

Eugene Airport Master Plan Update Executive Summary



Prepared for
City of Eugene, Oregon



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&
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The Federal Aviation Administration (FAA) developed the airport master planning process to assist the nation's airports with expansion and improvement plans that meet aviation demand and safety requirements. The Master Plan Update for the Eugene Airport (EUG) provides a development and expansion framework for a 20-year planning period starting from base year 2006.

Plan Goals and Objectives

The goal of the Master Plan Update is to guide future airport development to meet future aviation demand, and consider potential environmental and socioeconomic impacts. To achieve this goal, the Master Plan Update includes the following elements.

- **Demand, capacity, and facility requirements analysis** – Based on the projections of aviation demand, facility requirements were determined and compared to the existing capacity of the airport facilities.
- **Alternative plan concepts** – Once facility needs were determined, alternative methods to meet those needs were developed. These alternatives were evaluated against operational, financial, environmental, and other feasibility-related criteria.
- **Financial plan** – A financial plan was developed that identified strategies and funding sources for proposed capital improvements. Airport improvements are typically funded using a combination of Federal grants (up to 95% of the funding can come from the Aviation Trust Fund, which is derived from fees collected from users of the national aviation system), and local monies earned through Airport operations.
- **Airport Layout Plan** – The Airport Layout Plan (ALP) was updated as a part of the planning process. The ALP provides the official graphic representation of the Airport's existing and proposed facilities. Once the FAA approves the ALP, projects may be eligible for Federal grant funding.

Many of the features described are depicted in an exhibit on the last page of this Executive Summary.



General Background

The FAA National Plan of Integrated Airport Systems (NPIAS) identifies over 3,300 airports significant to national air transportation, and eligible to receive grants. The 2007-2011 NPIAS shows Eugene Airport as a Non-Hub, Commercial Service, Primary Airport. The basic Airport service provider to the community is Commercial Service – Primary. A Non-Hub commercial service airport accounts for less than 0.05 percent of total U.S. Passenger enplanements, but more than 10,000 annual enplanements. EUG has historically been a Small Hub airport, accounting for between 0.05 and 0.25 percent of total U.S. passenger enplanements, but it qualified as a Non-Hub in 2006. Eugene is the second busiest airport in Oregon, behind Portland International Airport.

EUG's service area includes Lane, Benton, Douglas, and Linn Counties. The service area is a function of geography, and access to EUG and other commercial service airports. EUG's service area extends approximately 60 miles from the Airport, about one hour's drive. The four counties' proximity to Interstate 5 provides relatively easy access to the Airport. EUG is served by four scheduled passenger airlines: Delta Connection, Horizon Air, Allegiant Air, and United Express. Daily scheduled service connects EUG to 10 U.S. cities, by up to 23 departures and 23 arrivals.



Public Participation

Airport officials, community leaders, and the general public all play an important role in the master planning process. A Master Plan Advisory Committee was appointed to assist in the preparation of this Plan, and met regularly throughout the study period to ensure that a comprehensive, community based perspective was incorporated into the project. The Advisory Committee was comprised of the following individuals.

- Linda Ackerman – Airport Advisory Committee
- Dr. Harvey Birdseye – Lane Community College, Aviation Academy
- Ruthann Couch – Air Traffic Control Tower, FAA (retired)
- Steve Dignam – Lane County Planning Commission
- Ellie Dumdi – Former Lane County Commissioner, Junction City Resident
- Phillip Farrington – Peace Health
- Bruce Fisher – FAA Seattle Airports District Office
- Gabe Flock – City of Eugene Planning & Development
- Denny Guehler – Active Bethel Citizens
- Randy Hledik – Eugene Planning Commission
- Keir Miller – Lane County Land Management
- Paul Redhead – Airport Advisory Committee
- Jackie Robertson – Commercial Airline Pilot
- Steve Senderling – Airport Advisory Committee
- Claire Syrett – Airport Advisory Committee
- Andy Vobora – Lane Transit District
- Kurt Yeiter – City of Eugene Engineering/Transportation

Six committee meetings occurred at key points during the Master Plan Update. In the meetings, the Consultant and Airport staff discussed Master Plan Update recommendations and solicited input and questions from the Advisory Committee. Draft Plan documents were delivered to the Committee for review, in advance of meetings for group discussion. Committee meetings were held in the Airport Administration Office on: December 6, 2006; February 28, 2007; August 23, 2007; November 8, 2007; August 13, 2008; and June 22, 2009. Committee meetings lasted approximately one hour, over lunch, and consisted of Airport and Consultant staff presenting and discussing items with the Advisory Committee. Exhibit boards were displayed to support discussion.

