



Oregon
Theodore R. Kobayashi, Governor

Department of Land Conservation and Development
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www.lcd.state.or.us



NOTICE OF ADOPTED AMENDMENT

10/14/2010

TO: Subscribers to Notice of Adopted Plan
or Land Use Regulation Amendments

FROM: Plan Amendment Program Specialist

SUBJECT: City of Eugene/Springfield Plan Amendment
DLCD File Number 001-10

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: Wednesday, October 27, 2010

This amendment was submitted to DLCD for review prior to adoption pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

***NOTE:** The Acknowledgment or Appeal Deadline is based upon the date the decision was mailed by local government. A decision may have been mailed to you on a different date than it was mailed to DLCD. As a result, your appeal deadline may be earlier than the above date specified. NO LUBA Notification to the jurisdiction of an appeal by the deadline, this Plan Amendment is acknowledged.

Cc: Gabriel Flock, City of Eugene/Springfield
Gloria Gardiner, DLCD Urban Planning Specialist
Ed Moore, DLCD Regional Representative
Bill Holmstrom, DLCD Transportation Planner

<paa> YA



FROM **2**

DLCD

Notice of Adoption

This Form 2 must be mailed to DLCD within **5-Working Days after the Final Ordinance is signed** by the public Official Designated by the jurisdiction and all other requirements of ORS 197.615 and OAR 660-018-000

In person electronic mailed

DATE STAMP

DEPT OF

OCT 7 2010

LAND CONSERVATION AND DEVELOPMENT

Office Use Only

Jurisdiction: City of Eugene and Lane County Local file number: RA 10-2 and PA 10-5284
 Date of Adoption: 9/28/10 Date Mailed: 10/6/10

Was a Notice of Proposed Amendment (Form 1) mailed to DLCD? Yes No Date: 4/13/10

Comprehensive Plan Text Amendment Comprehensive Plan Map Amendment
 Land Use Regulation Amendment Zoning Map Amendment
 New Land Use Regulation Other: Comprehensive Refinement Plan Amendment

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

This updated Eugene Airport Master Plan replaces earlier versions as a refinement to the Eugene-Springfield Metropolitan Area General Plan (Metro Plan). It is functionally specific to the provision of commercial aviation, general aviation, and airport-related commercial and industrial services associated with the airport through the planning horizon of 2026. Adoption of this comprehensive refinement plan update does not include any amendments to the Metro Plan or other locally adopted plans; no land use designation changes or zone changes were adopted.

Does the Adoption differ from proposal? No, no explanation is necessary

Plan Map Changed from: NA to: NA
 Zone Map Changed from: NA to: NA

Location: NW of Eugene; near intersection of Airport Rd. and Greenhill Rd. Acres Involved:

Specify Density: Previous: NA New: NA

Applicable statewide planning goals:

1 **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19**

Was an Exception Adopted? YES NO

Did DLCD receive a Notice of Proposed Amendment...
 45-days prior to first evidentiary hearing? Yes No
 If no, do the statewide planning goals apply? Yes No
 If no, did Emergency Circumstances require immediate adoption? Yes No

DLCD file No. 001-10 (18238) [16358]

Please list all affected State or Federal Agencies, Local Governments or Special Districts:

Federal Aviation Administration (FAA), Oregon Department of Transportation (ODOT), Oregon Department of Aviation (ODA), Lane County, City of Eugene

Local Contact: Gabriel Flock	Phone: (541) 682-5697	Extension:
Address: 99 West 10 th Avenue	Fax Number: 541-682-5572	
City: Eugene	Zip: 97401	E-mail Address: gabriel.flock@ci.eugene.or.us

ADOPTION SUBMITTAL REQUIREMENTS

This Form 2 must be received by DLCD no later than 5 days after the ordinance has been signed by the public official designated by the jurisdiction to sign the approved ordinance(s)
per ORS 197.615 and OAR Chapter 660, Division 18

1. This Form 2 must be submitted by local jurisdictions only (not by applicant).
2. When submitting, please print this Form 2 on light green paper if available.
3. Send this Form 2 and One (1) Complete Paper Copy and One (1) Electronic Digital CD (documents and maps) of the Adopted Amendment to the address in number 6:
4. **Electronic Submittals: Form 2 – Notice of Adoption will not be accepted via email or any electronic or digital format at this time.**
5. The Adopted Materials must include the final decision signed by the official designated by the jurisdiction. The Final Decision must include approved signed ordinance(s), finding(s), exhibit(s), and any map(s).
6. **DLCD Notice of Adoption must be submitted in One (1) Complete Paper Copy and One (1) Electronic Digital CD via United States Postal Service, Common Carrier or Hand Carried to the DLCD Salem Office and stamped with the incoming date stamp.** (for submittal instructions, also see # 5)] MAIL the PAPER COPY and CD of the Adopted Amendment to:

ATTENTION: PLAN AMENDMENT SPECIALIST
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT
635 CAPITOL STREET NE, SUITE 150
SALEM, OREGON 97301-2540

7. Submittal of this Notice of Adoption must include the signed ordinance(s), finding(s), exhibit(s) and any other supplementary information (see ORS 197.615).
8. Deadline to appeals to LUBA is calculated **twenty-one (21) days** from the receipt (postmark date) of adoption (see ORS 197.830 to 197.845).
9. In addition to sending the Form 2 - Notice of Adoption to DLCD, please notify persons who participated in the local hearing and requested notice of the final decision at the same time the adoption packet is mailed to DLCD (see ORS 197.615).
10. **Need More Copies?** You can now access these forms online at <http://www.lcd.state.or.us/>. You may also call the DLCD Office at (503) 373-0050; or Fax your request to: (503) 378-5518.

Updated December 22, 2009

ORDINANCE NO. 20463

AN ORDINANCE ADOPTING AN UPDATED EUGENE AIRPORT MASTER PLAN, A REFINEMENT PLAN OF THE EUGENE-SPRINGFIELD METROPOLITAN AREA GENERAL PLAN (METRO PLAN); ADOPTING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

THE CITY OF EUGENE DOES ORDAIN AS FOLLOWS:

Section 1. The Eugene Airport Master Plan set forth in Exhibit A attached hereto and incorporated herein, is hereby adopted to supersede and replace the provisions of the Eugene Airport Master Plan adopted as a refinement plan to the Transportation Element of the Metro Plan by Ordinance No. 19730.

Section 2. Although not part of this Ordinance, the City Council adopts the findings set forth in the attached Exhibit B in support of this action.

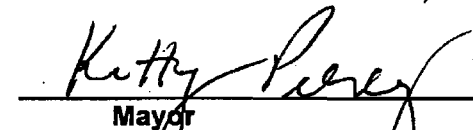
Section 3. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision and such holding shall not affect the validity of the remaining portions hereof.

Section 4. Notwithstanding the provisions of the Eugene Charter of 2002, this Ordinance shall not become effective until the Lane County Board of Commissioners has taken action identical to the action taken by the City of Eugene in Section 1 of this ordinance.

Passed by the City Council this
27th day of September, 2010

Approved by the Mayor this
28th day of September, 2010


Deputy City Recorder


Mayor

CERTIFICATE OF MAILING

I hereby certify that I served the DLCD Notice of Adoption for a **comprehensive refinement plan update** request for **Eugene Airport Master Plan (RA 10-2 & PA10-5284)** by mailing a true copy to the Department of Land Conservation and Development. A copy of these materials may be reviewed online at <http://www.eugene-or.gov/luappstracking>.

106-10
Dated:


Amy Janisch

Exhibit A

Eugene Airport Master Plan Update



Prepared for
City of Eugene, Oregon

Prepared by

**MEAD
& HUNT**

in association with:

3DiWest
Ford and Associates
Evans Elder & Brown
Satre Associates

February 2010

Eugene Airport Master Plan Update



Prepared for
City of Eugene, Oregon

Prepared by
**MEAD
&
HUNT**

In association with:

3DiWest
Ford and Associates
Evans Elder & Brown
Satre Associates

February 2010

The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration (FAA) as provided under Section 505 of the Airport and Airway Improvement Act as amended. The contents of this document do not necessarily reflect the official views of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted herein, nor does it indicate that the proposed development is environmentally acceptable in accordance with applicable public laws.

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A Glossary of Terms
B Supplemental Financial Analysis



Foreword

The Federal Aviation Administration (FAA) developed the airport master planning process to assist the nation's airports in developing expansion plans to meet future aviation demand. The Master Plan Update for Eugene Airport (Eugene, Oregon) serves as a development guide for the Airport's short-term (1 to 5 years), intermediate-term (5 to 10 years) needs and also addresses the needs of the Airport through the long term (10 to 20 years). The Master Plan Update uses a base year of 2006 for data and analytical purposes, with a planning horizon extending through to the year 2026. The short-, intermediate-, and long-range time frames referred to in this Master Plan Update provide a framework to ensure that Eugene Airport's needs are identified and can be met in the future.

This Master Plan Update follows the processes set forth in Federal Aviation Administration (FAA) Advisory Circular 150-5070-6B, *Airport Master Plans*, which provides a flexible framework to accomplish goals to improve aviation.

Plan Goals and Objectives

The previous two master planning efforts (in 1990 and 2000) placed heavy emphasis on realignment of the overall airfield for long-term capacity improvements, including airfield and landside capacity. The 1990 Master Plan developed the initial concept for re-configuring the airfield into a parallel runway design, while the 2000 Master Plan Update focused heavily on the details of phasing and implementing that realignment. Also significant to the airfield realignment effort was the development of a new area to benefit general aviation.

Overall, the 2006 Master Plan Update heavily focuses on refinement of the landside components of the Airport. It invests in research and analysis of ways to make the airport more self-reliant in the long-term, through the enhancement of revenues and analysis of potential future financial scenarios (this makes the plan a more strategic one). These goals are accomplished by providing recommendations that are feasible to implement and by providing for ample public participation. The following are areas of emphasis in this Master Plan Update:

Airport functional areas:

- Planning for improvement of passenger baggage security screening
- Recommend improvements to east general aviation area (hangars, GA terminal/FBO facilities, Oregon Air & Space Museum)
- Aircraft rescue and firefighting facility (location and functional issues)
- Identify rotorcraft movement and parking areas
- Develop redevelopment idea for old airport traffic control tower and surrounding area
- Evaluation of enhanced access to FAA air traffic control tower

Business Plan:

- Develop capital improvement program
- Research opportunities for revenue enhancement, including compatible airport property development



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- Guide local discussions on airport governance options
- Prepare financial feasibility under alternate financial scenarios

Land Use Planning:

- Research additional airport land needed to protect approach and lateral areas
- Recommend zoning or land use designation changes to protect airport from encroachment of incompatible development
- Develop new noise exposure contours
- Review of existing wetland data, and planning related to potential impacts

Project coordination/participation:

- Establish planning advisory committee
- Hold public participation workshops

Airport Layout Plan:

- Aggregate the City's existing utility information and develop future utility improvement plan
- Update ALP with recommended capital improvement plan
- Provide new aerial photography

Plan Scope and Documentation

While this Airport Master Plan Update is tailored to meet Eugene Airport's specific needs, it also adheres to guidelines established by the FAA. Important FAA master planning objectives incorporated within this Airport Master Plan Update include:

- Provide an effective graphic representation of the airport's existing and recommended ultimate development and anticipated functional areas.
- Assess the feasibility of the recommended development action through a prioritized and phased schedule of recommended improvements.
- Provide concise and descriptive documentation that can be clearly understood by the community and agencies charged with approving, promoting, funding, and implementing the Airport improvement program. To that end, draft master plan documentation will be developed for review by the Master Plan Update Advisory Committee. Input from the Advisory Committee will be incorporated into the final plan documents.

Relationship to Other Plans

In meeting the Plan goals, objectives and scope outlined above, this Eugene Airport Master Plan Update will ultimately replace the 2000 Eugene Airport Master Plan Update which replaced the 1990 Eugene Airport Master Plan, and any earlier aviation plans, such as the Mahlon Sweet Field Master Plan.

This Eugene Airport Master Plan Update will be reviewed as a refinement to the 2004 Eugene-Springfield Metropolitan Area General Plan (Metro Plan) that is functionally specific to the provision of



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commercial aviation, general aviation, and airport-related commercial and industrial services associated with the Eugene Airport. As a refinement plan, the Eugene Airport Master Plan Update should be consistent with the Metro Plan's policies and land use designations, and compatible with other functional refinements to the Metro Plan, such as the Eugene-Springfield Metropolitan Area Transportation Plan (TransPlan).

Existing Plans

A review of existing documents relating to the airport and surrounding area will be made including: existing airport layout plan and airspace plan, state aviation system plan, community plans and recent air service research.

