of the 2001 RASP. As of 1999



Pierce County Airport / Thun Field south of Puyallup

there were over 800 aircraft waiting for covered hangars in the region. The new hangar construction which has occurred in the past five years has addressed some of this latent need.

ALL SYSTEM AIRPORTS

The sections immediately above outlined system performance monitoring measures that apply specifically to Seattle-Tacoma International Airport, as the region's primary commercial service airport, and to the region's general aviation airports. The measures below apply to all airports in the region.

Runway Safety Area (RSA)

Achieving and maintaining runway safety area standards is one of the FAA's goals for NPIAS airports (airports contained in the National Plan of Integrated Airport Systems). The FAA's goal is for all runway ends to meet runway safety area standards at all primary, commercial-service, and general aviation airports with 75 or more based aircraft. This performance measure tracks the number of airports in the regional airport system with substandard runway safety areas and the completion of runway safety area projects. The FAA monitors airports' compliance with runway safety area standards, and includes this information in its *Northwest Mountain Regional Airport Plan (RAP)* report, published annually by the FAA's Northwest Mountain Region Office. The plan calls for 100% compliance with runway safety area standards by 2010, and states the FAA's vision for safety: "Airports meet all safety and design standards applicable to the design aircraft and weather minimums, so that accident risk is reduced. The first priority for emphasis of the RAP has been safety, with the goal of standardizing airports in terms of safety-related facilities. This region has concentrated on several safety initiatives, such as providing standard safety areas . . ."

The PSRC *Regional Airport System Plan*, completed in



Paine Field Runway Safety Area Project completed in October 2001

2001, set safety and standards as the highest priorities for airport system investments, and identified the need for runway safety area improvements at 11 system airports. Of these, all but three airports contain the RSA improvement in their airport master plan, and RSA improvements have been completed at Sea-Tac Airport, Paine Field, and Renton.

Runway safety Area information for 1998 was reported in the *2001 Regional Airport System Plan* using data from the FAA, Washington State Department of Transportation Aviation Division, and individual airports. Over time, ongoing runway safety area projects are monitored to track compliance with this airport system performance measure. Between 1998 and 2003 airports have completed 5 runway safety area projects (3 at the larger airports), as summarized below.

At the region’s busier general aviation airports (those with 75 or more based aircraft) 10 of the 30 runway ends did not meet all runway safety area standards in 1998. As of 2003, ongoing runway safety area improvement projects had reduced that number to 7. The remaining non-standard runway safety areas have now been included in current airport master plans, and most are planned for completion by 2010.

COMPLIANCE WITH RUNWAY SAFETY AREA (RSA) STANDARDS ¹

	1998	2003
All Airports in the System ²		
Total airport system runways (excludes water)	28	28
Total airport system runway ends	56	56
Runway ends with less than standard RSAs	31	26
Airports With 75 or More based Aircraft ²		
Total airport system runways (excludes water)	15	15
Total airport system runway ends	30	30
Runway ends with less than standard RSAs	10	7

¹ Includes either runway safety area width, runway safety area length beyond the runway end, or both.

² Excludes runways at Gray Army Airfield and McChord Air Force Base.

The Washington State Department of Transportation Aviation Division maintains a statewide airport system database that includes information on the status of runway safety areas for each airport in the system and for each runway at those airports. This database is a potential resource for monitoring the performance of the regional airport system related to runway safety areas. The FAA tracks this measure for its commercial service airports in the Pacific Northwest, including Sea-Tac, but does not track the smaller airports in the PSRC region. Tracking runway safety area data at the regional level would be the responsibility of the Regional Council in cooperation with WSDOT Aviation. If compliance with runway safety area standards is considered to be an important measure of airport system performance, the Regional Council will work with the WSDOT to collect this information for the region’s airports.

Pavement Condition

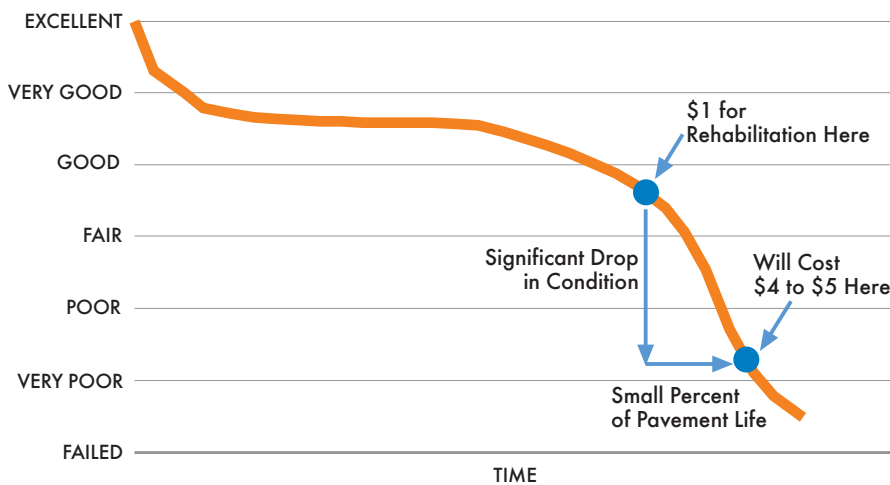
Maintaining and preserving airport pavements is critical to the continued safe and efficient operation of the airport system. As a condition for federal funding of airport pavement projects, the Federal Aviation Administration (FAA) requires airport sponsors to establish airport pavement maintenance and management programs to enhance safety, improve operations, and preserve the large public investment in the nation’s airport pavements. This PSRC airport system performance monitoring criterion measures the condition of airport pavements (runways, taxiways, aprons, and total airport) based on periodic visual inspections and non-destructive pavement testing and analysis using the

FAA's pavement condition index (PCI) system. WSDOT uses this system to assist airports in evaluating the condition of their airport pavements. The table on the next page displays currently available pavement condition information for the region's public use airports. This includes visual pavement inspection performed for a 1998 update to the Washington State Airport System Plan, more detailed pavement condition index (PCI) analysis completed in 2000 by WSDOT, and information from individual airports.

The FAA's latest (2003) *Regional Airport Plan (RAP)* includes the following vision for airport pavements in the Northwest Mountain Region: "Airport pavements, especially runways, are preserved in excellent condition at the lowest total cost, including maintenance and reconstruction costs." The plan goes on to say "... Pavement projects will continue to be monitored since they consume a large share of Airport Improvement Program (AIP) discretionary funds." For the planning period 2003-2007, FAA estimates airport pavement rehabilitation projects will account for 21% of the Northwest Mountain Region's entire airport-related spending under the AIP program (*2003 Regional Airport Plan*).

