EXECUTIVE SUMMARY

Study Overview

In 2005 the Washington State Legislature initiated the Long-Term Air Transportation Study (LATS). The legislature authorized this study recognizing that Washington's network of 140 public use airports must be managed as an integrated system in order to strategically invest the public resources necessary to:

- Preserve statewide aviation capacity.
- Provide aviation facilities that effectively accommodate future demand.

Washington faces a series of challenges in maintaining an aviation system that effectively meets the future needs of residents and visitors to the state. The Federal Aviation Administration (FAA) is forecasting significant growth in Washington's aviation activity over the next 20 years. Further, fluctuations in both federal and state funding is creating uncertainty about the future resources that will be available for aviation facility development. Therefore, Washington needs long-range planning and a statewide strategy to ensure that adequate aviation capacity is provided to accommodate future growth.

Through LATS, the legislature required the Washington State Department of Transportation (WSDOT) to:

- Assess existing capacity.
- Implement a state aviation plan to determine long-term air transportation needs.
- Provide a framework for satisfying future statewide needs.

LATS Is a Three Phase Effort

LATS is being developed in three phases, with this report representing the second phase of the effort. Each phase answers one of the three basic questions fundamental to the development of a system-wide approach to managing Washington's aviation resources:

- **Phase I – What do we have?** – This phase prepared an inventory of statewide aviation activity, airport facilities and capacity, and provided an evaluation of existing conditions.

- **Phase II – What do we need?** – Phase II provides a market forecast of future statewide aviation activity and compares that activity to available airport capacity to determine potential capacity shortfalls and identify alternative strategies for meeting regional and statewide demand.

- **Phase III –How will we get there?** – During this policy development phase, a council appointed by the governor will consider the LATS findings and public input to make recommendations regarding how best to meet the state's long-term commercial and general aviation needs.

To assist the Governor's Council in making informed decisions, Phases I and II of LATS provide the analytic foundation to accomplish the following objectives:

1. Make recommendations regarding how best to meet the statewide commercial and general aviation capacity needs.

2. Determine which regions of the state are in need of airport facility improvement and the long-range capacity needs at airports within the regions.

3. Make recommendations regarding the placement of future commercial and general aviation airport facilities.

Public and Stakeholder Participation

As with all of its projects, WSDOT Aviation believes it is critical to solicit feedback and share results of this important statewide aviation study in a transparent and comprehensive way. Throughout the study, WSDOT and the FAA have worked with the study team to provide input and direction, review ongoing analysis, and guide ongoing efforts. The study effort has benefited from the Aviation Technical Advisory Committee (TAC), a 16 member committee comprised of local, regional and state agency representatives. The TAC has received regular briefings, reviewed technical analysis, and provided input and recommendations. Additionally, individual airport sponsors across the state have provided factual information regarding their facilities, reviewed the aviation activity forecasts and recommended modifications where necessary. WSDOT has also conducted interviews of more than 30 stakeholders, including state legislators, airline and airport representatives, and system users to provide details about the LATS effort and obtain their input, expectations and recommendations.

WSDOT has also provided opportunities for public participation through several regional public meetings, a LATS project website, web-based surveys of aviation system users, and quarterly newsletters. As a result of these efforts, the LATS project reflects the input, recommendations, and perspective of a vast range of public and stakeholder interests.

What Was Accomplished in Phase II?

Phase II of LATS is focused on understanding the expected future growth in aviation activity on a statewide, regional, and individual airport basis, and determining where existing airport capacity and facility attributes must be expanded or enhanced to effectively satisfy future demand. Key areas of analysis conducted during Phase II and described in this report include the following:

- A review of national and state aviation trends.
- Individual market analyses specifically pertaining to Washington's commercial airports.
- Forecasts of future aviation activity in Washington, including airline passenger traffic, air cargo, and general aviation activity.
- A determination of future capacity shortfalls at the individual airport and regional levels.
- An analysis and update of the State Airport Classification System proposed in Phase I.
- A refinement of performance objectives designed to quantify current airport system performance and the benefits associated with potential facility enhancements.
- A review of current programs to enhance rail service in Washington State and an assessment of the impact that future rail system development will have on future aviation system needs within the state.

