
Final Report
**Master Plan Update for
Sea-Tac International Airport**

Prepared for
The Port of Seattle
September 1985

Please Return To
Ann Bonney
via
Minnie Brasher

EXECUTIVE SUMMARY

This updated master plan for Sea-Tac International Airport is a guide for the long-term development of the Airport. It identifies for the Port, the airlines, and the public what actions and physical improvements are necessary to accommodate the future growth of air traffic and the evolving characteristics of the air transport industry.

ROLE OF SEA-TAC

Sea-Tac International Airport is a major economic asset to the City of Seattle, King County, and the Puget Sound region, and is the principal air carrier airport serving the northwest. The primary role of the Airport is to serve the traveling public and to promote trade by accommodating the air transportation needs of the region. Equally important is the Airport's role as an international gateway for passengers and cargo.

POLICY GUIDELINES

A series of policy guidelines and assumptions were developed to reflect both stated Port policy and institutional and environmental constraints.

For example, it was determined at the outset that no new runways at Sea-Tac would be considered, primarily because (1) the existing runway configurations had previously been determined to provide adequate capacity for the planning period, (2) there already has been an enormous investment in the existing runways, and (3) construction of a new runway would have a large environmental impact. Similarly, it was reconfirmed that Sea-Tac should continue to accommodate general aviation activity only to the extent that such activity supports its function as the principal air carrier airport in the region.

AIRPORT ACTIVITY AND FACILITY REQUIREMENTS

In 1984, Sea-Tac accommodated 10,476,650 passengers and 223,878 aircraft operations (landings and takeoffs).

Several forecasts of aviation demand for Sea-Tac were prepared in recent years. These forecasts were reviewed in light of current and projected trends affecting passenger and freight demand. These forecasts were then translated to short-, medium-, and long-term "planning activity levels" corresponding approximately to the 5-, 10-, and 20-year planning horizons. Planning activity levels for total annual passengers enplaning and deplaning range from 11.8 million in the short term to 21 million in the long term. Planning activity levels for total annual aircraft operations range from 131,500 in the short term to 165,500 in the long term. These activity levels were then used to determine the number and type of facilities that would be required at the Airport in the future.

RECOMMENDED AIRPORT MASTER PLAN

Many alternatives for providing needed facilities and land areas were developed and evaluated as part of the overall process leading to the recommended Airport Master Plan attached to this Executive Summary. The following summarizes the principal features of that recommended Master Plan.

1. Passenger Terminal Complex. Continued expansion of the Main Terminal and North and South Satellites is recommended in the Master Plan to accommodate the long-term requirements for 56 air carrier gates and 18 commuter airline gates. Associated passenger processing facilities (such as ticketing, bag claim, security inspection, and Federal Inspection Services) would be accommodated by these expanded terminals. Other plan concepts for providing additional terminal facilities were considered, including new westside and northeast terminals and satellites.

However, the recommended plan was selected because it maximizes existing investment, and provides the most flexibility for future expansion as the need arises.

In the short term, the principal improvements to the Passenger Terminal Complex include:

- Expansion of the north end of the main terminal by about 150 feet.
- Expansion of Concourse D to provide nine additional narrowbody gate positions.
- Provision of commuter aircraft parking positions near the center of the main terminal.

Improvements to the curbside will result when the main terminal is expanded to the north in the short term. In the long term, constructing the shuttle bus plaza within the parking garage and widening the arrival and departure drives in front of the terminal will provide sufficient areas for loading and unloading passengers and baggage.

2. Automobile Parking. Additional parking facilities will be required to satisfy both short-term and long-term demand. The demand for Port-operated public parking is estimated to increase from the current level of about 4,700 spaces to more than 7,500 spaces in the long term. These spaces can be provided in accordance with the original expansion plans for the parking garage. Also in the long term, the demand for privately operated off-Airport public parking is estimated to increase from about 5,400 spaces to more than 11,000 spaces. Such an increase

land area can be developed on the Airport to provide remote public parking lots with shuttle bus service to the terminal area in the event that off-Airport facilities are not provided in accordance with demand.

Employee parking demand in Port lots is estimated to increase from the current level of 2,450 spaces to about 3,800 spaces in the long term. The proposed improvements in the Master Plan also incorporate rental car parking, taxi and bus staging, and other related needs over the long term.