Master Plan Update Advisory Committee

The Advisory Committee includes the following members/representations:

Steve Senderling – Chair, Airport Advisory Committee
Paul Redhead – Vice Chair, Airport Advisory Committee
Claire Syrett – Member, Airport Advisory Committee
Mike Coontz – Previous Airport Operations Manager
Jackie Robertson – Commercial Airline Pilot
Phillip Farrington – Peace Health
Ruthann Couch – Air Traffic Manager, FAA (retired)
Suzanne Lee-Pang – Community Planner, FAA
Dr. Harvey Birdseye – Director, Lane Community College, Aviation Academy
Andy Vobora – Lane Transit District
Will Mueller – Lane Transit District
Steve Hopkins – Planner, Lane County Land Management Department
Gabe Flock – City of Eugene Planning and Development Department
Randy Hledik – Eugene Planning Commission
Steve Dignam – Lane County Planning Commission
Linda Ackerman – Member, Airport Advisory Committee
Ellie Dumdi – Former Lane County Commissioner, Junction City Resident
Denny Guehler – Member, Active Bethel Citizens



Background and Inventory

This chapter provides background information on the Eugene Airport (EUG), and the context in which it functions. This information is presented in the following sections.

- Introduction
- Facilities Inventory
- Airspace and Air Traffic Control
- Socioeconomic Trends
- Aviation Activity



This information provides base data to be used in subsequent analyses. This chapter will be supplemented by additional data gathered during the course of the study.

1. Introduction**1.1 History**

Aviation has a strong history in the Eugene area. The Eugene Air Park, the City's first municipal airport, was established in 1919. This airport was located on Chambers Street and was the first municipally-owned airport on the West Coast. As activity began to increase at the Eugene Air Park, the need for a new, more modern airport was championed by a local businessman, Mr. Mahlon Sweet. Mahlon Sweet Field was dedicated on May 1, 1943, after Mr. Sweet convinced city officials that improved airport facilities were necessary to support the community's aviation needs. In 1943, commercial service at Mahlon Sweet Field was first initiated by United Airlines using DC-3 aircraft. The Eugene Air Park was closed thirteen years later in 1956, and the area's general aviation activity was transferred to Mahlon Sweet Field. Both commercial service and general aviation activity have since been supported by Eugene Airport at Mahlon Sweet Field, and EUG has become an invaluable asset to the Eugene/Springfield area.

In 1964, a new terminal building was built at EUG, and the airfield was upgraded to accommodate jet aircraft. In response to rapidly increasing activity levels that occurred in the early 1980's, an airport improvement program was initiated, including construction of an expanded modern terminal (known as the Mahlon Sweet Terminal), a new airport traffic control tower, the construction of a new automobile parking facility, and extensive landscaping of Airport grounds. This improvement program enhanced the safety, capacity, efficiency, and appearance of the Airport, and made it one of the finest airport facilities in the State of Oregon.

Over the past decade, many more improvements were made at the Airport, also enhancing safety and operational efficiency. This includes a new 6,000 foot long parallel air carrier runway, Runway 16L/34R (with a Category I instrument landing system), upgrades of primary Runway 16R/34L to a



Category III instrument landing system, roadway realignment to protect the new runway protection zone, and several new maintenance facilities.

1.2 Location

Eugene Airport is located approximately 10 miles northwest of Eugene's central/traditional business district. Eugene is located in the Willamette River Valley, in central Lane County, in west central Oregon. Eugene and Lane County are centered on the Interstate 5 corridor, which extends north-south through Oregon, between the Cascade Mountains and Pacific Ocean. Most of Oregon's population resides within the Interstate 5 corridor. A location map is presented in **Exhibit 1-1**.

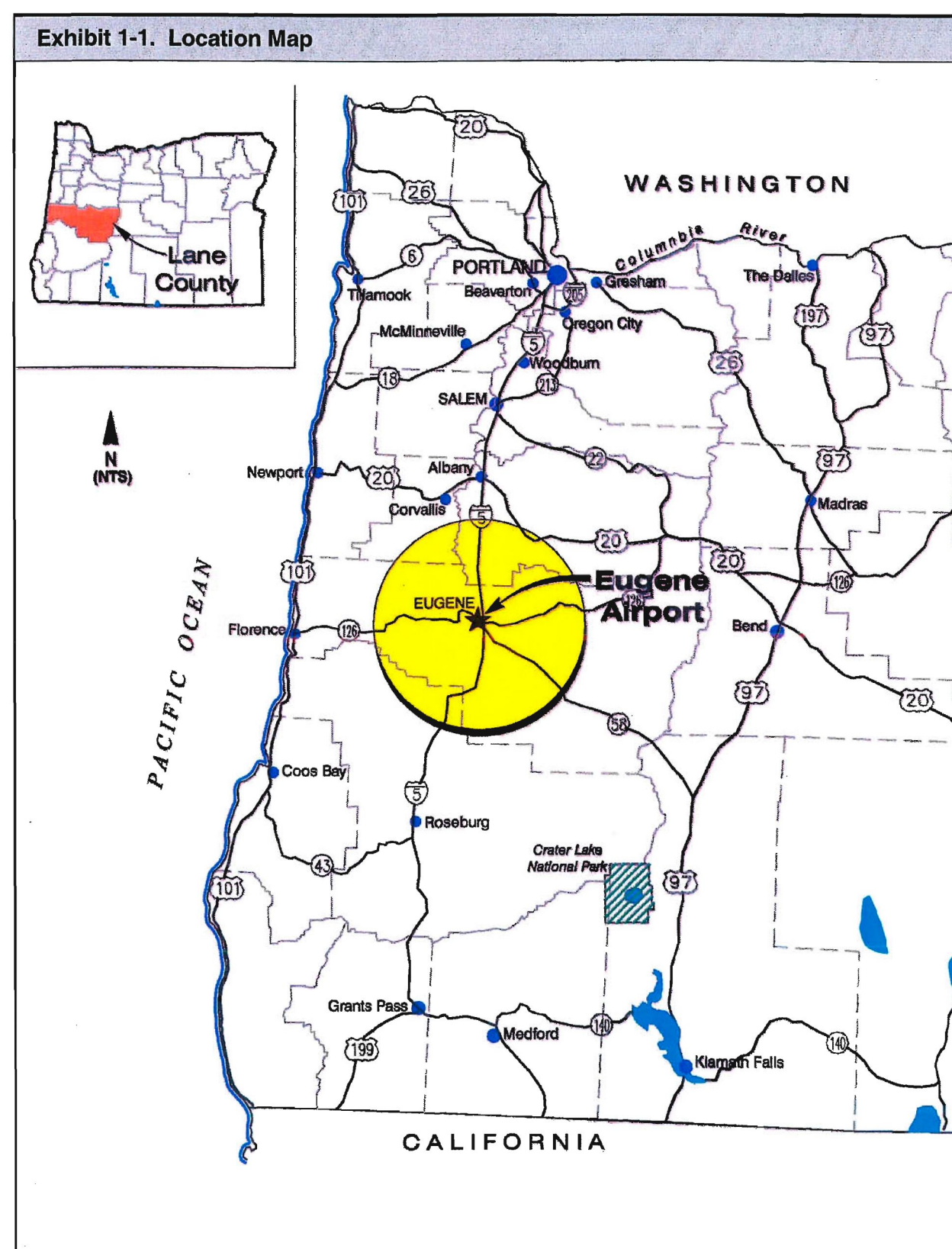
Eugene is located at the intersection of several major roadways, including Interstate 5, Interstate Spur 105, and State Highways 126, 99, and 58. State Highway 126 is the main east-west artery for this region. State Highway 99 extends northwest from Eugene. State Highway 58 enters Lane County southeast of Eugene and extends to the City before joining Interstate 5. Access to the Airport is via Airport Road, from State Highway 99, from Beltline Highway and I-105, from I-5. Another route to the Airport, from South Eugene/Florence/etc. is Route 126/West 11th to Greenhill Road, then to the Airport.

1.3 Climate

Weather conditions, including temperature, wind and cloud coverage, are important considerations in airport operations and development. Temperature is considered in determining runway length requirements. Wind speed and direction are taken into account in determining runway orientation. Visibility, limited by cloud coverage, is considered in determining the need for navigational aids.

EUG's climate is characteristic of the Pacific Northwest. The rainy season typically begins in September and extends through May, and annual precipitation (predominantly rain, sometimes snow) averages 51 inches. November is the wettest month (8.4 inches precipitation is average), and July the driest (0.6 inches precipitation on average). August has the highest average mean maximum temperature, 82 degrees Fahrenheit, and January has the lowest average mean minimum temperature, 33 degrees Fahrenheit. The coldest months exceed 80 percent average cloud cover; warmer months have less than 40 percent average cloud cover.





1.4 Airport Role

The Federal Aviation Administration 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 EUG 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 in 2006 it qualifies as a Non-Hub. 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. It extends to an approximate 60 miles radius from the Airport, a drive time of about one hour. The four counties proximity to Interstate 5 provides relatively easy access to the Airport.

EUG is served by four airlines: US Airways Express, Delta Connection, Horizon Air and United Express. Daily scheduled service typically includes 27 departures and 28 arrivals. Commercial service aircraft include the Canadair Regional Jet -200 (50 seats), -700 (70-75 seats) and -900 (90 seats); Dash 8 Q200 (37-39 seats) and Q400 (70-78 seats) turboprops; and Embraer 120 (30 seats) turboprops. **Table 1-1** lists EUG's top ten destinations based on Origin & Destination (O&D) passenger traffic. Total O&D passenger numbers are equal to roughly double the passenger enplanement numbers.

Rank	Destination	O&D Passengers
1	San Francisco	79,390
2	Los Angeles	45,220
3	Phoenix	34,960
4	Seattle	32,060
5	Denver	26,900
6	Las Vegas	24,940
7	Salt Lake City	24,940
8	San Diego	23,340
9	Orange County	17,080
10	Chicago	14,030

Source: Data Base Products CY2005

Following the events of September 11, 2001, airline passenger traffic dropped dramatically nationwide. As passenger traffic counts fell, commercial air carriers responded by reducing ticket prices and cutting capacity, the number of seats in the market. During this period EUG, and most of the smaller markets in the U.S., experienced significant reductions in airline service. Larger jet aircraft were replaced with smaller regional jets and or turboprops and in some markets flight schedules (frequencies) were cut (see **Table 1-2**), EUG was hit especially hard by these

service reductions. The Airport's capacity was reduced by one-third, airlines increased ticket prices and, not surprising, passenger traffic decreased. Beginning in 2004, the Airport's airlines began adding back capacity and passenger traffic climbed.



During this period, airlines not only reduced service to smaller communities like Eugene, but also transferred the bulk of their operations at these airports to regional airlines. Today all of EUG's commercial air service is provided by regional carriers that are marketed via code-share agreements with their larger airline partners, United Airlines, Delta Air Lines, US Airways, and Alaska Airlines. The bulk of EUG's airline passenger traffic is produced by regional carriers with non-scheduled charter carriers generating the balance.

Year	Scheduled Airline Seats	Total O&D Enplanements
2000	692,523	659,280
2001	644,297	633,880
2002	437,294	545,130
2003	434,681	531,490
2004	516,672	626,480
2005	497,111	642,470

Source: Data Base Products

Cargo is regularly transported on aircraft at EUG, and military aircraft frequent the Airport environment. EUG supports the general aviation (GA) community, which includes aircraft not used for commercial passenger and air cargo service. In 2006 there were 178 GA aircraft based at EUG, including many operated by local corporations that support business throughout Oregon and across the nation. Recreational and hobby aircraft are also an important part of the GA community at EUG.

Aircraft at EUG are served by one full-service fixed base operator – Flightcraft Services; two limited service fixed base operators – Friendly Air Service and Lawrence Air Service; and one helicopter fixed base operator, Heli-Trade. Fixed base operators (FBOs) provide fueling, ground handling, and maintenance services to commercial and general aviation aircraft. Flight training is offered by the FBO's, and by Lane Community College's *Lane Aviation Academy*.

EUG is home to public service facilities that enhance the safety of the community. Sheriff patrol, fire fighting, emergency medical, and search and rescue are public safety benefits provided to area residents by the Airport.

EUG is important to the area's infrastructure; is vital to attracting and sustaining local economic development; and is essential to providing air travel for the region.

1.5 Airport Management and Financial Information

The City of Eugene is owner and operator of the Eugene Airport. EUG is overseen by an airport manager and staff, directed by the Eugene City Council, and advised by the Airport Advisory Committee. Land use around the airport is controlled by the City of Eugene and Lane County.

The Airport Manager oversees the day to day operations of the Airport, as well as budgeting, planning, engineering, and construction. The Eugene Airport Advisory Committee develops recommendations by providing an ongoing citizen perspective and review of airport capital improvement projects, environmental issues, airport finances, air service development and airport policy.