What Were the Key Findings of Phase II?

Significant capacity constraints anticipated by 2030.

Airfield capacity constraints are expected at ten airports by 2030

The Phase I report identified six airports that appeared to be nearing capacity in 2005: Sea-Tac, Boeing Field, Kenmore Air Harbor, Inc., Kenmore Air Seaplane Base, Auburn Municipal, Harvey Field, and Ephrata Municipal. The Phase II analysis found ten airports expected to experience capacity constraints in 2030.

Sea-Tac expected to reach capacity by 2024.

Sea-Tac International Airport is expected to reach capacity by 2024. As the state's primary commercial airport, attracting nearly 90 percent of total Washington air passengers, Sea-Tac is relied on by passengers from across the state. Passengers use Sea-Tac either to originate air trips or as a major connecting point that provides access to the national and international air transportation networks. Therefore, it remains essential to the state's commercial aviation system that future demand that might not be accommodated at Sea-Tac has access to the air transportation system through other means.

Six of 20 commercial service airports will need to address terminal capacity before 2030.

The Phase I report, which addressed existing conditions, found that Sea-Tac and Tri-Cities had exceeded 60 percent utilization of existing passenger terminal capacity in 2005. The Phase II analysis found that in 2030, the list of airports exceeding that threshold increases to six: Anacortes, Kenmore Air Harbor, Inc., Kenmore Air Seaplane Base, Orcas Island, Sea-Tac and Tri-Cities. Of those, four will have capacity utilization levels sufficient to warrant an expansion of terminal facilities.

Approximately one-quarter of Washington's public-use airports are expected to have aircraft storage capacity shortfalls by 2030.

The Phase I analysis found that many areas of Washington State are currently approaching capacity for aircraft storage – utilization levels reached 85 percent statewide in 2005. As a whole, the state's airport system is expected to have adequate long-term storage capacity, with a utilization rate of 36 percent by 2030. This is complicated by much higher utilization levels in certain areas of the state, particularly in the Spokane and Southwest Washington Special Emphasis Regions, where aircraft storage capacity is expected to be nearly 100 percent utilized by 2030. This finding is also complicated by competition for airport property by other aviation uses – while the analysis assumed that most developable land would be available for hangar development, it is likely that the property may be used to serve a variety of other uses.

Air cargo capacity influenced by geographic location and the availability of apron space and developable land.

The Phase I report found that ample cargo capacity exists statewide to meet current demand. The exceptions were Boeing Field and Sea-Tac, where cargo processing was estimated to be at or above 60 percent utilization of existing facilities. More detailed analysis in Phase II revealed the importance of site-specific factors in understanding an

airport's capacity for serving air cargo operations. For example, the availability of off-airport properties for cargo processing facilities is an important determinant of capacity at Boeing Field and Sea-Tac, where there are limitations on developable land on the airport. Conversely, the research showed that cargo processing facilities were not an important factor at small airports. Feeder services operating at those facilities do not require building space for cargo handling.

There is a significant imbalance in demand and capacity of Washington State's air transportation system.

Demand for aviation facilities and services tracks with population and economic growth. For this reason, concentration of demand is often found in areas with concentrations of population. Forecasting conducted as part of the Phase II analysis supports this view.

In Washington State, many types of aviation activities are concentrated in Puget Sound. The region currently accommodates 87 percent of Washington State's scheduled airline passenger traffic, 80 percent of the state's air cargo operations, and 45 percent of the state's general aviation activity. This concentration of activity is expected to continue through 2030. However, the region does not contain a proportionate percentage of the state's capacity available to serve this demand.