3. Air Cargo and Airline Maintenance Facilities. Air cargo facilities should continue to be developed in the northeast area of the Airport, as well as in the area on the west side of the airfield. The westside area would be particularly suitable for all-cargo airlines that have little need to interact with aircraft using the Passenger Terminal Complex.

Over time, the expansion of the Passenger Terminal Complex will require the relocation of all buildings now designated as airline maintenance and hangar facilities. The Master Plan provides for these facilities to be relocated to the northeast and the westside areas.

Thus, a total of approximately 90 acres are reserved in the northeast area and 50 acres in the westside area for the development of air cargo and airline maintenance facilities. These sites are sufficient to contain the necessary buildings, aprons, and employee parking areas for these activities.

during the next five years of the Port's overall program to be \$38,301,000. Estimated grants-in-aid are shown in Table 8.

Fund Requirements

Based on the Port's scheduled timetable for staging the implementation of individual project elements and the capital requirements associated with this timetable, the Port estimates that a \$48,500,000 issue of revenue bonds will be required to cover capital expenditures between FY 1986 and FY 1990. The following assumptions pertain to the issuance of the bonds:

1. The bonds would be issued in late 1985.
2. A minimum balance of \$10 million will be maintained in the Airport Development Fund as a reserve for future contingencies.
3. Revenue Bonds are estimated to be amortized over 20 years. This analysis assumes an average interest rate of 10% per year.
4. Issuances expenses are estimated to be 4% of the principal amount of the bond issue.

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The financial projections included herein are based solely on information from the sources indicated and assumptions and calculations provided by Port management. The achievement of any financial projection may be affected by fluctuating economic conditions and is dependent upon the occurrence of other future events that cannot be assured. Therefore, the actual results achieved may vary from the projections and the variations could be material.

Extract From : 1977 Highline Communities Plan

Legal and Administrative Framework

A number of agencies have either plans, policies, rules or regulations that affect the Highline area. It is important to recognize that this plan does not stand alone, but is in the context of other policies and plans that exercise an influence on Highline.

The Comprehensive Plan for King County, Washington - 1964:

Advocates an "urban center development concept" for the County, recognizing and encouraging the expansion or renewal of existing urban (town) centers as focal points for employment, commerce and cultural activities to serve local community clusters; rationalizes and lists development policies for specific categories of land use, transportation, business, industrial, residential, open space, public and semi-public buildings, and utilities; specialized plans and reports on specific subject areas have supplemented the official Comprehensive Plan from time to time (an example is the "Urban Trails Plan"); additional policies (such as those in regard to open space) have also been adopted by the County Council as supplements to the Comprehensive Plan.

The Sea-Tac Communities Plan - 1976:

A plan to achieve maximum compatibility between Sea-Tac Airport and the surrounding communities. The plan established three basic programs to achieve that compatibility: outright acquisition of noise impacted areas; private redevelopment or conversion; and reinforcement of existing land use areas or neighborhoods.

Water quality and drainage plans were established for Miller and Des Moines Creeks; air quality was defined, as were methods of monitoring and improving air quality; a land use plan for the airport and its immediate surroundings was developed; purchase assurance, easements, insulation and property advisory services were devised to deal with noise affected areas not to be acquired.

* The ordinance adopting the Sea-Tac Communities Plan for King County (2883 Sept., 1976) established that "the Highline Communities Plan shall, upon its adoption, be the official zoning guideline for implementing the land use concept of the Sea-Tac Communities Plan."

Data on land use, aviation demand and capacity, air and water quality, solid waste, noise exposure, community attitudes, neighborhood quality, population and employment trends and forecasts, public facilities and services, circulation systems and vehicular activity levels and development hazards was gathered as part of the planning process. Much of this information has been put to use in development of the Highline Communities Plan.