Four public informational meetings were held at key points during the Master Plan Update. In the meetings, the Consultant and Airport staff presented the Master Plan Update recommendations, and solicited input and questions from the general public. The public informational meetings were held in the Airport Administration Office on: August 23, 2007; November 8, 2007; August 13, 2008; and June 22, 2009. Exhibit boards were displayed to support discussion.



Projections of Aviation Demand

Existing and Historical Levels of Activity

The components of aviation activity that were evaluated included passenger enplanements, aircraft operations, based aircraft, and air cargo volume. These levels are summarized in the following table.

Summary of Aviation Demand Forecasts				
Year	Passenger Enplanements	Aircraft Operations	Based Aircraft	Air Cargo (lbs)
2006 actual	360,258	92,779	178	2,096,778
2011	412,873	83,796	205	2,538,810
2016	445,593	87,975	209	3,068,410
2026	557,736	102,179	220	4,416,957
Compounded Annual Growth Rate 2006-2026	2.21%	0.52%	1.1%	3.8%

Passenger Enplanements

The Airport has scheduled and unscheduled passenger air service. Airline passenger enplanements (the number of people that board a commercial aircraft) are recorded by service providers and forwarded to the FAA. The number of enplanements is influenced by several elements including socioeconomic factors, aviation trends, and ticket prices. Enplanements at Eugene Airport increased from 317,521 in 1997 to 360,258 in 2006.



Peak Aviation Demand Characteristics

Since EUG, similar to many commercial service airports, must be designed to accommodate peak demand in some categories, projecting future activity levels involves the projection of peak activity levels.

Peak aviation demand numbers are presented in the following table.

Peak Aviation Demand Characteristics						
Peak Factor		Passenger Enplanements	Aircraft Operations			
			Commercial	GA	Military	Total
2006 actual	Annual	360,258	24,777	66,185	1,817	92,779
	Peak Month	37,922	2,478	6,619	182	9,278
	Peak Month Avg. Day	1,223	80	214	6	299
	Peak Hour	306	20	53	1	75
2011	Annual	412,873	17,874	66,393	1,763	83,796
	Peak Month	43,460	1,787	6,639	176	1,862
	Peak Month Avg. Day	1,402	58	214	6	62
	Peak Hour	350	14	54	1	16
2016	Annual	445,593	17,736	69,790	1,763	87,975
	Peak Month	46,905	1,774	6,979	176	1,955
	Peak Month Avg. Day	1,513	57	225	6	65
	Peak Hour	378	14	56	1	16
2026	Annual	557,736	19,920	81,216	1,763	102,179
	Peak Month	58,709	1,992	8,122	176	2,271
	Peak Month Avg. Day	1,894	64	262	6	76
	Peak Hour	473	16	65	1	19



Facility Requirements

Runway 16R/34L

Runway 16R/34L is currently 8,009 feet long, which accommodates aircraft currently operating at EUG and those projected through 2026. The ability to extend the runway to 9,200 feet has been developed as part of previous Master Plans; this ability should continue to be preserved, so that the need can be accommodated once it is justified.

Runway 16L/34R

Runway 16L/34R is currently 6,000 feet long. This 6,000-foot length accommodates the aircraft fleet for which the runway was designed. However, situations may arise resulting in the primary Runway 16R/34L being offline, making Runway 16L/34R the only available runway. It is expected that extending Runway 16L/34R from 6,000 feet to 6,500 feet will allow a greater range of air carrier aircraft to operate on the runway. This will prevent scheduled commercial service from having to divert to other airports, when 16R/34L is not operational.

Taxiway system

EUG benefits from an elaborate taxiway system, including full parallels to both runways, a midfield connector, and several routes to terminal areas. These taxiways provide direct access between the terminal apron and runways. Some taxiways are not meeting current design criteria for the aircraft that are operating at the Airport. Improvements can also be made to make the system more efficient as a whole.

Passenger Terminal Area

The main passenger terminal area is the face of EUG to the local community. It is where the traveling public comes to park their car, pick-up someone, or embark on a flight. The existing terminal building has an area of approximately 89,000 square feet, and has ten aircraft boarding gates. In 2006 the terminal accommodated approximately 360,258 enplanements. Based on the long-term forecasted passenger enplanements of 557,736 annually, 14 gates (four additional) and 100,000 square feet (11,000 additional) are expected to be required.

Other Terminal Areas

The Airport has four terminal areas (in addition to the main passenger terminal area): North Ramp, South Ramp, East General Aviation Ramp (EGAR), and Hollis Lane Aviation Area. These areas are home to airport and aircraft services, aviation-related businesses, and aircraft storage. Together they provide 37 box hangars, 130 T-hangar units, and 144 tie-downs. Facility analysis and requirements determined a need for 20 additional box hangars, 20 additional T-hangar units, and two additional tie-downs. As each of the four terminal areas has available space, the development should be distributed over the areas, as best suited for the particular facility.