Aircraft storage demand is concentrated at a small number of airports across the state.

As a whole, the Washington State airport system is expected to have adequate long-term aircraft storage capacity. The system is expected to be 29 percent utilized by 2015 and 36 percent utilized by 2030. However, aircraft storage capacity at certain individual airports may be insufficient to meet projected demand, and additional storage will be required, either at the airport itself or at surrounding alternate airports.

A substantial amount of system capacity is provided by privately-owned airports, which are at higher risk for closure.

Public agencies have a limited ability to influence the preservation of privately-owned transportation facilities, even though they substantially contribute to the state's air transportation system capacity. Privately-owned airports generally do not perform as well as publicly-owned airports in all of the various airport classes. This is likely because privately-owned airports are ineligible for state grant funding, and the same level of effort is not undertaken to protect their long-term viability, compared to publicly-owned airports. Generally these airports have a higher risk factor of converting to other uses than similarly sized airports

that are publicly owned. Also, encroachment of incompatible development may inflate property values leading to conversion to other uses.

There are enough runways in the state system to accommodate future demand. However, available capacity is located in areas of the state with low levels of demand.

The primary capacity issue is the distribution or concentration of demand in the most populated regions of the state. The smaller, outlying airports in Washington provide over 60 percent of the state's operations capacity, but only generate about 25 percent of the demand. Conversely, while the largest airports in the state provide one-third of operations capacity, they attract 75 percent of the demand.

The airports expected to experience capacity constraints are the ones most likely to have statewide impact.

Sea-Tac, Boeing Field and Spokane International – three of the state's busiest airports – are expected to experience capacity constraints by 2030. In fact, Sea-Tac is projected to reach capacity by 2024. Due to the significance of these facilities for the state air transportation system, and their relationship to other airports, the impact of congestions at these airports will in turn affect operations at many other facilities throughout Washington State.

Trends contributing to the loss of service at smaller commercial service airports in recent years expected to continue through 2030.

Many of the smaller airports in Washington State have lost a substantial amount of air service in the last 10-15 years. With the exception of a Sea-Tac, Boeing Field, Bellingham and a number of San Juan Island airports, all other commercial service airports in Washington State have lost scheduled capacity since 1997. Six airports have lost scheduled service entirely.

Loss of service at small airports in rural communities across the state is driven by two trends expected to continue through 2030:

Smaller airports are generally dependent on a single carrier

Scheduled service at most of Washington's smaller airports is increasingly characterized by the dominance of a single air carrier, and in many cases, a single monopoly scheduled carrier. At 13 of the 18 Washington airports with scheduled air service, a single, monopoly carrier provides service. Airports that are dependent on a single air carrier for scheduled air service

could be at greater risk for service loss than airports served by multiple carriers.

Larger airports will continue to attract passenger traffic from smaller airports.

Sea-Tac, Portland and Spokane are the primary airports diverting traffic from local airports in Washington State. These airports remain attractive to travelers because of their nonstop service to both domestic and foreign destinations, and their high level of service frequency. With Southwest Airlines and other low-cost carriers serving all three airports, the availability of low fares is an additional factor compelling passengers to drive long distances to use these airports. Therefore, the state's largest airports will continue to capture an overwhelmingly large share of traffic and commercial activity.

The U.S. DOT's Essential Air Service (EAS) Program could act to prevent a total loss of scheduled air service at small community airports facing the greatest risks. However, even with EAS protection, communities are only guaranteed a minimum of two roundtrips a day to a designated hub airport. Given the low levels of service provided and subsidized under EAS,, participating communities have often experienced continuing declines in passenger traffic.

Aviation capacity issues are inter-related: congestion in one area influences available capacity in another. Inaction may limit options.