Based on the state's visual pavement inspections done in 1998, 16 of the region's 28 public use airports (pavement information excludes the region's four seaplane bases) had pavements in good condition, 6 were in fair condition, and 2 (Firstair Field and Spanaway) were in poor condition. Of the 13 airports included in the 2000 PCI analysis, most airports had PCI ratings between 71 and 100 (considered very good or excellent). Average pavement rating for all 13 airports was 76.19 (very good). Two airports (Firstair Field and Spanaway) had PCI ratings near 50. PCI ratings between 41 and 55 are considered "Fair." Average pavement age for the 13 reported airports was 18 years, with Spanaway reporting 36 years, a likely contributor to the airport's fair/poor pavement condition. Pavement condition index (PCI) data for Sea-Tac International Airport (as reported by the Port of Seattle in February 2004) shows the airport's pavements fell between 70 and 85. Sea-Tac taxiways were at the high end, with average PCI ratings of 85. A summary of the 1998 visual inspection findings and the 2001 PCI analysis appears in the table on the following page.

PAVEMENT CONDITON RATING



Airport pavement conditions are assessed using visual inspection and non-destructive testing. Pavement condition analysis, life cycle analysis, and cost estimating is then performed using predictive models such as "Micro PAVER" – The Pavement Maintenance Management System

Source: U.S. Army Corps of Engineers – Construction Engineering Research Laboratory

The WSDOT Aviation Division plans to update its statewide airport pavement management program in 2004 to assess the condition of the state's airport pavements. The State's long range plan for its airport pavement program is to conduct pavement condition analysis every three years and use this information to track trends, plan for pavement improvement projects, and prepare budgets for the statewide program. The state's ongoing pavement program will be used by airport sponsors and FAA in assessing pavement system needs and funding requirements. In addition, pavement condition information will be reported by the Port of Seattle for Sea-Tac Airport. As this pavement condition information becomes more available, it can be used by the Regional Council to track this component of airport system performance over time.

CONDITION OF AIRPORT PAVEMENTS

Airport	Runway Surface Type	Pavement Condition (1998)*	Weighted Average PCI (2000)**				Average Pavement Age***
			Apron	Runway	Taxiway	Total	
American Lake	Water	-	-	-	-	-	-
Apex Airpark	Asphalt	Good	-	-	-	-	-
Arlington Municipal	Asphalt	Good	67.66	97.40	73.38	77.14	18.09
Auburn Municipal	Asphalt	Good	84.13	80.34	77.86	80.90	22.06
Bandera State	Turf	Poor	-	-	-	-	-
Bremerton National	Asphalt	Good	78.29	64.19	82.92	74.01	20.96
Crest Airpark	Asphalt	Fair	61.00	78.39	66.02	70.81	16.42
Darrington	Asphalt	Good	99.00	100.00	98.16	99.25	4.00
FirstAir Field	Asphalt	Fair	52.17	46.72	56.20	50.01	14.69
Gray Army Airfield	Asphalt	Good	-	-	-	-	-
Harvey Field	Asphalt	Fair	-	-	-	-	-
Kenmore Air Harbor	Water	-	-	-	-	-	-
King County International/ Boeing Field	Asphalt/Conc.	Good	81.65	66.06	71.08	72.30	18.61
Lake Union Chrysler Air	Water	-	-	-	-	-	-
McChord AFB	Asphalt/Conc.	Good	-	-	-	-	-
Pierce County/Thun Field	Asphalt	Good	80.06	87.00	86.64	83.99	15.03
Port Orchard	Asphalt	Fair	-	-	-	-	-
Ranger Creek State	Asphalt	Good	-	-	-	-	-
Renton Municipal	Asphalt/Conc.	Good	85.64	94.67	62.87	80.25	18.27
Sea-Tac International	Asphalt/Conc.	-	70-85	70-85	85	70-85	-
Sky Harbor	Turf	Good	-	-	-	-	-
Skykomish State	Turf	Fair	-	-	-	-	-
Snohomish County/ Paine Field	Asphalt	Good	73.24	91.21	72.39	76.76	14.50
Spanaway	Asphalt	Poor	31.00	63.69	39.56	48.65	36.71
Swanson	Asphalt	Good	100.00	98.00	-	98.16	2.00
Tacoma Narrows	Asphalt	Fair	84.36	66.29	73.20	77.12	26.34
Vashon Municipal	Turf	Good	-	-	-	-	-
Will Rogers/Wiley Post	Water	-	-	-	-	-	-
Regional Totals**						76.19	18.00

* Pavement condition information for GA airports is based on 1998 WSDOT visual inspections. Information for Gray Army Airfield and McChord AFB was obtained from the military.

** Regional weighted average PCI numbers for apron, runway, and taxiway are arithmetic averages (calculated by PSRC) for the 13 regional airports included in the State's analysis. Total weighted average PCI was calculated by Pavement Consultants, Inc. (Regional total excludes Sea-Tac International.)

*** As of the year 2000.

Note: Pavement conditions information excludes region's four seaplane bases.

Sources: Washington State Aviation Pavement Management Program, 2000, prepared by Pavement Consultants Inc. WSDOT Airport Conditions Inspections, 1998.

Obstructions

Maintaining the airspace near the region's airports is important in preserving aviation system safety. It requires continuous monitoring, review, and periodic abatement actions (lighting, marking, trimming, and removal). Trees grow rapidly in the Pacific Northwest, and should be trimmed or removed when they penetrate airport approach zones. In addition, manmade structures, such as cell phone towers, top-mount antennas, buildings, power lines, radio broadcast towers, and temporary construction equipment (such as cranes), when built near airports, can compromise the safety of airport operations. Federal Aviation Regulation Part 77 — "Objects Affecting Navigable Airspace" requires that anyone who is proposing to construct, or alter, an object that affects airspace must notify the Federal Aviation Administration (FAA) prior to its construction. The specific form which is used to notify the FAA is Form 7460-1: "Notice of Proposed Construction or Alteration." The FAA and the WSDOT Aviation Division follow the 7460 notification procedures to identify potential airport obstructions and perform airspace analysis of proposed structures. This system includes only proposed new structures or changes to structures, and does not identify existing obstructions at airports. Airport master plans and airspace analysis for individual airports contain information on all existing obstructions which penetrate their Part 77 surfaces. Existing obstruction information was gathered for all system airports and reported in the 2001 *Regional Airport System Plan* (see below). As of 1998 there were 68 runway ends at the region's airports, and of these, 31 runway ends had obstructions in their approaches. These data, shown below, represent obstruction information collected from numerous sources at varying times. The data are therefore not a single snapshot in time showing the status of the regional airport system. The Washington State Department of Transportation Aviation Division maintains a statewide airport system database that includes obstruction information for all airports in their system. These data could be used to identify the number of runway ends with obstructed approaches as well as the total number of Part 77 penetrations at each airport. The state's database is not currently designed to track both these airport system performance measures over time, but changes could be made to provide the state and the region with the data needed to track this system performance measure over time. PSRC plans to work with WSDOT Aviation Division, airport sponsors, and FAA to provide better data tracking of obstruction data in the future.