There are different sources of airport revenue. The FAA provides the majority of capital improvement funding through the Airport Improvement Program (AIP), which provides grants to public municipalities – and, in some cases to private owners and entities – for the planning and development of public-use airports. AIP grants are generally 95 percent Federal, with a 5 percent local match, and provide funds for projects for infrastructure improvement (such as runways and taxiways), noise mitigation, land acquisition, navigational aids, safety and security. EUG receives AIP entitlement funds based on a formula set by law, and can also apply for discretionary funds through this program.

EUG uses general obligation bonds, revenue bonds, state lottery loans, passenger facility charges. Operating revenues include automobile parking fees, aircraft landing fees, concession agreements, and lease payments from airport tenants. Income is used to pay capital improvements, operating expenses, and for AIP local match. Major airport improvement expenses include large capital projects, such as runway construction and rehabilitation, and terminal expansion and remodeling. Major operating expenses include airfield and terminal maintenance, aircraft rescue and fire fighting, security, and administrative costs. These items will be documented and presented as part of the financial feasibility element of this Master Plan Update.

2. Facilities Inventory

2.1 Land

EUG is located on approximately 2,340 acres, owned in fee simple by the City of Eugene. The majority of the land is used for pavements, facilities, and structures, and for the FAA-specified separations, setbacks, and clearances established for the protection of these airfield items. Land is also used for roadways, farming, livestock, and drainage. Increased concerns about airport-compatible land use may require acquisition or control of additional property.

2.2 Airport Facilities

Airport facilities included in this inventory discussion include: runways, taxiways, aircraft parking ramps, storage hangars, Fixed Base Operators, snow removal/maintenance, aircraft rescue and firefighting, fueling, and navigational aids. **Exhibit 1-2** shows existing airport facilities.



Runways

Runway 16R-34L is the primary runway, and is 8,009 feet long and 150 feet wide. It is designed to accommodate aircraft with wingspan up to 170 feet and approach speed up to 165 knots, meeting FAA design criteria for Airport Reference Code (ARC) D-IV aircraft. This category includes aircraft as large as Boeing 767, Boeing 787, and Airbus A300. Runway 16R-34L has grooved asphalt surface, and weight bearing capacity of 75,000 lbs. single wheel, 200,000 lbs. dual wheel, and 400,000 lbs dual tandem.

Runway 16L-34R is the secondary runway, and is 6,000 feet long and 150 feet wide. It is parallel to primary Runway 16R-34L, separated by 4,300 feet between runway centerlines. Runway 16L-34R is designed to accommodate the same aircraft as Runway 16R-34L. Runway 16L-34R was a recommendation of the 2000 Master Plan Update, and the runway became operational in 2006, as former crosswind Runway 3-21 was decommissioned and converted to Taxiway P. Runway 16L-34R has a grooved asphalt surface, and weight bearing capacity of 105,000 lbs. single wheel, 175,000 lbs. dual wheel, and 240,000 lbs. dual tandem.

Runway 16L-34R is intended to serve general aviation aircraft, but will also serve commercial service aircraft when Runway 16R-34L is offline for improvement or maintenance, or when demand necessitates.

Two parallel runways allow for simultaneous operations on both runways, without intersecting flight patterns. During peak operation periods, aircraft are separated by approach speed, so that larger, faster aircraft use one runway and smaller, slower aircraft another. Wind coverage of the parallel runways is shown in **Table 1-3**.

Crosswind Component	<10.5 Knots		<13 Knots		<16 Knots	
	All Weather	IFR	All Weather	IFR	All Weather	IFR
Runway 16R-34L/16L-34R	98.11%	99.72%	99.17%	99.82%	99.89%	99.93%

Source: National Oceanic and Atmospheric Administration National Climatic Data Center 1993-2002

Taxiways

The airport has an extensive taxiway system, including full parallel taxiways serving each runway. Taxiway A has an offset separation of 500 feet from Runway 16R-34L, and has 9 connecting taxiways (A1-A9). Taxiway B has an offset separation of 400 feet from Runway 16L-34R, and has 4 connecting taxiways (B1-B4). Taxiways C through P provide aircraft access across the airfield. **Table 1-4** summarizes EUG's taxiways.



Taxiway Designation	Width (ft)	Orientation	Description
A	75	N-S	Parallel to Runway 16R-34L
B	75	N-S	Parallel to Runway 16L-34R
C	75	E-W	Connects parallel runways
D	75	NW-SE	Connects Taxiway A to terminal ramp
E	75	E-W	Connects Taxiway A to terminal ramp
F	75	NW-SE	Connects Taxiway A to terminal ramp
G	75	SW-NE	Connects Taxiway A to terminal ramp
H	75	E-W	Connects Taxiway A to south GA ramp
K	50	SW-NE	Connects north GA ramp to main ramp (weight)
L	35	E-W	Connects Taxiway A to cargo area
M	75	E-W	Connects Taxiway B to north and east GA areas
N	50	N-S	Connects Taxiway M to east GA ramp
P	75	SW-NE	Connects Taxiways M and C to Taxiway A
R	75	E-W	Connects Taxiway B to east GA ramp

Note: There is no Taxiway I or O
Source: Airport Layout Plan

Aircraft Parking Ramps

There are five ramp areas: the terminal ramp, three general aviation ramps, and a cargo ramp. The terminal ramp area is on the airfield side of the passenger terminal, and is used by commercial service aircraft during loading, unloading, servicing, and overnight storage. The approximate 25,000 square yards (sy) capacity of this ramp is maximized by the pier design of the terminal building.

Three general aviation ramps (north, south, and east) are used by general aviation and charter aircraft for overnight, temporary, and long-term aircraft storage and service. The north ramp contains a stress pad to accommodate larger aircraft without damage to the ramp, as charter aircraft activity can bring larger aircraft, such as Boeing 737 and 757. The south ramp also has a stress pad to accommodate similar larger aircraft. The east ramp serves aircraft utilizing Runway 16L-34R, and will serve future east side development. The ramps contain tie-downs for aircraft storage.

The cargo apron provides the transfer of shipments between aircraft and truck. The cargo apron is located southeast of Runway End 34L, near the primary runway, and away from FBO, passenger, and general aviation activity. In 2007, a project began to improve the cargo apron from 13,067sy, accommodating 7 (smaller) aircraft, to 26,133sy, accommodating 7 (larger) aircraft. This improvement will add a new facility, consolidating cargo processing from locations across the airfield to a centralized site. This facility and ramp will also accommodate charter aircraft and passengers.



Pavement Management

Pavement management is an ongoing process to maintain conditions and utility of airfield pavements. Exhibit 1-3 shows the 2005 pavement condition.

Aircraft Storage Hangars

Most aircraft based at EUG are stored in hangars, located between the runways, north, south, and east of the terminal building. These hangars are generally not owned by the airport, but rather by individuals or entities. EUG has T-hangars and conventional (box) hangars. T-hangars are multiple "T" shaped hangars, arranged in one rectangular building, housing small single-engine aircraft. EUG has 15 T-hangar buildings, with 130 T-hangar units. EUG also has 37 conventional hangars, housing (sometimes multiple) jets, multi-engine, single-engine, and helicopters.

Fixed Base Operators (FBOs)

EUG has one full service fixed base operators: Flightcraft; two limited service FBO's, Friendly Air Service and Lawrence Air Service; and one helicopter FBO, Heli-Trade. Flightcraft operates in a 17,110 square-foot facility south of the terminal, with access and parking adjacent to Boeing Drive. Flightcraft offers fueling, oxygen, aircraft parking (ramp or tie-down), hangars, ground power, passenger terminal and lounge, charter, aircraft maintenance, avionics sales and service, catering, rental cars, and courtesy transportation. Flightcraft's aircraft range from light twin engine aircraft to stand-up cabin business jets.

Friendly Air Service, a limited service FBO, operates in a 9,381 square-foot facility north of the terminal, with access and parking from Lockheed Drive. Friendly Air Service offers charter services, scenic and photo flights, aircraft maintenance, aircraft sales and rentals, and flight instruction. Their aircraft are single-engine.

Lawrence Air Service is a limited service FBO, providing ground handling services, on-call aircraft maintenance, deicing, and charter flight ground handling.

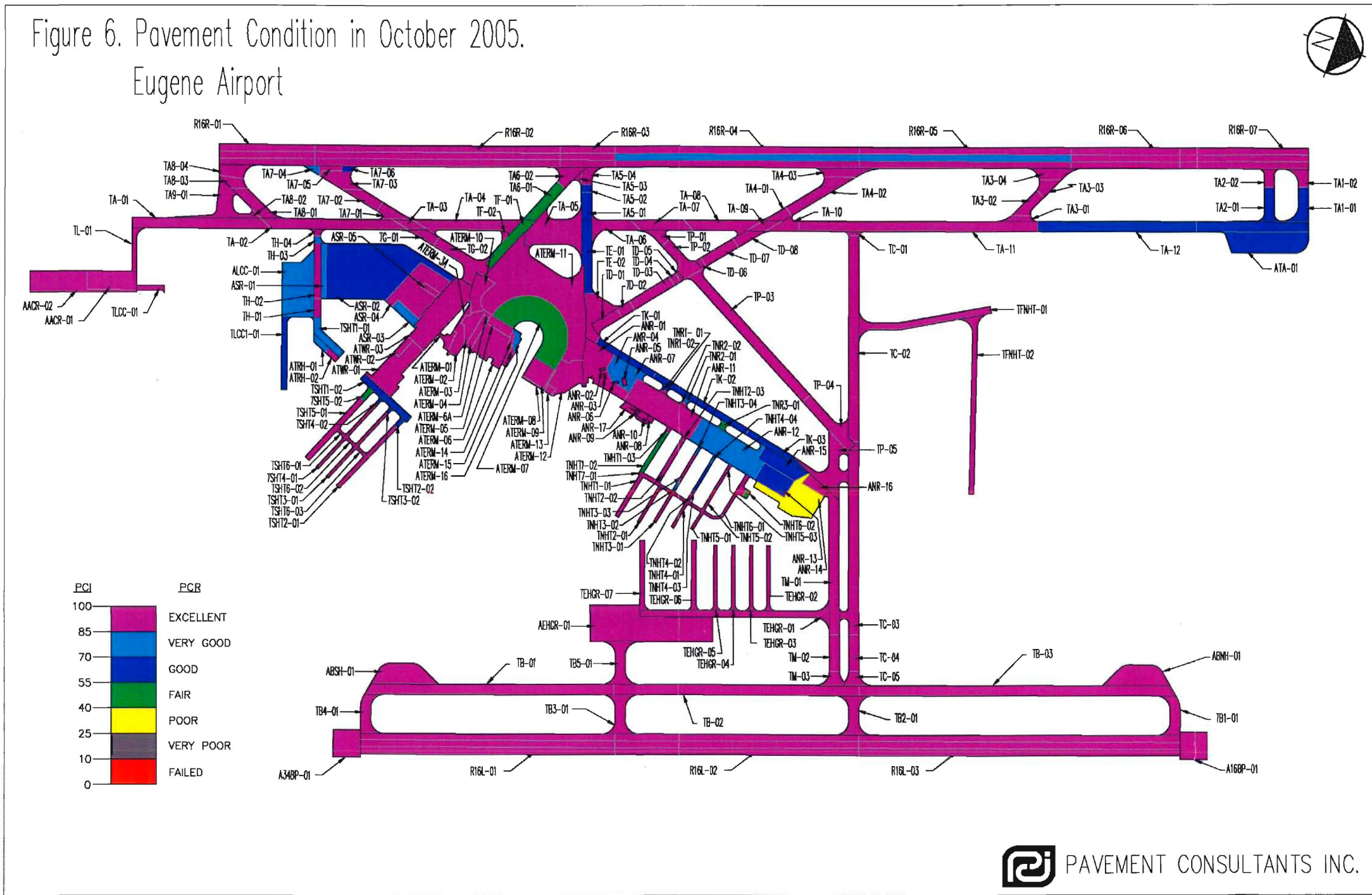
Heli-Trade Corporation operates a Bell Helicopter Textron Customer Service Facility and FAA repair station. Heli-Trade provides component, airframe, and engine maintenance for the Bell helicopters. Heli-Trade also leases helicopter.

Snow Removal Equipment (SRE) and Airport Maintenance

The 8,431 square-foot SRE building, located north of Taxiway C, houses equipment for responding to winter weather. The adjacent 9,200 square-foot airport maintenance building, located north of Taxiway C, houses both airfield maintenance equipment and airport landscaping equipment.



Figure 6. Pavement Condition in October 2005.
Eugene Airport



PAVEMENT CONSULTANTS INC.

Aircraft Rescue and Fire Fighting (ARFF) Building – Fire Station 12

The ARFF station is located between the Airport Traffic Control Tower (ATCT) and the terminal. This station is available from 6:00 AM to 11:30 PM daily by the City Fire Department personnel, and also with prior permission 24 hours a day/7 days a week. The station has three vehicle bays, kitchen, lounge, and sleeping areas. Fire fighting equipment includes an Oshkosh 1,500 gallon pumper, a 1,500 gallon Oshkosh Striker, and a disaster trailer equipped with emergency and rescue equipment. EUG's facility rating, based on the design aircraft, is Index B, and response time from the initial alarm to the first vehicle reaching the midpoint of the airfield is less than three minutes.