Although the capacity of airports is measured through separate analyses of specific facilities (e.g., airside, passenger terminal, air cargo, aircraft storage), the fact is that all of these elements are interrelated at an airport. Increasing airfield demand is directly related to increasing demand on terminal, cargo, aircraft storage and other facilities. Consequently, improving the capacity of a single element such as the airfield can lead to increased demand for other, landside based facilities. Additionally, as demand and capacity grow at individual airports, the strain on the system's airspace capacity also increases. Therefore, solutions proposed for addressing capacity deficiencies at an airport must give consideration to the full range of consequences that such an action may have on the capacity of the remaining facilities at the airport.

Similarly when regional capacity issues are identified, it is important to remember that an airport that has excess capacity to accommodate increased operations will be attractive to all classes of system users. For instance, when considering where potential increases in passenger traffic can be accommodated within the state, it must be remembered that the same airports that have the physical components, locational attributes, and socioeconomic characteristics to attract commercial passenger traffic may

also be in demand for other types of aviation activity such as general aviation. Therefore, when considering the potential of an airport to - for example - take on a commercial service role, it should be recognized that the same airport may also represent a desirable location for excess cargo and corporate general aviation activity that cannot be accommodated at other airports in the region. In some instances, it is likely that the capacity of the airport in question will not be sufficient to accommodate all classes of potential new demand.

Passenger rail improvements will not provide meaningful capacity relief to the air transportation system.

Existing levels of airline passenger origin-destination traffic in the Seattle-Portland and Seattle-Vancouver markets represent an extremely small proportion of total Sea-Tac passenger traffic. Even if all of this air traffic was diverted to the improved inter-city rail service, this would not produce a material reduction in overall passenger demand at Sea-Tac.

Improved rail speeds and connectivity to the airports at Portland, Oregon and Vancouver, B.C. will still not be competitive with automobile drive times to these airports for passengers from the greater Seattle region. As a result, it is not expected that these rail improvements will cause passengers who currently choose to begin their air trips at Sea-Tac to instead choose to originate at one of these alternate airports.

Analysis measures aviation system performance on a variety of objectives for access and level of service.

- All but one percent of the state's residents live within 90 minutes of a Regional Service or comparable Commercial Service Airport.

- Airports with airfield pavements currently perform well on pavement condition objectives.

- Land use protections are inadequate for airports in all classifications. Compliance with nearly all the land use objectives is noticeably lower than in other measures. Only 35 percent of airports are protected by comprehensive plan policies, and only 22 percent are protected by zoning. This suggests that significant improvement is needed in land use compatibility planning for airports throughout the state.

- The availability of navigation equipment is a weakness in the performance of the state air transportation system. In fact, the instrument approach objective has the lowest compliance for all

applicable classifications. Compliance is as follows: Commercial Service, 63 percent; Regional Service, 37 percent; and Community Service, 22 percent. This objective is an important indicator of all-weather, 24-hour airport access, which opens the facility to many types of aircraft and supports economic development, emergency medical transportation, and business aviation.