New developments are expected to be evaluated for the most suitable site, as they are introduced to the Airport. It is expected that as hangars reach the end of their useful and economic lives, they will be replaced with similar structures in their current locations.



Aircraft Rescue and Fire Fighting (ARFF) Facility

A new ARFF facility (under construction 2010) is needed to replace the existing facility (which has reached the end of its useful functional and economical life), and to meet incident response time requirements to each runway, which cannot be attained from the current facility with existing equipment.

Aircraft Deicing Facility Area

The aircraft deicing (and anti-icing) process involves the application of a liquid via pressurized spray. The majority of deicing agent not adhering to the aircraft requires containment, collection, storage, and disposal or treatment. The introduction of one central deicing ramp eases the application and handling of the deicing agent, and reduces the number of ground support vehicles near the passenger terminal relieving apron congestion during peak time periods. An additional benefit to one central location is that the new facility could also serve as an aircraft washing location, further reducing activity and congestion within the terminal area.

Miscellaneous Airside Facility Requirements

The existing aircraft fuel storage facility (fuel farm) is located along the entrance road to the North Ramp area, Lockheed Drive, and consists of five above-ground fuel storage tanks. There is room for only one additional fuel tank in the existing facility. The fuel farm must be accessible to tanker trucks delivering fuel, and on-airport vehicles ferrying fuel to airfield ramps and aircraft. The location of the fuel farm requires tanker trucks to travel the same roads as other traffic to reach the passenger terminal. Fuel delivery and transfer between storage tanks can interfere with tenants and the public accessing the North Ramp. Because of this, it is beneficial to relocate the fuel farm away from the passenger terminal area, so that tanker trucks and fueling operations are removed from high concentrations of non-airfield traffic.

Automobile Parking

The Master Plan Update identified the following automobile parking needs: increase public automobile parking stalls from 1,276 to 2,310 (additional 1,034 stalls); increase rental car ready/return parking stalls from 144 to 245 (additional 101 stalls); and increase rental car service/storage stalls from 116 to 280 (additional 164 stalls). An increase is also expected for the overflow lot, from 585 to 872 (additional 287 stalls). Additional parking needs exist throughout the Airport to support aviation related businesses, other terminal areas, and on-airport FAA offices.

Land Acquisition

The FAA recommends that an airport own or control land that associated with airport design surfaces. There are two areas at the northern end of the Airport property that should be acquired. These areas are within the Runway Protection Zones (RPZs) for Runway Ends 16R and 16L. The RPZ is a design surface at the end of the runway that is required to enhance the protection of people and property on the ground and departing/arriving aircraft.



Improvement Recommendations

Development Alternatives

The Master Plan Update process included an analysis of alternative methods to accomplish the recommended airfield improvements. Alternatives were developed for each of the proposed major projects, and these were evaluated to arrive at the preferred alternative for each element, and the Airport as a whole. The alternatives evaluated included consideration of different locations on the airfield for each facility, as well as different geometric layouts within the selected locations. The following are the recommended improvements to be considered as needed.

Runway 16R/34L and Runway 16L/34R

The Master Planning process recommends continuing to preserve the ability to extend the Runway 16R/34L to 9,200 feet, and Runway 16L/34R to 6,500 feet. These extensions will allow a greater variety of air carrier aircraft to operate on these runways, and prevent scheduled commercial service from having to and divert to other airports when one runway is temporarily not in operation.

Taxiway system

Introduction of acute angle connectors north of Taxiway A4 and north of Taxiway A5 may help aircraft arriving on Runway End 34L to quickly exit to Taxiway A. A connection north of Taxiway A5 would bridge the runway with Taxiway P. These improvements would facilitate access between the primary runway and the Hollis Lane aviation area.

Modification of the existing right angle connector B2, which bridges Runway 16L/34R with Taxiways C and B, to two acute angle taxiways (one from Runway End 16L, one from Runway End 34R) connecting to Taxiway C may provide better flow. This configuration is similar to the existing intersection of Taxiways C, M, and P. Or, a new connector south of connector B2, to connect Runway 16L/34R to Taxiways B and M may provide a similar pattern.

Other taxiway connections, besides acute angle, may also improve ground circulation. For example, the introduction of a taxilane connecting the North Ramp to the EGAR would prevent aircraft from having to enter ATCT-controlled movement areas, thereby reducing congestion, and freeing ATCT for other tasks.