Aircraft Fueling

EUG has 100LL AvGas self-service, 100LL AvGas full-service, and Jet A full-service. The self service facility is on the east general aviation ramp, from a 6,000 gallon above-ground tank. Full-service fueling is carried by mobile fuel vehicles from a fuel facility on Lockheed Drive. The facility has above-ground tank storage for 60,000 gallons of Jet A and 21,000 gallons of AvGas, and also has an open bay for expanded fuel storage. There are four mobile fuel vehicles, with a total capacity of 12,500 gallons.

Navigational Aids

Navigational aids (navaids) include visual or electronic devices, either airborne or on the ground, which provide point-to-point guidance information or position data to an aircraft. Navaids range from signal transmissions, to lighting systems, to signage and pavement marking. Navaids support visual and instrument flight operations and aircraft ground movements; and also provide pilots with information such as weather data.

Landside Facilities

Landside facilities are located on the airfield, directly support aircraft operations, and are generally accessible by the public, and adjacent to public parking lots and roads.

General aviation and scheduled commercial passenger terminal could be considered both airside and landside facilities.

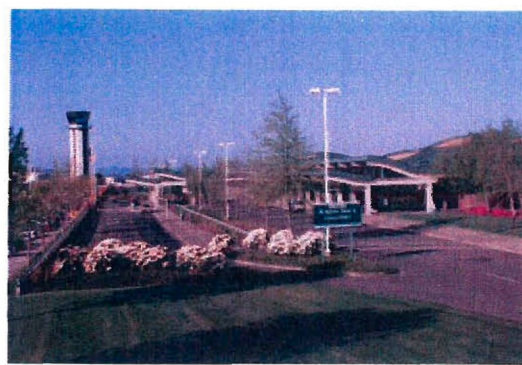
Passenger Terminal

EUG's Mahlon Sweet Terminal was completed in 1990. This 89,240sf facility is located southeast of the intersection of Runway 16R-34L and Taxiway P. The terminal has Concourse A on the second floor and Concourse B on the ground floor. The terminal has two restaurants, rental car service, a gift shop, and an art gallery.



Federal Aviation Administration/Airport Traffic Control Tower

The Federal Aviation Administration's (FAA's) Airport Traffic Control Tower (ATCT) is located south of the main terminal, behind the ARFF facility. This FAA facility is also home to the Cascade Terminal Radar Approach Control Facility (TRACON) which controls the airspace around EUG.



Airport Administration

The Airport Administration Building is located on the north side of Lockheed Drive. This 4,178sf administrative building houses the offices of the Airport Manager, the Airport Facilities and Operations Manager, and support staff. Two conference rooms, a waiting area, and restrooms are also located in this building. In addition to supporting daily administration functions, this building also hosts airport-related public meetings.

Transportation Security Administration

The Transportation Security Administration (TSA) operates in the terminal, with offices in a building west of the Airport Administration building.

Parking and Traffic Circulation

The main parking lot, located adjacent to the terminal, has 241 short-term and 714 long-term spaces. The overflow parking lot, located southeast of the terminal, has 585 spaces, and is served by a shuttle to/from the terminal. The employee parking lot, located north of the terminal, has approximately 200 spaces. The automobile rental ready/return lot is located in front of the terminal, and the rental lot and service building are located north of short-term parking area.

Airport vicinity roads include Airport Road, Douglas Drive, Boeing Drive, Northrop Drive, Hollis Lane, Kokkeller Road, Merryman Road, and Lockheed Drive. Douglas Drive accesses the terminal area from Green Hill Road. Douglas Drive changes to Northrop Drive near Lockheed Drive, and again changes to Hollis Lane north of Taxiway C. Northrop Drive accesses the east hangar area. Hollis Lane accesses the corporate hangars and the SRE building. Lockheed Drive accesses the north hangar and FBO area, and airport administration. Kokkeller Road accesses the cargo area along the south side of the airport. Merryman Road accesses the west side of the airfield. Airport Road accesses the south hangar and FBO area via Boeing Drive. Airport Road provides access to the south hangar and FBO area via Boeing Drive. Airport Road also extends east around the south end of Runway 34R, past Green Hill Road, to State Highway 99. In 2006, a portion of Airport Road was relocated to provide increased separation from Runway End 34R, and to provide improved traffic flow to the terminal area.

Vehicle access by regional traffic is by Interstate 5, which runs north and south several miles east of the Airport, and connects to Interstate Spur 105, Delta Highway and Beltline Highway, and to State



Highway 99. Access from downtown Eugene is by State Highway 99, to Airport Road, to Northrop Drive, and the terminal. Taxis, limos, and shuttles provide access from the Airport's service area.

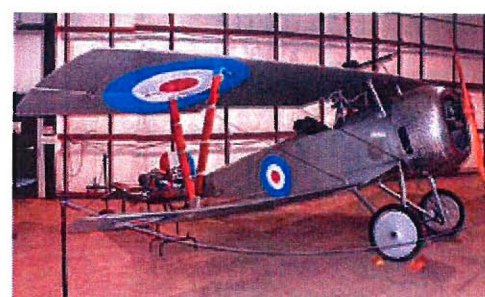
Lane Aviation Academy

Lane Community College's *Lane Aviation Academy* has three hangar buildings, a classroom (original terminal building), and an administrative building, located on the south side of the airport. The department offers programs in aviation flight and aviation maintenance.



Oregon Air and Space Museum

The Oregon Air and Space Museum is an educational, non-profit, aviation museum dedicated to the acquisition of historically significant aircraft and artifacts. This facility is located off of Boeing Drive. Displays include McDonnell Douglas F-4 Phantom, A4 Skyhawk, Grumman A-6 Intruder, North American F-86 Sabre Jet, Fokker Dr 1 Triplane, Taylor 2100 Bullet, Mikoyan/Gurevich MiG-17, and Yakovlev Yak-50.



Oregon Wing Civil Air Patrol

The headquarters of the Oregon Wing of the Civil Air Patrol (CAP), the official auxiliary of the US Air Force, is located on the south side of the Airport. The CAP headquarters is housed in an administrative office and hangar complex. Civil Air Patrol (headquartered at Maxwell Air Force Base, Alabama) is a non-profit, federally-chartered volunteer organization dedicated to serving the people of the United States through emergency services, education, and a cadet program. The Oregon Wing is home to 17 units with approximately 700 members.



Air Freight Office

Alaska/Horizon Cargo, operated by Horizon Air, processes air freight for commercial carrier operations. The 6,112sf air freight office is located in the old air traffic control tower building, north of the terminal, next to the maintenance hangar. This operation will be relocating to the new air cargo facility.

Utilities

Several area utilities companies, as well as the City, provide utilities to the airport. Water service is by the Eugene Water and Electric Board (EWEB). Wastewater is carried by an on-airport sanitary sewer system to the City's nearby treatment plant. Electricity is provided by EWEB, Emerald People's Utility District, and the Blachly Lane Cooperative. Telephone is provided by Quest. Natural gas is provided by Northwest Natural Gas.



As part of this Master Plan Update, utility information from surveys and record drawings will be inventoried, consolidated, and included in electronic mapping.

Drainage

Stormwater runoff is carried by underground and surface drainage systems to drainage ditches on the airport's northern and western borders, to Clear Lake Channel, a portion of Amazon Creek, which runs west of the Airport.

Tables 1-5 and 1-6 give summaries of airport environs and features.

Table 1-5: Airport Environs	
<p>Property</p> <ul style="list-style-type: none"> • Land owned in fee simple: 2,340 acres <p>Access</p> <ul style="list-style-type: none"> • Interstate 5 or Interstate Spur 105/Delta Highway, to Beltline, to State Highway 99, to Airport Road • State Highway 126 to Greenhill Road to Airport Road 	<p>Principal Surrounding Land Uses</p> <ul style="list-style-type: none"> • Wetlands (in immediate vicinity) • Agriculture • Fern Ridge Reservoir (to west) • Urban development – Santa Clara (to east) • Urban development – Eugene (to south) • Urban development – Junction City (to north) <p>Topography</p> <ul style="list-style-type: none"> • Airport elevation 374 MSL • Located in Willamette Valley, between Cascade Mountains and Coastal Range
<p><i>Source: Mead & Hunt, Inc.</i></p>	



Table 1-6: Major Features and Facilities Summary	
<p>Runways</p> <ul style="list-style-type: none"> Runway 16R-34L: 8,009ft x 150ft, grooved asphalt surface; full parallel 75 ft taxiway, 500ft separation Runway 16L-34R: 6,000ft x 150 ft, grooved asphalt surface; full parallel 75ft taxiway, 400ft separation <p>Runway Navigational Aids</p> <ul style="list-style-type: none"> Runway 16R <ul style="list-style-type: none"> Instrument Landing System (ILS), w/Category I, II, and III Configurations Localizer with Distance Measuring Equipment (LOC/DME) (on opposite runway end) High Intensity Approach Light System w/Sequenced Flashing Lights, Category II Configuration (ALSF2) Glideslope, 3° glide path 4-light Precision Approach Path Indicator (PAPI), 3° glide path Touchdown zone lights (TDZL) Precision marking Runway 34L <ul style="list-style-type: none"> Omni-Directional Approach Lighting System (ODALS) 4-box Visual Approach Slope Indicator (VASI), 3° glide path Precision markings Runway 16L <ul style="list-style-type: none"> ILS, w/Category I Configuration Localizer with Distance Measuring Equipment (LOC/DME) (on opposite runway end) Medium Intensity Approach Light System w/Runway Alignment Indicator Lights (MALSR) Glideslope, 3° glide path 4-light PAPI, 3° glide path Precision marking Runway 34R <ul style="list-style-type: none"> Runway End Identifier Lights (REIL) 4-light PAPI (3 degrees) Precision markings Runway 16R-34L <ul style="list-style-type: none"> Centerline lights (CL) High Intensity Runway Lighting (HIRL) Medium Intensity Taxiway Lights (MITL) Runway Visible Range (RVR) Runway 16L-34R: HIRL, MITL, Centerline reflectors <p>Airport Navigational Aids</p> <ul style="list-style-type: none"> Air Traffic Control Tower (ATCT) / Terminal Radar Approach Control Facility (TRACON) VHF Omni Directional Range/Tactical Air Navigation (VORTAC) Automated Surface Observation System (ASOS) Automated Terminal Information System (ATIS) Rotating beacon Lighted wind indicators Segmented circle Stand-alone weather system (SAWS) 	<p>Instrument Approach Procedures</p> <ul style="list-style-type: none"> Runway 16R <ul style="list-style-type: none"> ILS or LOC/DME Z ILS (CAT II) ILS (CAT III) VOR/DME or TACAN GPS ILS or LOC Y Runway 34L <ul style="list-style-type: none"> RNAV (GPS) VOR/DME or TACAN Runway 16L <ul style="list-style-type: none"> ILS or LOC/DME RNAV (GPS) Runway 34R <ul style="list-style-type: none"> RNAV (GPS) Airport (Circling) <ul style="list-style-type: none"> VOR or GPS-A <p>Instrument Departure Procedures</p> <ul style="list-style-type: none"> Eugene Seven <p>Building Area</p> <p>Located between runways</p> <ul style="list-style-type: none"> Passenger terminal building FAA ATC/TRACON Transportation Security Administration Fixed base operators ARFF building Private hangars Airport administration Airport maintenance Air cargo office Lane Community College Oregon Air and Space Museum City storage <p>Fixed Base Operators (FBOs)</p> <ul style="list-style-type: none"> Flightcraft Friendly Air Service Lawrence Air Service Heli-Trade Fuel <ul style="list-style-type: none"> 100LL AvGas (full- and self-service) Jet A (full-service) <p>Emergency and Security</p> <ul style="list-style-type: none"> ARFF Index B Transportation Security Administration (TSA) provides passenger/baggage screening Eugene Police

Source: Mead & Hunt, Inc.



3. Airspace and Air Traffic Control

The Federal Aviation Administration Act of 1958 established the FAA as the responsible agency for the control and use of navigable airspace. Navigable airspace determines the capacity and the operational interaction of EUG with surrounding airports and airways. Flights are conducted using both Visual Flight Rules (VFR), during fair weather, and Instrument Flight Rules (IFR), during adverse weather. Published instrument procedures outline aircraft flight path and altitude.

Three components of the airspace system encompass EUG: enroute, transitional, and terminal airspace facilities. Each component has a specific function and is supported in its role by a network of air traffic control and NAVAIDs. EUG's airspace is depicted in **Exhibit 1-4**.