AIRPORT SYSTEM RUNWAYS AND OBSTRUCTED APPROACHES (1998)

Total system runways (excludes water).....	34
Total system runway ends.....	68
Runway ends with obstructed approaches.....	31

Source: PSRC 2001 *Regional Airport System Plan*.

Aviation System Security

Commercial Passenger Security. Since September 11, 2001 the efforts to enhance security in the commercial airline passenger industry have been well publicized. The Transportation Security Administration, Federal Aviation Administration, Port of Seattle, and airlines have undertaken a broad range of efforts aimed at protecting aircraft in flight and airport passenger terminals from terrorist acts. Numerous enhanced security measures have been implemented at Sea-Tac Airport. These include:

- increased presence of law enforcement personnel throughout the airport
- enhanced screening equipment and procedures (every bag is now checked for explosives using the latest technology screening machines)

- all screening is now performed by Transportation Security Administration (TSA) personnel
- canine explosive teams with bomb sniffing dogs have been expanded
- restrictions have been placed on parking in front of the passenger terminal
- only ticketed passengers are allowed beyond the airport security screening stations
- the airport and airlines have implemented enhanced TSA restrictions on what can be brought on board planes
- airfield access restrictions have been significantly enhanced
- and the airport is implementing a new badge program using biometric access code technology (finger printing) for all employees who have access to restricted areas of the airport.

Air Cargo Security. On November 17, 2003 the TSA published an Air Cargo Strategic Plan, focused on security. The plan's four objectives are to: (1) enhance shipper and supply chain security, (2) identify elevated risk cargo through prescreening, (3) identify technology for performing targeted air cargo inspections, and (4) secure all-cargo aircraft through appropriate facility security measures. Since its creation after September 11, 2001, TSA has moved steadily to strengthen air cargo security. The recent Strategic Plan represents a major new commitment by TSA to build aggressively on that foundation and substantially improve the security environment for the nation's aviation system. TSA, FAA, regional airport operators, and air cargo carriers are working together to begin implementing these air cargo security objectives.

General Aviation Security. The U.S. Department of Transportation and Transportation Security Administration (TSA) have also established improved security measures for general aviation airports. At the national level, methods used to increase general aviation security have, to date, mostly fallen into four areas: (1) airspace and operational restrictions, (2) intercept operations — the Department of Defense has increased airborne flight monitoring assets and combat air patrols on an ongoing and random basis, (3) scrutiny of pilots, crews, passengers and aircraft on the ground, and (4) communication and education. At the airport level, the following security measures have been recommended by the National Association of State Aviation Officials (NASAO) to enhance security at all public use general aviation airports: (1) secure unattended aircraft, (2) report unusual and suspicious activity, (3) develop airport security plans, (4) increase public awareness and education, (5) monitor airport property and users, (6) control movement in the aircraft operating area (AOA), (7) prevent unauthorized AOA access, and (8) develop standards for new pilot ID Smart Cards and identification verification systems.

The TSA, FAA, WSDOT, and airport operators are working to improve safety and security at general aviation airports while retaining the general aviation industry's ability to meet the needs of the flying public.

Implementing Regional Airport System Policy

This section will report on progress to implement regional Airport System policy as expressed in the *2001 Regional Airport System Plan* and *Destination 2030*. Policy direction is divided into the following categories: commercial air transportation capacity, air cargo, general aviation, regional airport access, PSRC Resolution A-96-02, and Airport Compatible Land Use.

COMMERCIAL AIR TRANSPORTATION CAPACITY

Destination 2030 (adopted in May 2001) contains the following policy related to the region's commercial air transportation needs:

The region will meet its long-term commercial air transportation needs consistent with the Regional Council's General Assembly action in 1996 [Resolution A-96-02], which amended the 1995 Metropolitan Plan.

The 1996 resolution added planning for a third runway at Sea-Tac to the Metropolitan Transportation Plan (MTP). In addition, *Destination 2030's* 10-year aviation system investment program includes Port of Seattle investments to expand capacity at Sea-Tac Airport consistent with the Port's most recent Airport Master Plan Update. Those actions include a balanced airport-wide improvement program that expands airfield capacity, passenger processing, air cargo, access, and other support facilities. The 10-year investment program identifies the following airport improvement projects: the third runway, new concourse A, new north passenger terminal, central terminal improvements, additional parking, expansion of the on-airport people-mover system, new FAA air traffic control tower, and expanded air cargo facilities. The Port of Seattle continues to pursue numerous projects to provide expanded airfield and landside capacity at Sea-Tac Airport. The following table summarizes current progress on these programs.