Passenger Terminal Area

The main passenger terminal area should plan for additional gates through expanding existing Concourse B to the southwest, and adding a new Concourse "C" to the northeast. This will extend the concourse structure onto area currently used for ramp and terminal employee automobile parking, and into the old ATCT and office building area. This option will also require the expansion of the terminal ramp to serve the new gates. By introducing a new concourse, passengers are distributed over a greater area; more space is provided for business development within the terminal.



Other Terminal Areas

North Ramp - The North Ramp has space for two additional box hangars in between the existing hangars. As the proposed ARFF facility is expected to be developed in this area, there is not room for additional T-hangars. A taxilane connecting the North Ramp to the EGAR is being considered. This taxilane would likely displace aircraft tie-downs, which could be relocated to the EGAR. Additional area is available for automobile parking, and the expansion of aviation related businesses.

South Ramp - There is space for one additional box hangar in between the existing hangars, but there is not room for additional T-hangars. Additional box hangars could be placed to the south of the existing T-hangars, but would occupy space being reserved and intended for commercial development.

East Ramp - The EGAR has room for 16 additional box hangars and 20 additional T-hangar units. Many of the sites have been prepared with access taxilanes and utilities. There is also room to expand the apron to the south. The EGAR is home to the only self-fueling facility for aircraft at EUG. This is a well-utilized facility, and space for additional fueling activities and storage should be preserved. EGAR currently has no fixed base operator (FBO – term for a pilot/aircraft service provider); however space is available and should continue to be reserved for FBO hangars and offices.

Coordinating the relocation of the Oregon Air & Space Museum to the EGAR area with the future alignment of Douglas Drive may increase the museum's attendance, and increase public awareness as automobile traffic enters the airfield and passes the building. These properties provide good opportunities for the Airport to provide a home for facilities which serve the community, and to make best use of its non-aviation property by incorporating airport-compatible development.

Hollis Lane Aviation Area - The Hollis Lane Aviation Area has room for 14 additional box hangars. Although there is space for T-hangars and aprons, the Hollis Lane Aviation Area is expected to be developed with corporate hangars, each with a small apron adjoining the existing taxilane.

The existing Hollis Lane Aviation Area taxilane that accesses the hangar sites should be extended to connect to Taxiway A. Long-term, the existing taxilane traveling north from Taxiway C, that ends after connecting to the Hollis taxilane, should be extended to connect to Taxiway A. These connections provide aircraft in the Hollis area efficient access to primary Runway 16R/34L. A taxiway extension connecting Taxiway C and Taxiway A, or an ARFF vehicle access lane in the same location should also be considered.

Many configurations for development can be accommodated depending on the requirements and preferences of the proposed improvement.



Aircraft Rescue and Fire Fighting (ARFF) Facility

The new ARFF facility (under construction 2010) site is the area south of Taxiway C, near the northern end of the north terminal area. This location supports the required response time to the airfield.

Aircraft Deicing Facility Area

There are two potential locations for the deicing facility. One location is southwest of the main passenger terminal building, on the south ramp. The other location is northwest of the main passenger terminal, at the intersection of the terminal apron with Taxiway A. Both sites can likely accommodate Boeing 757-size aircraft for deicing, and both can also function as an aircraft washing area. As deicing generally occurs after passenger loading and before take-off, locating the deicing facility along the way to primary Runway 16R/34L should prevent most aircraft from having to deviate significantly from the main taxiway route.

Miscellaneous Airside Facility Requirements

The fuel farm would be better located in the south airfield area, which would allow fuel delivery vehicles to exit Douglas Drive before entering the Airport circulation road. This will allow them to operate in an area less concentrated with the traveling public. This new fuel farm will accommodate the existing fuel tanks, and provide space for expansion to accommodate the forecasted demand. This location is also closer to on-airport businesses that provides fueling, and closer to parking for aircraft fueling vehicles.

Automobile Parking

As passenger enplanements and aircraft operations at EUG are expected to increase, so is the automobile parking. A single development scenario for expansion of automobile parking near the main passenger terminal is presented. This is a refinement of previous plans to expand public and rental car auto parking in phases. The rental car storage and service lot should be relocated to the south near the air cargo operations, freeing up additional space for public parking within the existing main parking lot. Additional spaces can be added to the existing overflow lot as demand increases.

Aviation related businesses and other terminal areas throughout the Airport have potential to increase the number of parking spaces as demand increases. The FAA offices located at EUG also have space for additional parking to support their operations.

Land Acquisition

As properties around the Airport become available, consideration should be given to land acquisition. The RPZs for Runway Ends 16R and 16L extend onto parcels not owned by the Airport. Parcels in the RPZ, and other parcels near runway ends, are candidates for acquisition, as Airport control of these parcels allows for protection of aircraft operations, and for people and property on the ground. Acquisition of parcels within the RPZ has historically been an FAA priority.