3.1 Enroute Airspace

Eugene Approach Control is charged with controlling any aircraft requesting air traffic services operating under VFR and IFR in the Eugene area which are destined for Eugene Airport, Rogue Valley International-Medford, or Corvallis Municipal Airport. Aircraft flying through the region or to an airport in the area typically follow designated routes known as Victor Airways or jet routes. These airways are defined by VORs located throughout the country. Aircraft in the Eugene area following these routes are controlled by the Eugene Tower Approach Control.

3.2 Transitional Airspace

Transitional areas are FAA-defined Class E airspace areas, beginning at either 700 or 1,200 feet, used by aircraft to transition between the terminal and en route airspace. As EUG has an ATCT, the airport is within FAA-defined Class D airspace, which extends from the surface to 2,500 feet above the airport elevation, and includes the airspace for instrument procedures. Within Class D airspace, aircraft are subject to certain pilot qualifications, operating rules, and equipment requirements, and aircraft must maintain communications with the ATCT.

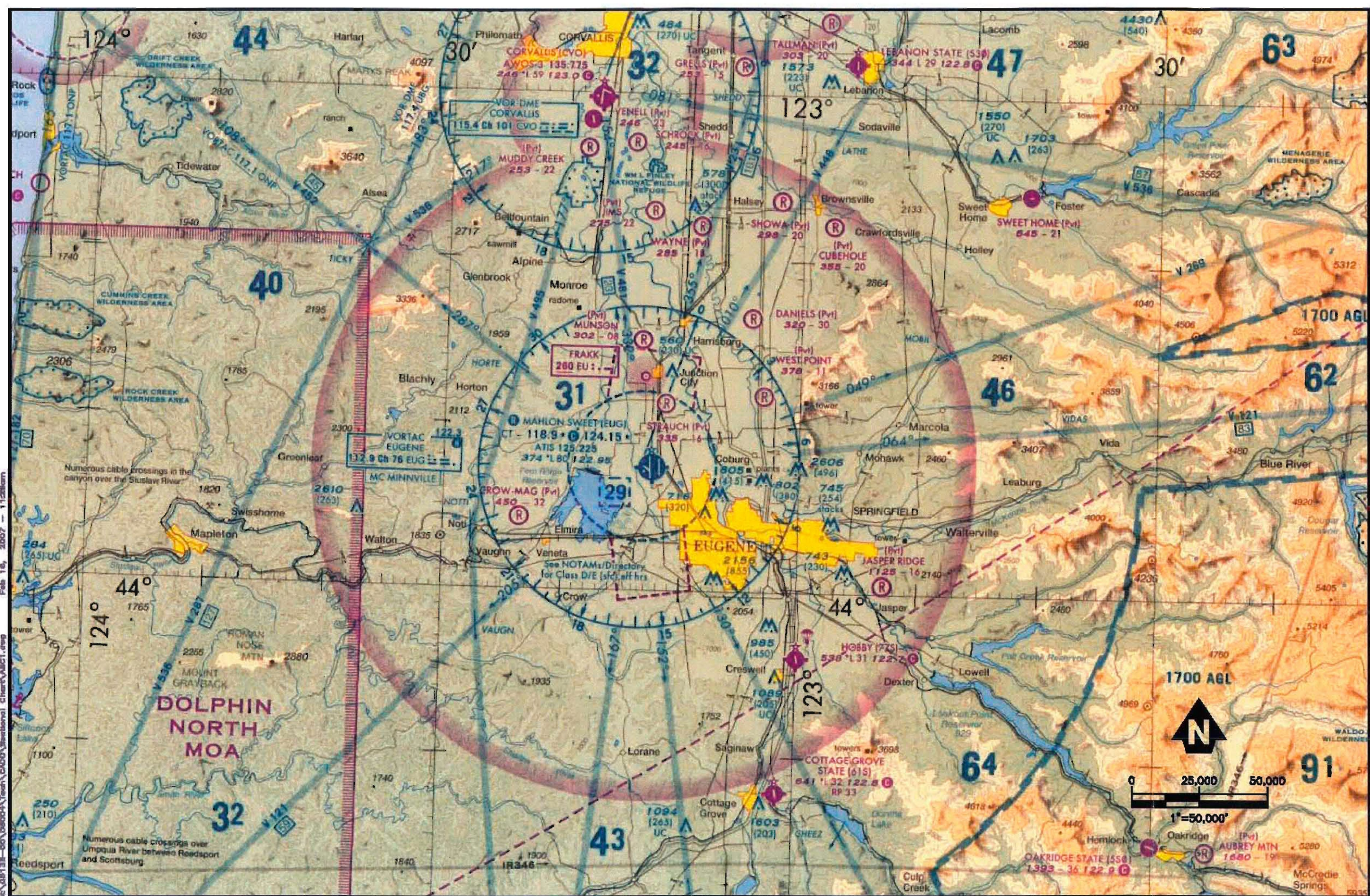
3.3 Terminal Airspace Facilities

EUG's terminal airspace facilities include the visual and electronic equipment, nav aids, and personnel used to aid pilots in navigating to, and landing at, an airport. The Airport ATCT is located south of the main terminal, behind the ARFF facility. The tower operates from 6 am to 11:30 pm.

3.4 Instrument Procedures

EUG has 12 instrument approach procedures: 6 for Runway End 16R, 2 for 34L, 2 for 16L, 1 for 34R, and 1 serving the airport. EUG has one instrument departure procedure, and has take-off minimums and (obstacle) departure procedures.





4. Socioeconomic Trends

Socioeconomic aspects, including population, employment, and income, are evaluated for EUG's market service area, and compared to national data, to reveal local trends. EUG's market service area includes Lane, Benton, Douglas, and Linn Counties. Socioeconomic data comes from Woods & Poole, a census information company.

4.1 Population

Table 1-7 shows EUG's market service area population, both historic and projected. This population has increased from 597,721 in 1997 to 634,421 in 2006, a 0.66% compound annual growth rate (CAGR). The nation's population over this time increased at a 1.18% CAGR. The population is projected to increase to 664,400 in 2011, to 695,914 in 2016, and to 763,553 in 2026, representing a 0.93% CAGR.

4.2 Employment

Table 1-8 shows EUG's market service area employment, both historic and projected. This employment has increased from 335,832 in 1997 to 357,002 in 2006, a 0.68% CAGR. The employment is projected to increase to 380,893 in 2011, to 404,663 in 2016, and to 451,897 in 2026, representing a 1.19% CAGR. Since 1997, the unemployment rate in the State of Oregon has been one point to two points higher than the national rate.

Year	Population
Historic	
1997	597,721
1998	601,954
1999	603,858
2000	605,090
2001	606,426
2002	612,143
2003	617,663
2004	620,258
2005	626,936
2006	634,421
Projection	
2011	664,400
2016	695,914
2026	763,553
CAGR 1997-2006	0.66%
CAGR 2006-2026	0.93%

Source: Woods & Poole

Year	Employment
Historic	
1997	335,832
1998	340,039
1999	342,455
2000	346,349
2001	342,555
2002	343,518
2003	342,543
2004	347,377
2005	352,195
2006	357,002
Projection	
2011	380,893
2016	404,663
2026	451,897
CAGR 1997-2006	0.68%
CAGR 2006-2026	1.19%

Source: Woods & Poole



Table 1-9 shows employment distribution. Employment in EUG's market service area is distributed among several categories, the greatest being service.

Sector	Percentage
Services	30.31
Retail Trade	17.13
Manufacturing	13.80
State and Local Government	13.72
Finance, Insurance & Real Estate	6.36
Construction	5.00
Transportation, Communications & Public Utilities	3.15
Wholesale Trade	3.09
Farm Employment	3.04
Agricultural Services, other	2.35
Federal Civilian Government	1.28
Federal Military Government	0.64
Mining	0.11

Source: Woods & Poole

4.3 Income

Table 1-10 shows EUG's market service area average income per capita, both historic and projected. This income per capita has increased from \$22,023 in 1997 to \$23,938 in 2006, a 0.93% CAGR. The income per capita is projected to increase to \$25,126 in 2011, to \$26,361 in 2016, and to \$29,035 in 2026, representing a 0.97% CAGR.

Evaluation of the socioeconomic variables of population, employment, and income indicate a healthy economy expected to experience modest growth. The economy of EUG's market service area is diverse, and economic stability is expected to continue.

Year	Income Per Capita (1996 Dollars)
Historic	
1997	\$22,023
1998	\$22,649
1999	\$22,922
2000	\$23,308
2001	\$23,607
2002	\$23,489
2003	\$23,259
2004	\$23,560
2005	\$23,776
2006	\$23,938
Projection	
2011	\$25,126
2016	\$26,361
2026	\$29,035
CAGR 1997-2006	0.93%
CAGR 2006-2026	0.97%

Source: Woods & Poole



4.4 Land Use and Urban Growth

Land use planning in the environs of the Airport protects the Airport and airport-related uses. Incompatible land uses can limit the Airport's development potential, and can represent a potential safety threat. Local planning and zoning authority provides essential land use tools to preserve airport and airport-related functions, and protect against incompatibility. Both the City of Eugene and Lane County have zoning which affects the airport. **Exhibits 1-5, 1-6, 1-7, and 1-8** show City and County zoning.

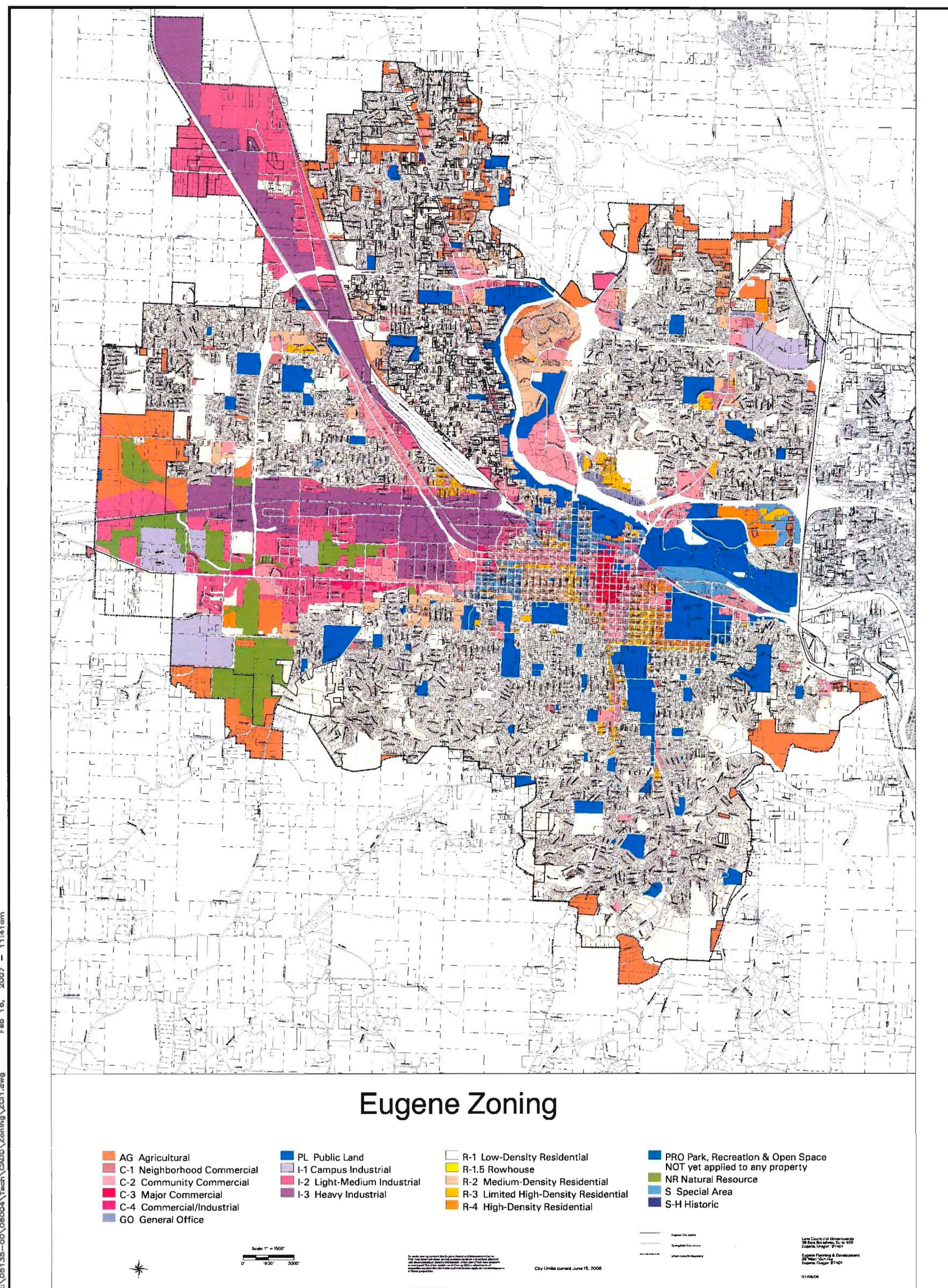
Incompatible land uses have the potential to develop near the Airport. Agricultural and rural/industrial land is east of the Airport, and large to mid-sized residential lots and hobby farms are to the west. Development near Fir Butte Road and Clear Lake Road, zoned by Lane County for residential use, may be a concern, as it is $\frac{3}{4}$ mile south of Runway End 34L. Development along Green Hill Road, near Barger Drive may also be a concern, as it is 2 miles south of Runway End 34R.