CAPACITY PROJECTS AT SEA-TAC AIRPORT AS CONTAINED IN THE CURRENT (1997) AIRPORT MASTER PLAN

Third Runway	Embankment construction is scheduled to resume in spring 2004, and the third runway is scheduled to be opened for service in 2008. When completed, the new runway will expand the airport's theoretical maximum capacity from 460,000 annual operations to about 550,000 annual operations. In 2003, total annual aircraft operations (take-offs and landings) were approximately 355,000 and were forecast in the Airport Master Plan Final Supplemental EIS to increase to 532,000 in the year 2020. Port planning now underway currently estimates that demand will be approximately 537,000 operations in 2020.
Central Terminal Expansion and Pacific Marketplace	Construction began in 2002, and is scheduled for completion in early 2005. The new facility will include several new restaurants and nearly a dozen new retail shops. Forecasts from the Airport Master Plan (1994) and Final EIS Executive Summary (1996) show a need to expand the airport's central terminal from 1.9 million square feet in 1994 to 2.3 million in 2000, 2.6 million in 2010, and 3 million in 2020.
New Concourse A (South Terminal Expansion)	This project, begun in 2000, is scheduled for completion in mid-2004. The expansion will increase Concourse A's aircraft gate capacity from 7 to 14. The new concourse will have moving sidewalks, restaurants, shops, baggage handling facility, and an arrivals hall with an office building above. The Airport Master Plan (1994) predicted a need to increase the airport's aircraft gate capacity from 90 gates in 1994 to 101 gates in the year 2000, 112 gates in 2010, and 120 gates in 2020. Changes in the airline industry and current planning efforts may modify demand for new gates over the next couple of decades. The Port is preparing an Airport Comprehensive Development Plan to examine terminal, road, and other airport facility needs in light of such changes.
New North Terminal	The Airport Master Plan showed a need to provide 30 new aircraft gates by the year 2020. The new north terminal as described in the current master plan would provide approximately 24 new gates, and when combined with the expanded concourse A would meet year 2020 demand. Current planning that may considerably change the terminal complex expansion, is underway, but design and construction is not expected until about the end of the decade.
Additional Parking	The latest main parking garage expansion was completed in 2001, with 3,000 new spaces added. Current planning will suggest additional parking expansion as part of the overall airport complex development.
Upgrades to the On-Airport Underground People-Mover System	This project will replace old train cars, upgrade the tunnels, and remodel the train stations in the Main Terminal and at the Satellites. The project is currently underway, and will be completed in 2004. These improvements were called for in the 1994 airport master plan.
Roadway Improvements	International Boulevard improvements adjoining the airport have been completed in cooperation with the Washington State Department of Transportation and the cities of Tukwila, SeaTac, and Des Moines. Several major improvements to both SR-518 and SR-509 (and related improvements to connect the airport to an extended SR-509) are in early planning phases but funding has not yet been secured. Funding for right-of-way and project design (\$35 million) for the SR-509 extension is included in the recently adopted Nickel Funding Package.
New FAA Air Traffic Control Tower	The new FAA air traffic control tower is nearly complete, and is scheduled to open in late 2004.
Expanded Air Cargo facilities	The Airport Master Plan (1994) forecast shows air cargo demand will grow by 150% between 1994 and 2020. The 1999 "Air Cargo Facilities Development Study" outlined a short term strategy for meeting the Port's air cargo needs at Sea-Tac Airport. The Port is currently refining those needs. PSRC is also planning to undertake a <i>Regional Air Cargo Strategy</i> project in 2004-06. The goal of the PSRC air cargo study is to identify the region's medium to long range air cargo needs and help airport sponsors and the air cargo industry coordinate investments to meet those needs (see "air cargo" below).



Sea-Tac - Interior View of New Central Terminal



New Concourse A will open June 15

AIR CARGO

Based on the most recent forecasts done for Sea-Tac Airport, Boeing Field, and Paine Field, it's clear the region will need to provide additional capacity to accommodate regional air cargo growth within the next 10-20 years. Sea-Tac Airport and Boeing Field have identified facilities to meet growth over the period 2000-2010. Beyond that time frame the region's needs and approach to meeting those needs have not been clearly defined. The Regional Council, in its 2002 *Strategic Plan for Aviation*, outlined the scope of work for a *Regional Air Cargo Strategy*, scheduled to begin in mid-2004 and be complete in mid-2006.



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The study will evaluate historic and recent national and regional air cargo industry trends, assess the regional air cargo market and decision factors and constraints, review and evaluate existing air cargo forecasts and develop new forecasts if needed, identify air cargo capacity needs and options, and develop a regional air cargo strategy. Two key objectives of the *Strategic Plan for Aviation* were to clarify the roles of the region's airports in meeting our air cargo needs, and to address the region's ground access needs relative to the regional air cargo market. These goals will be further addressed in the Regional Air Cargo study.

GENERAL AVIATION

Through its 2001 *Regional Airport System Plan (RASP)*, the Regional Council has identified existing and future needs of the region's public use airports. The RASP was adopted by reference as a component of the Metropolitan Transportation Plan (*Destination 2030*) in May 2001. The plan addresses a broad array of airport system needs, and identifies the capital improvements needed at each airport in the system over the next 20 years. The RASP provides a baseline of technical analysis and the policy basis for continued planning for the regional airport system. The General Aviation policies listed in Appendix A summarize the region's plans for investment in the airport system. These investments fall into four major categories: safety and standards, maintenance and preservation, system enhancements, and system capacity. Actions addressing these investment needs are discussed throughout this report. According to the 2001 RASP investments in the regional airport system are allocated to the four main categories as shown below.

PLANNED AIRPORT SYSTEM INVESTMENTS (2001 REGIONAL AIRPORT SYSTEM PLAN)

	Safety and Standards	Maintenance and Preservation	System Enhancement	System Capacity	Other
Sea-Tac Airport	0%	4%	0%	89%	7%
GA Airports	21%	42%	11%	16%	10%
Total System	1%	6%	1%	85%	7%

Related to general aviation airport capacity, the region’s airports have experienced an increase in based aircraft in the past 5 years, from 3,620 in 1998 to 3,734 in 2003. In response to this demand, some 150 new aircraft hangars have been built. These hangars have met the demand of new aircraft (114) as well as a latent demand by existing aircraft owners who wish to upgrade from open tie-downs to enclosed hangars.

REGIONAL AIRPORT ACCESS

Ground access to the region’s airports was identified as an important issue in the Regional Council’s 2002 *Strategic Plan for Aviation*. The Regional Council is moving ahead on a study to begin addressing ground access needs at the region’s airports. The *Regional Airport Ground Access Plan* has received a planning grant from the FAA, and the study began in March 2003. The study will review the status of existing ground access to the region’s airports, develop future ground access forecasts, identify needs, and integrate airport ground access projects into regional transportation plans and programs. The initial plan is tentatively scheduled for completion in mid-2004. The results of the *Regional Air Cargo Study* (see above) will be incorporated into a future update of the Regional Airport Ground Access Plan. The plan will address access needs at the region’s 26 public use airports and 2 military airfields.

