Airport Layout Plan Update to the 1997 Master Plan

Transportation Committee Meeting
October 10, 2006

Purpose of the Airport Layout Plan Update

The purpose of this study is to review the existing and long range needs of the Renton Municipal Airport/Clayton Scott Field (RNT) and update the official FAA-approved drawings. The Airport Layout Plan Update will identify improvements needed to address design deficiencies, growth in aviation demand levels, as well as changing conditions and circumstances at the airport. The Plan Update will also include a Capital Improvement Program (CIP) addressing the projects and improvements identified as needed over the next 20 years. Airport improvement projects must be reflected on an FAA-approved Airport Layout Plan in order to be eligible for FAA funding. The following information is provided as background to Committee members in preparation for review of the development alternatives at the up-coming meeting.

Airport Layout Plan Update Process

Key steps in the ALP Update process are identified below. The checked items in the list represent those tasks completed to date.

- ✓ Collect background information and prepare base maps.
- ✓ Update aviation demand forecasts.
- ✓ Prepare facility requirements analysis.
- ✓ Identify alternatives for addressing facility requirements.
- ✈ Select recommended development alternative.
- ✈ Finalize airport drawings based on selected alternative.
- ✈ Prepare Capital Improvement Program and implementation schedule
- ✈ Submit final report and drawings to FAA for approval.

Aviation Demand Forecasts

Aviation demand forecasts were prepared for the period from 2004 through 2025. The results of the updated demand forecasts are summarized below.

Summary of Aviation Demand Forecast

Year	Aircraft Operations	Single-Engine	Multi-Engine	Jet Engine	Helicopters	Other	Total Based Aircraft
2004	87,226	269	12	1	7	1	290
2010	95,410	272	18	4	7	1	302
2015	101,705	274	24	7	7	0	312
2020	108,480	276	31	10	6	0	323
2025	116,212	278	38	13	6	0	335

Note: Totals may not sum due to rounding.

The demand analysis concluded that RNT is capable of supporting 230,000 annual aircraft operations, well above the level of demand projected through the end of the forecast period. Total based aircraft are expected to increase by 45 through 2025, with the growth primarily occurring in the multi-engine and corporate/business jet segments of the aircraft fleet.

Facility Requirements

The facility requirements analysis seeks to quantify the number of aircraft tiedown and hangar positions needed to accommodate projected future demand. An underlying assumption of this analysis is that, as larger, more expensive aircraft locate at the airport, there will be an increasing demand for hangar space and less demand for open tiedown space. The table below summarizes this anticipated shift in demand.

Summary of Based Aircraft Parking and Storage Requirements

Year	Based Aircraft	Tiedowns			Hangar Spaces		
		Positions Required	% of Based Aircraft	Change from Current	Positions Required	% of Based Aircraft	Change from Current
2005	290	205	70%	33	85	30%	0
2010	301	196	65%	26	105	35%	20
2015	312	187	60%	17	125	40%	40
2020	323	178	55%	8	145	45%	60
2025	335	168	50%	-2	168	50%	83

Note: There are currently 170 public tiedown spaces and 85 hangar positions (provided in 78 individual hangar structures) on airport. Additional aircraft parking is available on private lease-hold areas.

Alternative Development Concepts

Three alternative development concepts were prepared to investigate ways to accommodate future aviation activity at the airport. Each concept emphasizes slightly different aspects of the forecast facility requirements, while also taking into consideration the policy recommendations contained in the **Renton Municipal Airport Development Study** approved by the Mayor and Council in 2005. Each alternative concept is briefly summarized below and depicted in the drawings on the following pages.

Alternative 1: The underlying basis of Alternative 1 was to meet the demand for based aircraft tiedown and hangars identified under the Facility Requirements analysis. The concept also provided a "test case" for evaluating maximizing developable airport land by applying less restrictive FAA (ARC B-II) design standards than those currently applied on airport. This change would allow a reduced runway/taxiway separation distance. However, this concept could also adversely impact Boeing's ability to operate on airport by restricting movement of their aircraft.

Alternative 2: Similar to Alternative 1, Alternative 2 was also predicated on less restrictive FAA runway/taxiway separations and taxiway object free areas to gain additional development area. As a result, Alternative 2 assumes construction of a new west side parallel taxiway to open additional airside property for development. In addition, this alternative seeks to increase basing opportunities for corporate aircraft. Similar to Alternative 1, Alternative 2 also imposes potential operational impacts on Boeing's activities on airfield.

Alternative 3: Alternative Concepts 3a and 3b present options for the three key development areas on airport – Aprons A North, B and C. Both concepts assume an expanded business/corporate flight center, corporate hangars and a mix of small aircraft hangars and tiedowns. Overall, existing runway-taxiway separation distances and FAA design standards are

retained and Boeing operations on airfield should be able to continue unaffected by the proposed development.

Findings and Conclusions

Alternatives relying on application of B-II standards to the airport did not yield significant additional building/hangar area due to height limitations imposed by the FAR Part 77 Surfaces. To avoid penetrations of the Part 77 Transitional Surface, structures must be located far enough away from the runway's Primary Surface such that much of the property gained by changing to the B-II standards would not be usable for facility development. Although some additional land area would become available for tiedown apron, to take advantage of it a new full-length parallel taxiway would need to be constructed along the entire west side of the runway, with pavement strength sufficient to accommodate Boeing B-737 aircraft movements. The potential additional revenues derived from the new tiedowns created would not offset the cost of the new taxiway, taxiway lighting and signage relocation. As a result, Alternatives 1 and 2 predicated on ARC B-II standards and Taxiway "A" relocation were rejected as impractical.

Recommended Development Concept

Based on the preceding analyses, both Alternative Concepts 3a and 3b were considered viable. Consequently, staff has selected a composite of Concepts 3a and 3b as the Recommended Development Plan for the airport. Under the Recommended Development Plan, the Alternative 3a layouts for Apron "A" North and Apron "C" are combined with the Alternative 3b layout for Apron "B". The ultimate development configuration for Apron "C" will depend on actual third-party development proposals received by the Airport. However, it is believed that the airport layout presented in the Recommended Development Plan represents the best overall balance between forecast activity levels and City of Renton development goals and objectives for the airport. The Recommended Plan will accommodate all aircraft presently based at the airport, as well as provide a margin for growth. In addition, it provides the City of Renton with the opportunity to pursue its business development goals and objectives for the airport, which should improve airport revenues and yield economic development benefits to the community.

The Recommended Development Plan, presented below, will be used as the basis for updating the Renton Airport Layout Plan, and for identifying future projects and improvements at the airport needed to implement the Plan.