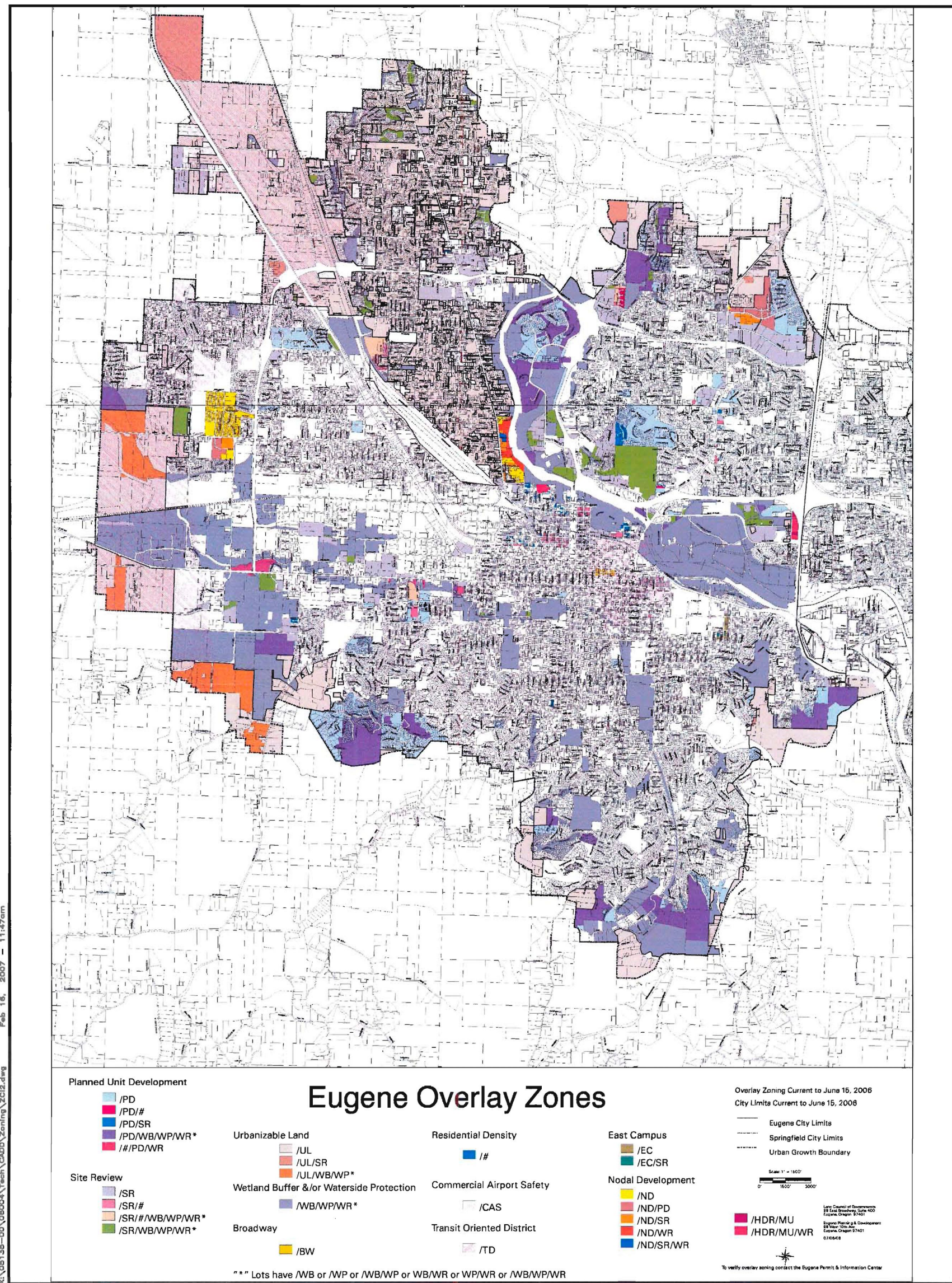
The Eugene-Springfield Metropolitan Area General Plan (Metro Plan) contains policies relating to the Airport, and depicts generalized land use designations for the Airport and environs. Parcels within the airport boundaries are subject to Metro Plan land use designations, and to specific uses allowed in Lane County zoning districts, as outlined in Chapter 16 of the Lane Code.

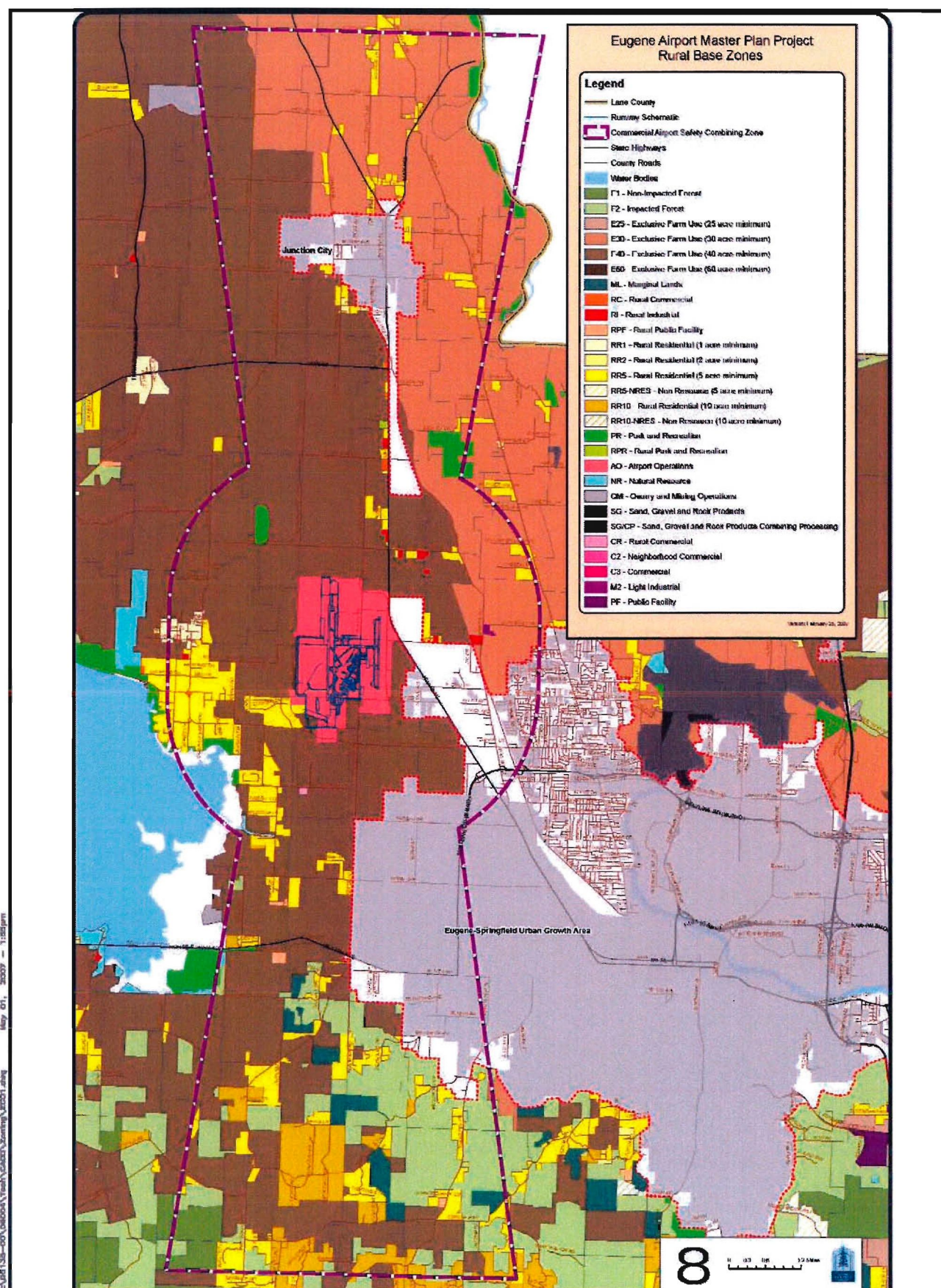
The Lane County Code and Eugene Land Use Code include provisions for a Commercial Airport Safety Combining Zone (CAS-RCP) and Commercial Airport Safety Overlay Zone (CAS), respectively. These zoning overlay districts allow Lane County and the City of Eugene to regulate the scope of development near EUG that may pose a hazard to air navigation. This zoning classification is placed on top of existing zoning, so that in the event of diverging standards, the more stringent regulations apply. The City of Eugene's jurisdiction covers development not only within the city limits proper, but within all areas inside the city's Urban Growth Boundary (UGB). The Airport is entirely outside the UGB of Eugene and is subject to County zoning. The Airport is zone AO (Airport Operations) and the regulations for that zone are contained in Lane Code Chapter 16. The purpose of this zone is to recognize those areas devoted to or most suitable for the immediate operational facilities necessary for commercial and noncommercial aviation. In addition, the AO zone is intended to provide areas of certain open space uses for airfield ground maintenance and as a buffer to minimize potential dangers from and conflicts with, the use of aircraft.

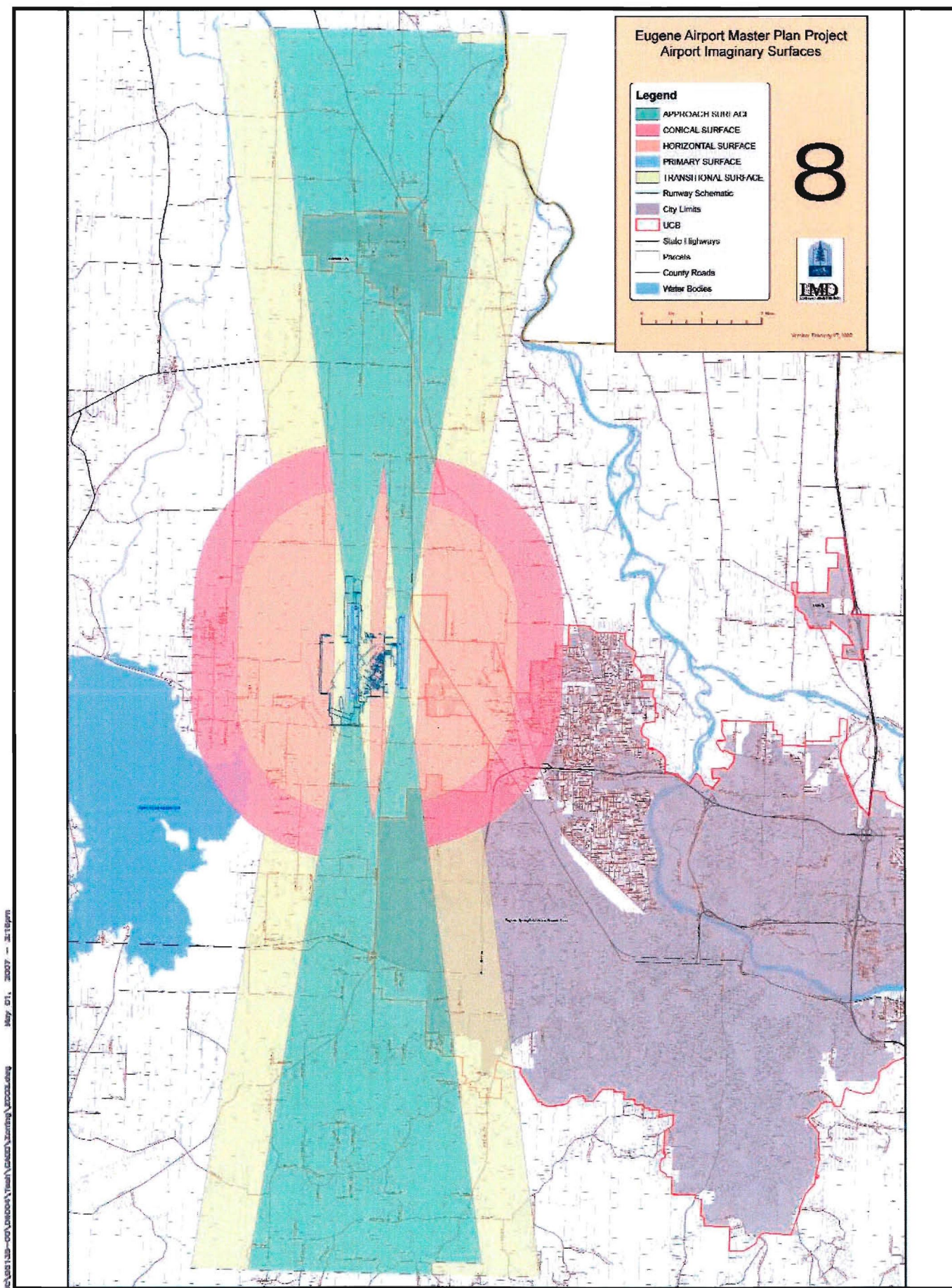
Within the CAS-RCP and CAS zones are FAA-defined imaginary surfaces for protecting air navigation. These surfaces regulate the height of structures surrounding the airfield. Generally, the nearer a structure is to the runway, the more limited its height.