The region has been implementing policy to enhance access to the region’s airports for several years through the Regional Transportation Improvement Program (RTIP) process. TIP funding has been channeled to several projects which provide improved airport access. These projects include:

Sea-Tac Airport

- SR-99 (International Boulevard) improvements in Tukwila, SeaTac, Des Moines, Kent, and Federal Way
- South 188th Street in the city of SeaTac
- Planned SR-509 extension from South 188th Street to I-5 (future project)
- Planned Sea-Tac Airport South Access Project (future project)

Snohomish County Airport/Paine Field

- Airport Road improvement program (including HOV lanes)
- Paine Field Boulevard
- SR-525 (Mukilteo Speedway) widening project

PSRC RESOLUTION A-96-02

The following bullets summarize actions taken in recent years to implement the provisions of Resolution A-96-02. This 1996 resolution amended the 1995 Metropolitan Transportation Plan to add planning for a third runway at Sea-Tac Airport. The resolution included a series of action steps to be taken by the Regional Council, the Port of Seattle, the Washington State DOT and Transportation Commission, King County International Airport (Boeing Field), and the Highline School District to address continuing issues related to airport noise and its impact on communities around Sea-Tac. The following steps have been completed:

- 7 Annual Meetings to report on progress in addressing the Resolution's action steps were held in 1997, 1998, 1999, 2000, 2001, 2002, and 2003. These meetings were open to the public, and progress reports were given by all agencies having responsibilities identified in the Resolution.
- The *FAR Part 150 Noise Compatibility Study Update*, prepared by the Port of Seattle, was approved by the FAA in 2002. The Port has begun to implement the \$200 million program, which includes a noise insulation program for five owner-occupied multi-family complexes and the acquisition and relocation of seven mobile home parks within the 70 DNL noise contour. During 2003 and 2004 the program began funding the purchase of 74 mobile homes (Burien Gardens), provided noise insulation for one school (North Hill), and began to install noise insulation in one multi-family housing structure. The port also continues its long-standing noise insulation program, begun in the 1980s. To date the program has completed noise insulation in 8,966 residential units.
- In May 2002 the Port of Seattle, FAA, Highline School District, State of Washington, and U.S. Congressman Adam Smith reached a landmark agreement that will provide up to \$200 million over the next 10 years to insulate 15 Highline schools most impacted by airport noise. The Port and FAA commitments have been made, the Highline School District passed a bond measure which includes its share, and the State of Washington approved its first year's commitment to the program (\$5 million) in this year's budget. Construction has begun at the first school. The next three will be completed by 2006. The program is scheduled to be completed in 2011.
- Two nighttime Alaska Airlines air cargo aircraft have received hush kits to reduce engine noise, and the aircraft were moved back to Sea-Tac Airport in December 1997. All large jet aircraft over 75,000 pounds operating at Boeing Field and Sea-Tac are now Stage III compliant.
- The Port has created the Fly Quiet Committee, which is reviewing existing noise programs and recommend improvements. The committee met several times between July 2002 and May 2003, and developed a set of recommended actions by the Port. The Port has approved the following set of recommendations:
 - Incentives for airlines to improve their compliance with nighttime noise abatement measures, including the Elliott Bay noise abatement corridor
 - Reducing ground run-up noise on the airport
 - Improved public outreach to report on noise abatement progress/compliance
 - Increased fines for ground noise program violations
 - Continued pursuit of a hush house for engine run-ups (future action)
- On March 3, 2003, the Burien City Council adopted Ordinance 382 amending the Comprehensive Plan for the *NE Special Planning Area (NESPA)*. The amendments create new Comprehensive Plan provisions and a new zoning category called "Special Planning Area 4" (SPA 4). The North East Special Planning Area (NESPA) Study was an effort to plan for the transition of this area (under and near the north approach to the 3rd runway) from the existing non-compatible land uses to new development that will be compatible with the airport. The city council is scheduled to adopt the new zoning map and provisions in January 2004. The NESPA study area encompasses 145 acres containing 564 dwelling units (96 mobile homes). This study is a significant step towards resolving some of the most critical airport compatible land use issues around Sea-Tac.
- PSRC published its final report (*Initial Review of Comprehensive Land Use Plans for Community Areas Within Sea-Tac Airport's Projected Noise Contour*) in May 1999 reviewing the comprehensive land use plans for Burien, Des Moines, Federal Way, Kent, Normandy Park, SeaTac, Seattle, Tukwila, and King County. The review identifies goals, objectives, policies, and strategies that relate to the airport. Land use plan maps and Sea-Tac noise contours were consolidated into PSRC's GIS database. Relationships between noise contours and planned land uses (land use types) were evaluated. In addition, several comprehensive plan amendments were reviewed and

analyzed, and are described in the report. The report concluded that while much positive work has been done to improve land use compatibility around Sea-Tac, existing approved land use plans allow for the construction of new incompatible residential development. Some 1,500 acres of incompatible land uses are shown on these land use plans for areas inside the projected year 2010 65 DNL noise contour. The report recommends increased compatible land use planning efforts to help prevent new development of incompatible land uses, thus reducing future noise exposure impacts from the airport. The Burien NESPA planning effort and resulting comprehensive plan and zoning amendments may help prevent additional development of incompatible land use around the airport in the city of Burien. The *Initial Review of Land Use Plans* report was sent to all communities around Sea-Tac Airport, is available in the Information Center (206-464-7532), and the *Executive Summary* of the report is available on the PSRC web site.

- Although there are positive land use planning efforts being made to address the long term issue of compatible land use, existing plans and zoning ordinances continue to allow construction of new incompatible development around Sea-Tac. As required in Resolution A-96-02, the Regional Council monitors the construction of new residential units within the forecast year 2010 65 DNL noise contour. Over the past 12 years, building permits for some 232 new residential units have been granted by the cities surrounding Sea-Tac Airport. While the number of new units has declined in the past two years, the issue will require continued work and cooperation by the Port, the FAA, and the local land use jurisdictions.

AIRPORT COMPATIBLE LAND USE

Under the Growth Management Act, the Puget Sound Regional Council is required to certify that the transportation elements in locally adopted comprehensive plans meet transportation planning requirements and are consistent with *Destination 2030*, the Metropolitan Transportation Plan. The Regional Council also certifies the countywide planning policies for consistency with *Destination 2030*. Certification of local transportation elements is a requirement for jurisdictions that intend to apply for funding available through the federal Transportation Equity Act for the 21st Century (TEA-21). The review of local plans also provides an opportunity to share information and better coordinate local and regional planning efforts.