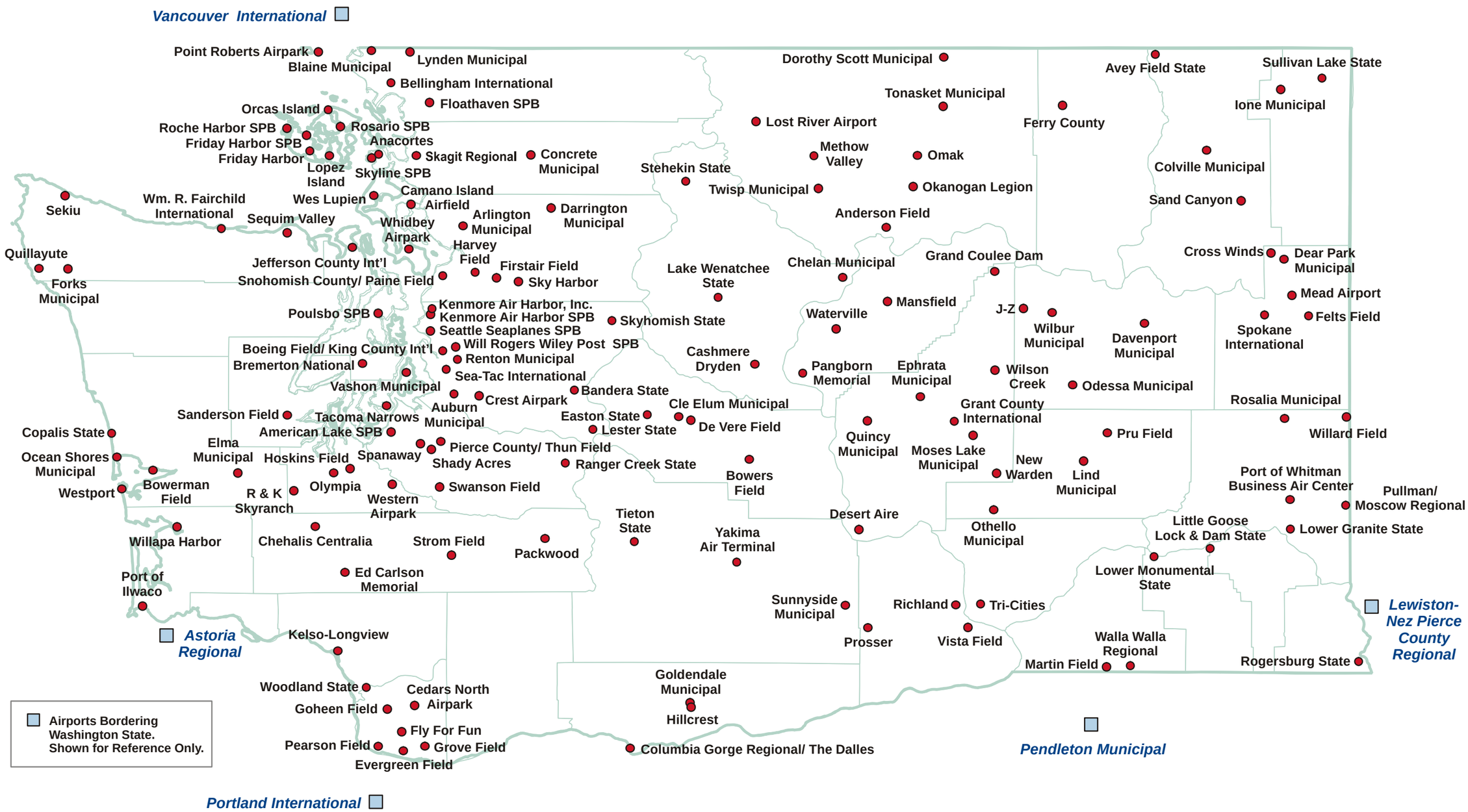
What Are the Next Steps?

Phase II of LATS revealed a series of key challenges and issues that affect the state's ability to effectively serve the long-term aviation needs of its residents, visitors, and businesses. During Phase III, the governor will appoint a ten member Aviation Planning Council to develop recommendations to the Washington State Legislature regarding specific policies and strategies to meet these challenges.

In order for the Governor's Council to fulfill this mandate, it must be well informed as to both the nature of the specific issues and the implications of alternative strategies that might be pursued in order to address these issues. It is the responsibility of WSDOT to provide an adequate foundation for the Governor's Council to develop well-reasoned recommendations that reflect an understanding of:

- Underlying aviation issues.
- Advantages and disadvantages of alternative policies and actions.
- Respective positions of Washington residents, businesses, and aviation stakeholders as they pertain to specific system challenges.

Project Milestones

- Council appointed in Summer 2007.
- Project team to initiate Phase III work in July 2007.
- Council convened in January 2008.
- Council recommendations forwarded to legislature by July 2009 .

Washington State Public Use Airports