ACTUAL NOISE CONTOUR DATA for 1987/88 and 1991 at SEA-TAC INTERNATIONAL AIRPORT
 COMPARED to 1996 FUTURE ESTIMATES

by Hans Aschenbach
 2/17/93

Year	1987/88 ¹	1991 ²	% change from 1987/88	1996 ² (estimate) ³	% change from 1991
Operations ⁴	309,195	355,007	+14.9%	403,500	+13.7%
Jet Operations ⁵	175,314	193,482	+10.4%	238,051	+23.0%
Stage 2	103,085	90,052	-12.6%	59,432	-34.0%
Stage 3	72,229	103,430	+43.3%	178,619	+72.7%
Stage 3 by %	41.2%	53% ⁶		75%	
65 Ldn noise contour (in acres) INM version 3.9 ⁷	13,688	14,128	+3.2% ⁸	9,502	-32.7% ⁹

¹ Source of 1987/88 data (Aug 1987 to Jul 1988): Coffman Associates, Inc., Noise Exposure Map Documentation for Sea-Tac International Airport, (1989), Tables 1E, 1F, and 2F. This study, prepared for the Port of Seattle (POS) is widely cited in other POS reports.

² Source of 1991 data and 1996 estimates: Port of Seattle, Sea-Tac International Airport Noise Exposure Map Update: 1991 (DRAFT), (April 1992), Table 2A and DRAFT Noise Exposure Maps for 1991 and 1996. The 1991 data is actually from calendar year 1990, but since it is used in the 1991 NEM, it is listed as '1991' to avoid confusing the reader.

³ These 1996 POS estimates were based on several sources according to the source document cited in footnote 2. Source p. 33: "The breakdown into Stage 2 and Stage 3 subcategories was based not only on historical fleet mix growth trends and information directly from the airlines, but also on assumptions about changes that would occur due to the Sea-Tac Noise Budget and Nighttime Limitations Program." The Sea-Tac Noise Budget and Nighttime Limitations Program are major parts of the POS Mediation Effort of 1990. The Mediation Effort package was never signed or ratified by any party other than POS. It does not have the force of law. Furthermore both the Sea-Tac Noise Budget and Nighttime Limitations Programs allow the POS Director of Aviation to grant complete waivers to any provision. Several waivers have already been granted to the Nighttime Limitations Program.



Sea·Tac

Area Update



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April 3, 1989
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Introduced by: Barden/Nickels

Proposed No.: 88 - 188

ORDINANCE NO. 8996

AN ORDINANCE relating to Comprehensive Planning; adopting the Sea-Tac Area Update; adopting the Sea-Tac Area Update Area Zoning; amending K.C.C. 20.12.240 and Ordinance No. 2883, Section 1, Ordinance No. 3530, Section 1, and Ordinance No. 5401, Section 1, as amended.

PREAMBLE:

For the purpose of effective areawide planning and regulation, the King County Council makes the following legislative findings:

1. The Sea-Tac area is an appropriate geographic area for augmentation and amplification of the King County Comprehensive Plan through the adoption of the Sea-Tac Area Update and Area Zoning.
2. The Sea-Tac area has increasing demand for intensive land uses and requires areawide planning and zoning.
3. King County, with the assistance of the Sea-Tac Area Update Citizen Advisory Committee, the Technical Advisory Committee, the Port of Seattle and general citizen input, has studied and considered alternative land use, programs and other means to provide for the orderly development of the Sea-Tac Update area and has considered the social, economic and environmental impacts of the plan and areawide zoning. King County has prepared and circulated an Environmental Impact State for the Sea-Tac Area Update and Area Zoning.
4. The Area Update and Area Zoning provide for the coordination and regulation of public and private development and bear a substantial relationship to, and are necessary for, the public health, safety, and general welfare of King County and its citizens.
5. King County has considered the benefits and burdens of North Sea-Tac Park's location and concludes that the park can be a valuable community amenity if it is planned with safety as the foremost consideration.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

SECTION 1. Ordinance 2883, Section, Ordinance 3530, Section 1, Ordinance 5401, Section 1, and K.C.C. 20.12.240 are hereby amended to read as follows:

A. The "Highline communities plan," attached to Ordinance 3530, is adopted as an addendum to the comprehensive plan for King County. The Highline communities plan is amended by those

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1985 MASTER PLAN

PAGE 1.

NO NEW RUNWAY WOULD BE CONSIDERED BECAUSE:

CONSTRUCTION OF A NEW RUNWAY WOULD HAVE A LARGE ENVIRONMENTAL IMPACT.

PAGE 2-2: *and 2-3*

NEW MAJOR RUNWAYS WILL NOT BE CONSIDERED.

*Page 5-7 thru 5-12 Long Range plan
Does not include an additional runway*