One of the primary tools used by the Regional Council in our policy and plan review and certification process is the *Plan Review Questionnaire For the Review of Comprehensive Plans, Including the Certification of Transportation Elements*. The Regional Council has included certification criteria related to airport compatible land use in its policy and plan review questionnaire. The questionnaire asks cities and counties to identify general aviation airports within or near their boundaries, describe existing land uses in the vicinity of the airports, identify actions taken to discourage the siting of incompatible land uses adjacent to the airports, and to identify future airport ground transportation access needs. After reviewing information in the questionnaire and local agency plans, Regional Council staff provides comments on plan policy and language, and offers technical assistance to land use planners to assist them in identifying key airport land use compatibility issues and to help in developing plan policies and regulations to address those issues.

As cities and counties amend their plans to meet the December 31, 2004 deadline, the Regional Council will be working with them to identify areas where their policy and plans could be strengthened to improve compatibility between the region's airports and their host communities. As a first step in this process, Regional Council staff have completed a preliminary analysis of city and county comprehensive plans. This analysis reviews how well each plan addresses the four items contained in the PSRC Policy and Plan Review Questionnaire and provides suggestions for strengthening policy and plan language to better address airport compatible land use.

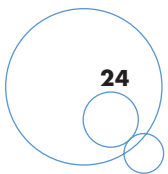
Changing Conditions and Future Challenges for the Regional Airport System

The past three years have brought significant change and increasing uncertainty about the future of the aviation industry. The terrorist attacks of September 11, 2001 forever altered the course of aviation, and airports in the Puget Sound Region have responded to that changed reality. Another section of this report describes in more detail the security issues facing the regional airport system and the measures taken by airport sponsors, FAA, TSA, and the airlines to enhance safety and security for commercial passengers, air cargo, and general aviation.

In addition to the issues of terrorism and security, and their impact on the cost of flying, the past three years' economic decline has deeply affected the region's airports. Between 2000 and 2003 aviation activity has been down and revenues generated by system users have also declined. Many airports were forced to cut back spending, reduce staff, and rethink their airport improvement programs. Nationwide, passenger traffic was down 34% in September 2001 compared to September 2000. Between 2000 and 2003, passenger activity at Sea-Tac dropped from 28,408,553 to 26,755,888 and total aircraft operations (take-offs and landings) declined from 445,677 to 354,770. According to FAA's 2004 Aerospace Forecasts, total domestic U.S. passenger traffic dropped from 561 million to 482 million revenue passenger enplanements (a 14% drop).

Ripple effects from the airline industry have been felt throughout the U.S. and world economies. In late 2001, the American Society of Travel Agents forecast a loss of 100,000 jobs. As of October 2001, major U.S. airlines had laid off over 150,000 employees and reduced service in many markets to lower their costs. Small aviation businesses have been particularly hard hit.

Looking back over the past three years, airports are wondering what the future will bring. The Port of Seattle is currently revisiting their long range planning for terminal improvements, looking for ways to reduce the costs of their development program. This is happening at many airports throughout the region. The Port of Seattle and King County are reviewing activity forecasts and planned improvements at Sea-Tac Airport and Boeing Field, respectively, to reevaluate future growth and airport improvement needs in light of increasingly tight budget limitations, the downturn in aviation activity over the past 4 years, and emerging federal security requirements.





APPENDIX A Regional Aviation Policy

Unless otherwise stated, the following policy text was taken from *Destination 2030* (adopted May 24, 2001) and the 2001 *Regional Airport System Plan* update:

COMMERCIAL AVIATION POLICY

The region will meet its long-term commercial air transportation needs through the expansion of Sea-Tac International Airport (as identified in its most recent Airport Master Plan Update and related EIS) consistent with the Regional Council's General Assembly action in 1996, which amended the 1995 Metropolitan Plan. *Destination 2030* continues prior actions to include plans for a third runway for Sea-Tac Airport, with additional noise reduction measures, implementation measures, and monitoring steps as noted in Appendix 7 (PSRC Resolutions A-93-03 and A-96-02, including Appendix G). The project must satisfy the Federal Aviation Administration and Port of Seattle environmental impact review and permit processes and be authorized by the Port of Seattle and agencies with permitting authority. In addition, the region will cooperate with the state and local jurisdictions to implement a comprehensive process for evaluating all options to meet the State of Washington's long-term air travel and inter-regional ground transportation needs including high speed rail. The Regional Council will continue to coordinate with all agencies responsible for implementing Resolution A-96-02, and will continue to monitor and report on progress related to the noise reduction steps contained in the Resolution.

The Regional Council will coordinate with the state to enact legislation allowing for substantial and equitable incentives and compensation for communities impacted by the proximity of essential public facilities. The Regional Council will coordinate with the Port of Seattle, WSDOT, the FAA, and other appropriate agencies to identify and implement improvements to the region's surface transportation system to provide improved multi-modal access to Sea-Tac Airport and to mitigate the airport's transportation impacts on surrounding communities.

AIR CARGO POLICY

The following policy related to air cargo is contained in the *2002 Strategic Plan for Aviation*:

- The region will meet short and medium term air cargo demand (2009-2015) through planned improvements at Sea-Tac International Airport and King County International Airport / Boeing Field (as outlined in their most recent airport master plans and related planning documents). The Regional Council will also plan for and support funding of improvements to the regional surface access system to support the regional movement of air cargo shipments.

- The region's longer term air cargo demand (after 2015) will be addressed in future updates to the Sea-Tac Airport and Boeing Field master plans in coordination with regional airport system planning being done by the Regional Council. This coordinated planning for regional air cargo needs will address total regional air cargo demand, the regional distribution of air cargo facilities, the potential for additional regional air cargo activity at airports other than Sea-Tac and Boeing Field, and additional need for surface access improvements. The region will require additional investments in air cargo facilities to meet the region's long range needs. Beyond the years 2010-2015, these needs have not been clearly defined. Additional regional airport system planning and airport specific master planning is required to document existing capacity, evaluate demand, assess the regional marketplace, and develop plans to meet the region's long term needs.