The City of Eugene regulates the zoning within its UGB, while Lane County regulates the area outside the UGB. The statute is being further examined in the state court system, in regard to legality and implementation. The regulations for this combining zone are contained in Lane Code Chapter 16. The purpose of the /CAS Combining Zone is to prevent the creation or establishment of obstructions or other hazards to air navigation and flight such as distracting light and glare producing surfaces, radio interference, smoke, steam, dust, and areas which attract birds and hazards of a similar nature. A portion of the imaginary surfaces are within the UGB of Eugene and another portion is within the city limits of Junction City. Land uses inside those areas are regulated by Eugene and Junction City, respectively.

4.5 Urban Growth

Lane County is experiencing growth in new residential units, although growth between 2000 and 2005 has been lower than between 1994 and 1999. Between 1994 and 1999, 11,306 new residential permits were issued. Between 2000 and 2005, 6,607 permits were issued. However, in 2005, the number of permits issued reached a level commensurate with the late 1990s. Between 1990 and 2005, the percentage of new multi-family housing units as a percentage of all residential units was at its highest in the late 1990s, and its lowest in years 2000, 2002, and 2003. However, there has been an increase in 2004 and 2005.

Cities in Lane County annexed 2,143 acres from unincorporated areas with the most areas going to Springfield. Between 2000 and 2005, the City of Eugene annexed 397.45 acres. Annexations in the last 20 years have occurred in the northwest metro area along River Road, Prairie Road, Highway 99, and in far west Eugene. Annexations are connected to municipal sewer and water services, allowing for high density development. Growth is expected to continue as developments take advantage of available infrastructure extensions. The UGB helps prevent encroachment of the Airport by incompatible land uses as the Airport is outside the UGB, but within the Metro Plan boundary.

In addition to Commercial Airport Safety Combining Zone and 2004 Metro Plan policies, Eugene has created an urban growth boundary, to encourage greater utilization of land in urban areas, to prevent unorganized, sprawling development, and to conserve open space. The urban growth boundary helps prevent encroachment of the Airport by incompatible land uses, even though the Airport is outside the urban growth boundary.

Subsequent elements of this Master Plan Update will consider issues related to the future compatibility of land use with respect to aircraft operations. In addition to local and state land use regulations, federal laws also influence where development at the Airport, and around the Airport, can take place.



5. Aviation Activity

This section reviews historic aviation activity trends at EUG (passenger enplanements, aircraft operations and based aircraft) and recent changes in domestic scheduled commercial and general aviation activity at the national level.

5.1 Enplanements

Passenger enplanements (see **Graph 1-1**) are broken down into two categories: major/national and regional/commuter. For decades, major/national enplanements at EUG fluctuated between 150,000 and 280,000. A downward trend began in 1999, until there were no major/national enplanements at EUG in 2003. In contrast, regional/commuter enplanements have increased, even dramatically in the last few years. In 2001, regional/commuter enplanements first exceeded major/national enplanements at EUG, and today regional/commuter enplanements dominate EUG's activity.

EUG, like many similar airports across the US, has experienced a decrease in major/national airlines. In 1988, United Airlines, US Air, and Continental Airlines served EUG. In 1998 only United remained, and today no major/national carrier serves EUG, resulting in no major/national enplanements.

The number of regional/commuter airlines at EUG has fluctuated since 1988, although Horizon Air and United Express have maintained service for nearly two decades. Similar to national trends, regional/commuter airlines continue to play an increasingly important role at EUG, and are now the sole provider of scheduled commercial passenger service. In 2006, regional passenger enplanements reached a high of 360,258.

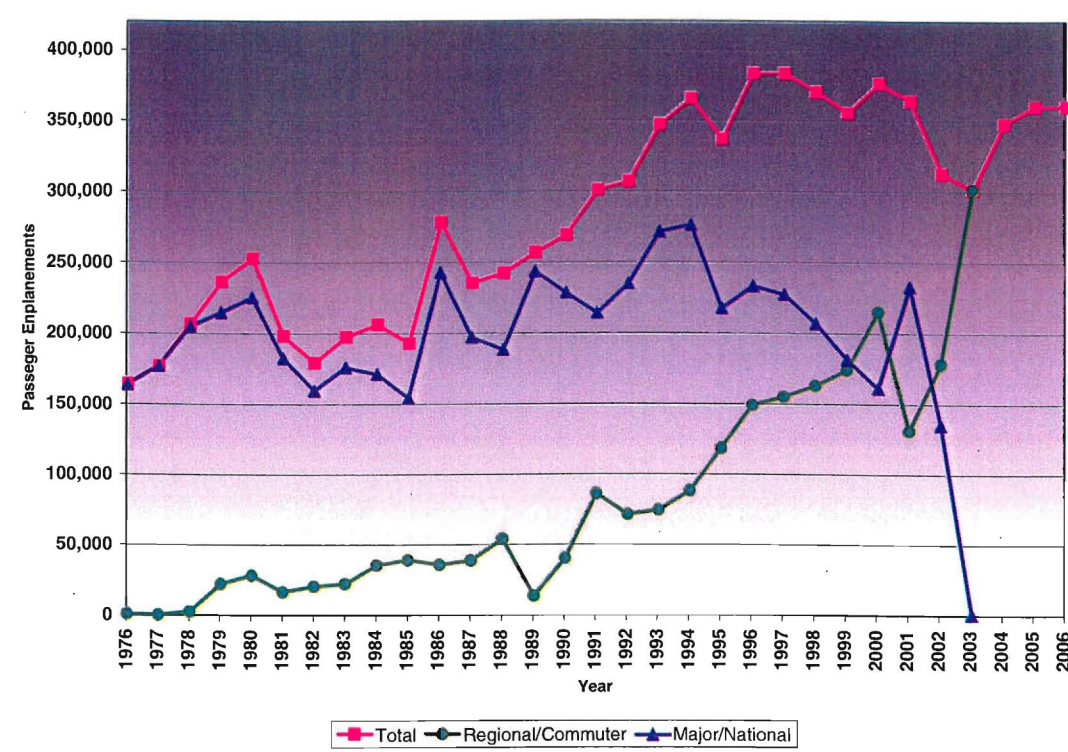
5.2 Operations

An aircraft operation is a take off or landing of an aircraft. An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations. There are two basic types of operations—local and itinerant.

Aircraft operations (see **Graph 1-2**) at EUG from 1976 to 1994 have shown relative volatility and from 1995 to 2005 relative stability. There have been two major spikes in aircraft operations at EUG—one in late 1979 and another in 1990. The first peak was due to a combination of strong operations levels across the board. The second peak was due to exceptionally high levels of local general aviation operations. From 1990 to 2002, operations steadily declined and have since leveled out. Instrument operations, generally aircraft that are on an instrument flight rules flight path, have steadily increased.

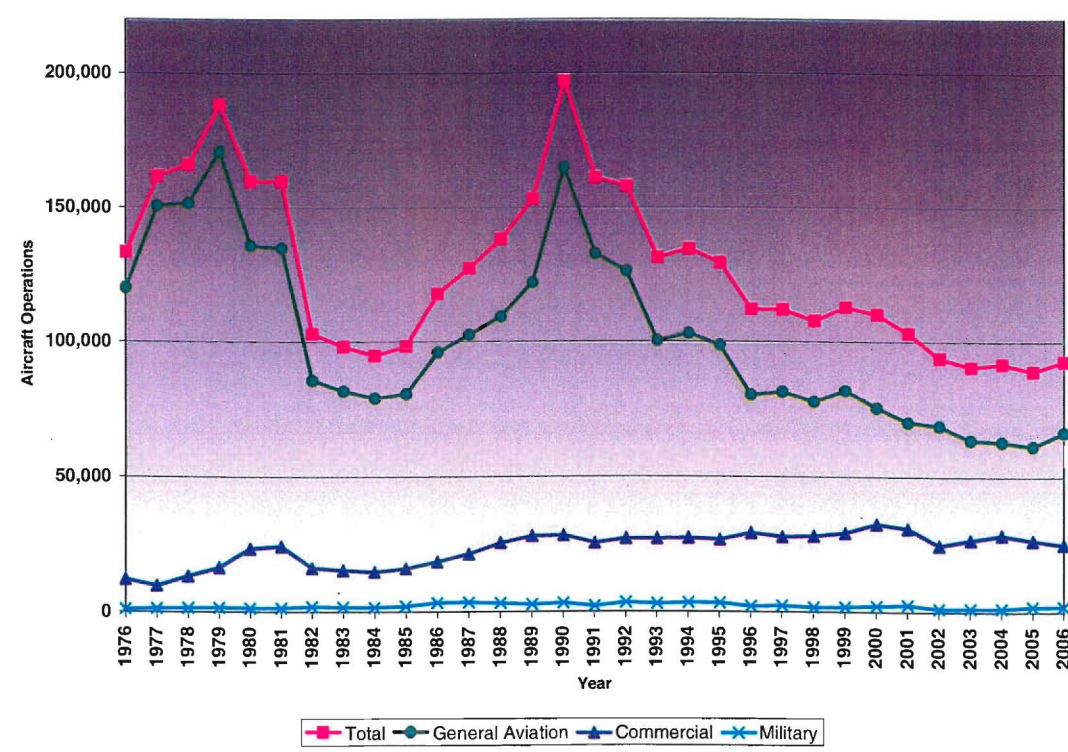


Graph 1-1: Historical Passenger Enplanements 1976-2006



Source: Airport management records

Graph 1-2: Historical Aircraft Operations 1976-2006



Source: Airport management records



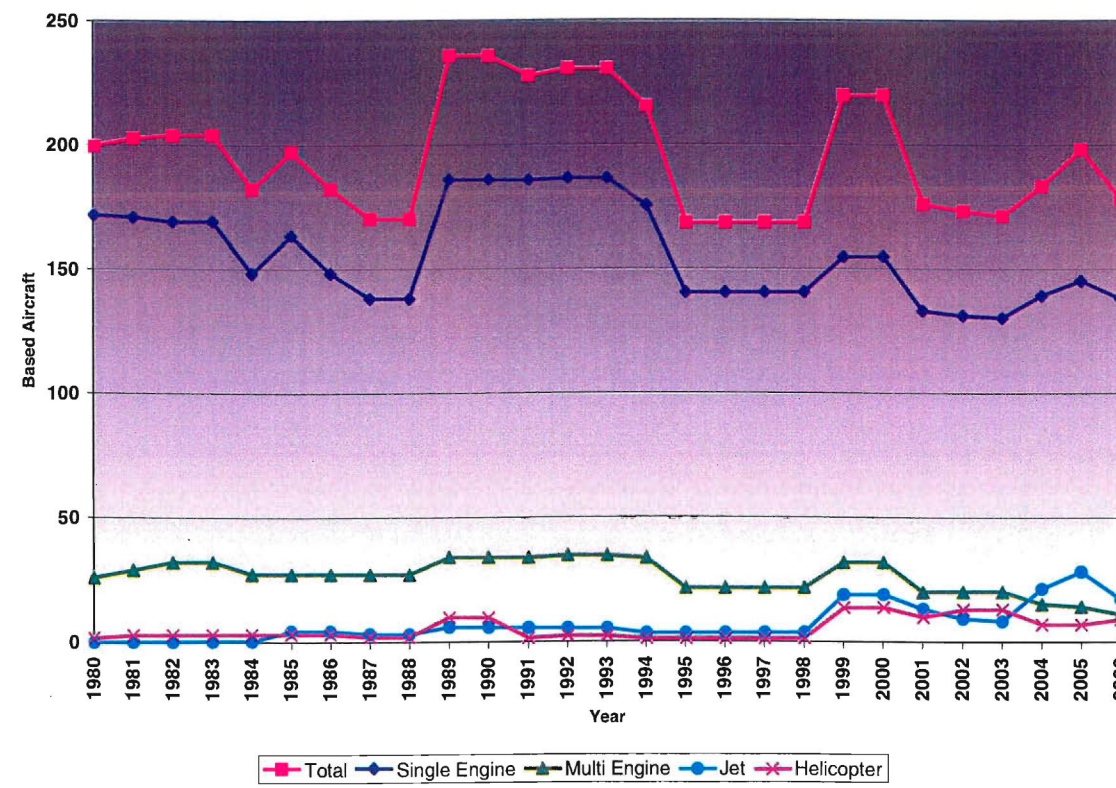
Since 2002, total aircraft operations at EUG have been the lowest recorded by the FAA in their Terminal Area Forecast (TAF). Much of the decline can be attributed to fewer general aviation operations.