GENERAL AVIATION POLICY

The region will preserve, maintain, and enhance its general aviation airport system as detailed in the *2001 Regional Airport System Plan (2001 RASP)*. The region will support a program of aviation facility and service improvements to allow each airport to fulfill its regional role as defined in the *2001 RASP*. The region also supports strategic investments at general aviation airports to address existing and forecast airport system needs. These investments have been preliminarily estimated at over \$200 million between 2000 and 2010 to implement the following action strategies:

- The region will support investments in the airport system to meet growing demand, provide increased access to the airport system, meet the broadening needs of the business and corporate aviation sectors, and to improve system safety and reliability.
- Preserve and maintain the existing airport system infrastructure with strategic investments in airport pavements and by supporting airport compatible land use programs. At a minimum, support funding to maintain the existing condition of the region's airport pavements.
- Enhance airport system safety by meeting FAA and state airport design standards and by addressing airport obstructions (lighting, marking, and removing obstructions).
- Invest in strategic airport system enhancements (lighting, navigational aids, improved runway approaches, runway extensions) to improve the airport system and meet changing user needs.
- Encourage construction of general aviation aircraft storage facilities to accommodate up to 460 new aircraft by 2010 at airports with both the ability and willingness to provide those facilities.
- The region will apply the concept of "essential public facilities" as defined in Washington's Growth Management Act to the region's public use airports as needed to provide a planning process for addressing airport compatible land use in communities adjacent to all system airports.
- The region will support strategic investments in the regional airport system as identified in the *2001 RASP* to address airport system safety and standards, maintenance and preservation, system enhancements, aircraft storage expansion, and related economic development.
- The Regional Council will work with the FAA, WSDOT Aviation Division, airport sponsors, other appropriate public agencies, and the private sector, to identify additional financial resources required to meet the investment needs of the regional airport system and to help mitigate the impacts of airports on adjacent communities. The Regional Council will also explore the potential of using public funds for critical projects at privately owned public use airports.
- The region will monitor the status of major privately owned public use general aviation airports throughout the region (particularly Harvey Field and Crest Airpark). If any of these airports are threatened with closure, the Regional Council will coordinate with the WSDOT Aviation Division, the FAA, the current airport owner, and other appropriate public agencies, to evaluate options for public acquisition of these airports.

- Bremerton National and Tacoma Narrows airports should take steps as outlined in the *2001 RASP* to accommodate growth in corporate and business aviation. These steps should include safety and standards programs, obstruction programs, pavement maintenance programs, compatible land use programs, runway extensions, protection of runway approaches, improved approach lighting systems, development of newer technology instrument approaches (such as GPS), and landside facility enhancements.
- Arlington should take steps to capitalize on its regional niche as a center for experimental, glider, and ultralight activity. In addition, it should improve its all weather capability to provide increased access to the northern portion of the region.
- Airport system investment priorities identified in the *2001 RASP* will be used to communicate the Regional Council's policy concerning funding priorities for airport system improvements. The Regional Council will communicate these priorities with the WSDOT Aviation Division, the FAA, and airport management, and encourage airports to include these investments in their individual airport master plans and capital improvement programs.
- The Regional Council will support airport master plan proposals that are consistent with the *2001 RASP*.
- Concurrent with its planning for the regional airport system, the Regional Council will work with the WSDOT Aviation Division, the FAA, and other appropriate agencies to identify and document the economic benefits of aviation to local communities and to the region.

AIRPORT COMPATIBLE LAND USE POLICY

Building upon its Policy and Plan Review and Certification authority under the Growth Management Act, the Regional Council will continue and expand its efforts to improve land use compatibility adjacent to public use general aviation airports. These efforts will include the following actions:

- Refine the policy and plan review process to clarify the airport land use compatibility criteria to be used in the plan review and certification process.
- Establish airport compatible land use guidelines.
- Provide compatible land use guidelines and technical assistance to local jurisdictions.
- Monitor regional trends in airport compatible land use to assess the effectiveness of the programs.

The Regional Council encourages cities and counties with public use general aviation airports to pro-actively use their planning and zoning authority to prevent further land use encroachment and incompatible land use adjacent to these airports.

REGIONAL AIRPORT GROUND ACCESS POLICY

The following policy statements are contained in the *2001 Regional Airport System Plan* or *Destination 2030*:

- The Regional Council will coordinate with the Port of Seattle, WSDOT, the FAA, and other appropriate agencies to identify and implement improvements to the region's surface transportation system to provide improved multi-modal access to Sea-Tac Airport and to mitigate the airport's transportation impacts on surrounding communities (source: *Strategic Plan for Aviation*).
- Support multi-modal ground access improvement projects which enhance access to major airports throughout the region (source: *Destination 2030*).

POLICY CONTAINED WITHIN RESOLUTION A-96-02

This 1996 Resolution amended the Metropolitan Transportation Plan (MTP) and added planning for a third runway at Sea-Tac Airport to the MTP. The Resolution stipulated that several agencies would take steps to reduce the effects of airport noise on communities around the airport, and report each year on progress toward implementing those action steps. The following copy of Appendix G of the Resolution contains the action steps against which we are monitoring performance. This policy is currently located within Technical Appendix 7 of *Destination 2030*.

Appendix G of the Metropolitan Transportation Plan (*Destination 2030*): Air Transportation Noise Reduction Measures and Implementing and Monitoring Steps

The responsible parties as indicated will agree to pursue additional aircraft noise mitigation for communities surrounding Sea-Tac Airport by implementing the following package of noise reduction measures:

I. The Port of Seattle

The Port of Seattle will pass a Port Commission resolution affirming that it agrees to:

- A. Evaluate and upgrade its existing noise monitoring system to include the use of approximately 25 noise monitors, develop a schedule for completion by the end of 1998, and thereafter disseminate regular reports to the public using data from the new noise monitoring system to include DNL, SEL and Time Above metrics.
- B. Work with the FAA and/or airlines to:
 1. Analyze the potential for reducing the use of thrust reversers.
 2. Voluntarily minimize the number of flights in the middle of the night (1:30 - 5:30 a.m.).
 3. Continue to enforce Airport Rules and Regulations to minimize the number of variances for the Nighttime Limitations Program.
 4. Work with foreign air carriers to gain cooperation in ensuring that Stage 3 aircraft continue to be used for nighttime international flights.
 5. Work with the owners/operators of Stage 2 aircraft under 75,000 pounds to voluntarily limit or eliminate their use.
 6. Continue to work to enforce Airport Rules and Regulations to minimize nighttime engine run-ups.
- C. Modify its existing contract with noise experts to specifically include the need to review methods of mitigating the impacts of low frequency noise and vibration, and to supply such information to the Port.
- D. Design and implement a noise compatible land use plan for Port properties within its current acquisition zone.
- E. Complete the sensitive use public buildings insulation pilot studies.
- F. Seek a public commitment from FAA to evaluate actions needed to prevent apparent violations of the North Flow Nighttime Departure Noise Abatement Procedures to the extent that safety and efficiency allow.

G. In carrying out the Part 150 Study:

1. The Port of Seattle will invite the Regional Council, the FAA, and affected parties to participate, and ensure that they are able to participate actively and constructively, in the Port's upcoming Part 150 study, which will commence in the fall of 1996 and is expected to take two to three years.
2. Part 150 Study participants will be invited to take part in developing the scope of the study, consultant selection, and in all other milestones and products of the project, such as development of noise exposure maps; development of noise reduction and land use compatibility measures; and Port consideration and approval of the program.
3. Items to be considered in developing the scope of the Part 150 Study will include but not necessarily be limited to:
 - a. Relocation of run-up areas where daytime engine run-ups occur, to reduce ground-related noise.
 - b. Evaluating the potential net benefits of preferential runway use during low activity periods.
 - c. Evaluating benefits and impacts of changes to departure climb profiles.
 - d. Analysis of need to adjust Noise Remedy Program boundaries to include those in 65 DNL by the year 2000, provided that the Port will not reduce its established Noise Remedy Program boundaries for currently eligible properties.
 - e. Evaluating scope, boundaries and funding for public use and multi-family buildings.
4. If, as a result of the Part 150 Study, a proposed noise reduction strategy results in a net improvement but causes a transfer of noise impacts to other communities, the Port of Seattle, Regional Council, FAA and communities affected by airport noise will seek agreement on guidelines or other equitable procedures for dealing fairly with conflicting views and needs of different communities.
5. The Port of Seattle will ask the FAA to include within its Record of Decision on the Master Plan Update Final Environmental Impact Statement the requirement to conduct a Part 150 Study with the goal of assessing needed additional noise abatement and mitigation.

H. School Insulation

1. The Port of Seattle will commit up to \$50 million for school insulation.
 2. The Port of Seattle will meet with the Highline School District to try to reach agreement on a plan for insulating the District's schools. If direct talks between the District and Port fail to produce agreement on a noise insulation program for the District's schools, the Port may request that the PSRC assist the parties in selecting an independent mediator.
 3. The Port will initiate the Highline School District school insulation program consistent with an agreement reached by the District and Port.
 4. Once the Port of Seattle completes the sound insulation program for schools affected by aircraft noise exposure of 65 DNL from Sea-Tac International Airport, it will investigate feasibility and funding for insulating schools affected by then current 60-65 DNL aircraft noise exposure from Sea-Tac. Sound insulation must comply with FAA eligibility criteria to achieve measurable noise benefit.
- I. Deliver to the Regional Council on or before September 5, 1996, a detailed timetable for carrying out the steps specified in subsections A through H of this section, including (a) defined milestones against which the Port's progress toward completion of those steps may be measured, and (b) a schedule for progress on planning, design, and construction of a third runway at Sea-Tac Airport.

II. Highline School District

The Highline School District will:

- A. Meet with the Port of Seattle to try to reach agreement on a plan for insulating the District's schools. If direct talks between the District and the Port fail to produce agreement on a noise insulation program for the District's schools, the District may request that the PSRC assist the parties in selecting an independent mediator.
- B. Initiate its school insulation program, consistent with an agreement reached with the Port of Seattle.

III. Puget Sound Regional Council

The Puget Sound Regional Council will:

- A. Seek funding to (a) actively participate in the Port's upcoming Part 150 Study; (b) undertake a study to evaluate a financing mechanism for the acquisition of incompatible uses as noted in III-G, below; and (c) conduct surveys as noted in III-H, below.
- B. As part of its Policy and Plan Review process, the PSRC will:
 1. Conduct an initial review of land use plans for areas that are within the 65 Ldn contour, and provide annual review of future changes;
 2. Offer assistance to jurisdictions in finding ways to minimize the introduction of incompatible land uses;
 3. Provide facilitation services, if requested by the Port of Seattle and jurisdictions in the vicinity of Sea-Tac Airport, to reach agreement on ways to redevelop currently incompatible land uses.
- C. Upon receipt of a Resolution approved by the Port of Seattle that contains all the items noted under **Port of Seattle Resolution**, above, the Executive Director of the PSRC will notify the Executive Board that the Metropolitan Transportation Plan amendment including a third runway at Sea-Tac Airport has taken effect.
- D. Encourage King County to continue its efforts to eliminate the two nighttime Alaska Airlines Stage 2 flights from Boeing Field.
- E. Seek support for state legislation for state policies regarding land use compatibility around commercial airports, and will seek support for federal legislation to allow use of federally approved funding for insulation and acquisition programs beyond the current federal constraints.
- F. Annually convene representatives of the Port of Seattle, FAA, communities affected by airport noise, and other interested parties, to coordinate efforts by all parties to alleviate issues that are undercutting the effectiveness of current noise reduction efforts and eliminate roadblocks to resolving issues, then report on progress to the Executive Board.
- G. Undertake a study which evaluates use of a state-financed revolving fund, or other financing mechanism (such as a public/private partnership) for the acquisition of incompatible uses within the 65 DNL to the 75 DNL contour, for conversion to noise compatible non-residential uses. Any such funding mechanism must demonstrate a balance between long-term costs and revenues. The results of the study should be presented to the Executive Board by June 30, 1997.
- H. Conduct statistically valid surveys, during and after construction of the third runway, to assess Sea-Tac Airport's effects on such items as noise, transportation/circulation, and land uses in the surrounding communities.

- I. Recommend that the State, in cooperation with appropriate local jurisdictions and regional transportation planning organizations, implement a comprehensive process for evaluating all options to meet the State of Washington's long-term air travel and inter-regional ground transportation needs, including high speed rail.

IV. Washington State Department of Transportation and Transportation Commission

The Washington State Department of Transportation and Transportation Commission will:

- A. Seek funding for acceleration of efforts to provide improved higher speed rail service in the I-5 Corridor.
- B. Seek legislation similar to what was approved for general aviation airports during the 1996 session, to provide state policies for land use compatibility around commercial airports.

V. Monitoring Compliance

To ensure that measures contained in this Appendix G to the 1995 Metropolitan Transportation Plan are implemented as described, several mechanisms for tracking success and assuring accountability will be implemented. They include:

- A. The Port of Seattle will report to the Regional Council twice yearly on progress toward all the efforts encompassed in this action, **and**
- B. King County will report to the Regional Council Executive Board every six months on progress toward eliminating nighttime Stage 2 flights at King County International Airport, **and**
- C. Regional Council staff will report annually to the Executive Board on its participation in the Part 150 Study and, based on its Policy and Plan Review Process, on progress toward minimizing the introduction of incompatible land uses within the 65 Ldn contour.

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