Operations at EUG generally reflect national trends. From 2000 to 2004, operations at towered airports declined around 12%, but in 2005, general aviation operations at towered airports increased around 2%, a trend which EUG is not reflecting.

5.3 Based Aircraft

Based aircraft are aircraft stationed at an airport on a long-term basis. Based aircraft at EUG had peaks in the early 1990's and late 1990's, increased from 2003-2005, and decreased in 2006 (see **Graph 1-3**). The fleet mix has also changed, such that in 2004, based jet aircraft began to outnumber multi-engine aircraft. Single engine aircraft continue to be the dominant based aircraft type at EUG.

Graph 1-3: Historical Based Aircraft 1980-2006



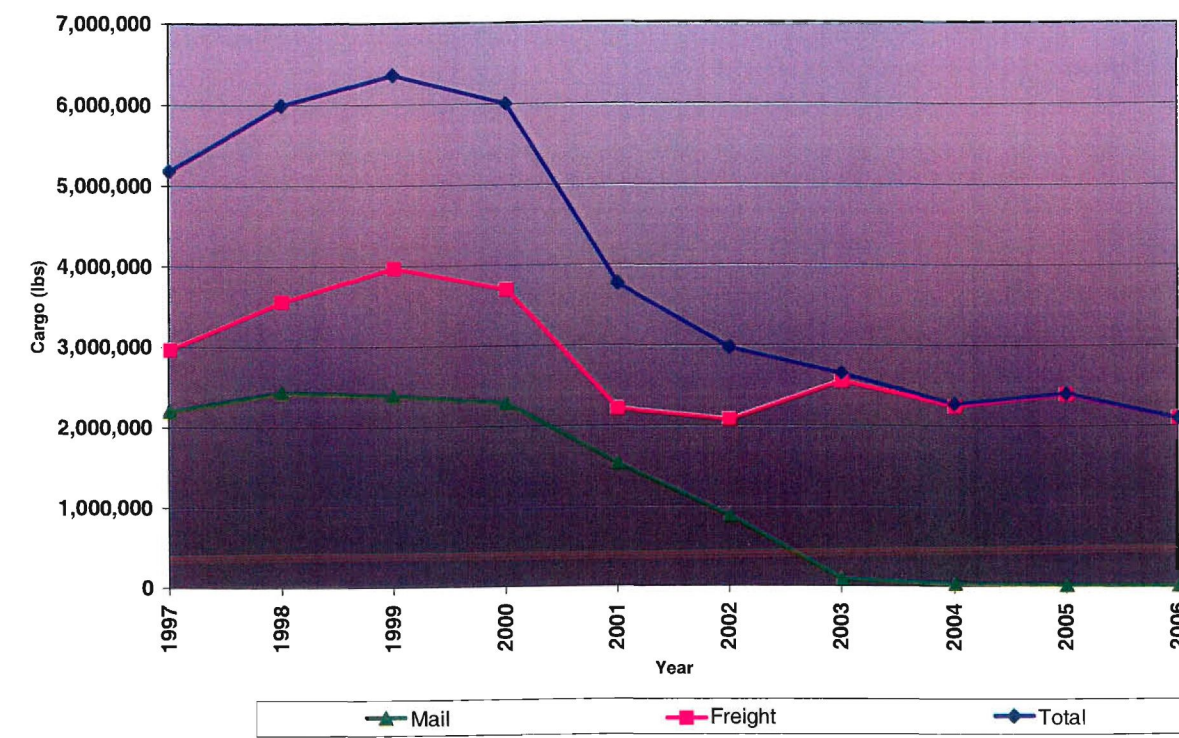
Source: Airport management records



5.4 Air Cargo

Total enplaned cargo at EUG has generally declined since 1999, especially since air mail has dropped significantly to zero (see **Graph 1-4**). Enplaned cargo at EUG now consists of freight, which has been steady since 2001.

Graph 1-4: Historical Air Cargo 1997-2006



Source: Airport management records





1. Introduction

Eugene Airport (EUG) is an active, thriving facility, with people boarding and exiting aircraft, freight loading and unloading to and from aircraft, aircraft departing and arriving, and aircraft being stored and serviced. Each activity is accommodated by facilities and services which are sized based on activity levels. Forecasting is used to estimate potential future activity levels, by evaluating historical activity, and applying projection methods. This is done so the appropriate facilities and services can be planned and implemented. Forecasted activity levels affect airport capital improvement programming, funding, and budgeting, as well as facilities, services, and staff.

The activities evaluated and forecasted in this Master Plan Update include passenger enplanements, aircraft operations, based aircraft, and air cargo. Many methods of forecasting are available, and multiple methods are applied to each activity. Results for each activity are compared among themselves, and with Federal Aviation Administration (FAA) forecasts. Consideration is given to forecasting methods that best represent reasonable expectations. The preferred forecasts are submitted to the FAA for review and acceptance. Significant variation from FAA's own forecast requires justification to be accepted by the FAA.

The historic data range to be used in the forecasting effort is from 1997 through 2006. Activity levels are forecast to 5, 10, and 20 years from the base year (2006), thus giving results for years 2011, 2016, and 2026.



2. Passenger Enplanements

Passenger enplanements are the activity of passengers boarding commercial service aircraft departing from EUG. Enplanements include passengers on scheduled commercial service aircraft, and on non-scheduled charter aircraft. Enplanements do not include airline crew.

Passenger enplanement data is provided to Airport management by commercial passenger service carriers, who maintain data as they transport people to and from EUG. Having actual historic data instead of estimates gives confidence in using the base data for forecasting.

Evaluation and forecasting do not address deplanements, which are passengers exiting commercial service aircraft arriving at EUG. It is expected that each departing passenger returns to EUG, so that the number of enplanements equals the approximate number of deplanements.

Past master plans have separated commercial passenger enplanements into scheduled and charter; scheduled enplanements into major, national, and regional carriers; and commercial passenger aircraft into large, commuter, and air taxi. EUG commercial passenger service is primarily scheduled, with approximately 1.5% charter service. Major and national carriers and aircraft which have served EUG in the past have been replaced by regional carriers and aircraft. In 2007, there was no scheduled major or national carrier serving EUG, and none is expected immediately. Accordingly, for this Master Plan Update, enplanement evaluation and forecasting are not categorized.

2.1 Enplanement History and Industry Trends

This section presents information on historical passenger activity and trends at EUG, and also includes a discussion of general trends in travel and in the commercial airline industry.

Table 2-1 shows historical EUG passenger enplanements. As shown, there were 383,890 enplanements in 1997, which fell to 301,339 in 2003 (as a result of the events of September 11, 2001), and rose to 360,258 in 2006. The state of Oregon also experienced an economic recession following the events of September 11, 2001. Due to challenges facing the entire commercial aviation industry over the past five or six years, EUG has been typical in terms of seeing a loss in traffic and then seeing a slow rebound. The year 2006 continued the trend of passenger growth, which can be attributed to a stronger, leaner airline industry and a stable market base in the Eugene area.

Since 2000, the aviation industry has been battered with 9/11, SARS, and record fuel prices. Over the last five years, major restructuring and downsizing among the mainline legacy carriers has occurred

Year	Enplanements
1997	383,890
1998	370,850
1999	355,992
2000	376,522
2001	364,049
2002	312,735
2003	301,339
2004	347,672
2005	360,049
2006	360,258
CAGR* 1997-2006	-0.70%
* Compound Annual Growth Rate	
Source: Airport management records	



along with rapid growth among low-cost carriers, and exceptional growth among regional carriers. Two legacy carriers have filed for bankruptcy protection and two have recently emerged from bankruptcy. The cost of jet fuel, which is typically an airline's second largest expense, has doubled in price in the past six years, hampering the ability of the carriers to return to profitability or emerge from bankruptcy. Even with these difficult times for carriers, U.S. airports (especially large ones) continue to have the financial capability to provide safe and efficient air transportation and to raise the money needed to accommodate future growth in passenger and cargo demand. The year 2006 was considered an adjustment year for many airlines, with those in bankruptcy working diligently to reduce costs, realign routes, and craft their strategy to exit from bankruptcy. The FAA projects strong growth in aviation for the US, with total enplanements projected to increase from 738.6 million in 2005 to 1.07 billion in 2017, reflecting a 3.1% average growth rate.

2.2 Enplanement Forecast – FAA Terminal Area Forecast

The FAA monitors and projects activity levels at the nation's airports, and makes this data available through its Terminal Area Forecast (TAF). The FAA TAF, as shown in **Table 2-2**, projects EUG enplanements to increase from 360,258 in 2006, to 384,483 in 2011, to 423,873 in 2016, and to 515,379 in 2026, representing a 1.81% CAGR.

2.3 Enplanement Forecast – Market Share Methodology

Market share forecasting considers EUG's historic enplanements in relation to the nation's enplanements, and projects EUG enplanements as a percentage of national enplanements. National enplanement projections come from the FAA.

Table 2-3 presents an enplanement forecast using the market share methodology. As shown, EUG enplanements are forecast to increase from 360,258 in 2006, to 412,873 in 2011, to 445,593 in 2016, and to 557,736 in 2026, representing a 2.21% CAGR. Our assumptions for EUG's market share in future years reflect a declining share of the U.S. market, as compared to the most recent year (2006). This position is based on an outlook of the commercial airline business, and the fact that Eugene will continue to have challenges in this area. This outlook factors in potential commercial carrier consolidation, concentration of carrier operations to larger hub airports, and competition among airports. Accordingly, the market share percentage is decreased for each forecast year.¹ Because of the hard work and innovative techniques the City has employed in keeping good air service, this forecast is still positive on the whole due to overall

Year	Enplanements
Historic	
1997	383,890
1998	370,850
1999	355,992
2000	376,522
2001	364,049
2002	312,735
2003	301,339
2004	347,672
2005	360,049
2006	360,258
Projection	
2011	384,483
2016	423,873
2026	515,379
CAGR 1997-2006	-0.70%
CAGR 2006-2026	1.81%
Source: FAA	

¹ The market share assumption for 2011 is held constant at the 2006 level, reflecting stabilization of the industry. For years, 2016 and 2026 were reduced slightly (0.0650% and 0.060%) reflecting small incremental reductions in projected market share based on the consultant's experience and judgment.



anticipated U.S. employment growth. Some of these techniques include development of the Airline Travel Bank™, which has helped launch new airline routes. The City is also aggressively working to reduce airline costs to help keep them at the Airport (paying down the terminal bond debt is one way they are doing this).

Year	US Enplanements	EUG Enplanements	Market Share
Historic			
1997	577,845,747	383,890	0.0664%
1998	590,417,191	370,850	0.0628%
1999	610,924,928	355,992	0.0583%
2000	561,493,888	376,522	0.0671%
2001	546,310,418	364,049	0.0666%
2002	485,921,321	312,735	0.0644%
2003	482,838,537	301,339	0.0624%
2004	502,567,046	347,672	0.0692%
2005	523,143,810	360,049	0.0688%
2006	517,912,372	360,258	0.0696%
Projection			
2011	593,552,406	412,873	0.0696%
2016	685,527,557	445,593	0.0650%
2026	929,560,000	557,736	0.0600%
CAGR 1997-2006	-1.21%	-0.70%	
CAGR 2006-2026	2.97%	2.21%	

Sources: FAA, Mead & Hunt.

2.4 Enplanement Forecast – Socioeconomic Methodology

Socioeconomic enplanement forecasting considers aspects of EUG's service market, such as population, employment and income, and projects EUG activity as a ratio of one of these socioeconomic variables. For this Master Plan Update, the ratio is developed by comparing historic activity to historic population. Socioeconomic projections data was developed independent of this planning process by Woods & Poole, for Lane, Benton, Douglas and Linn Counties.

Table 2-4 presents an enplanement forecast using the socioeconomic methodology, assuming trips per capita will hold steady at the 10-year historical average of 0.5772. Under this methodology, EUG enplanements are projected to increase from 360,258 in 2006, to 383,483 in 2011, to 401,673 in 2016, and to 440,713 in 2026, representing a 1.01% CAGR.



Table 2-4: Enplanement Forecast – Socioeconomic			
Year	Enplanements	Population	Per Capita
Historic			
1997	383,890	597,721	0.6423
1998	370,850	601,954	0.6161
1999	355,992	603,858	0.5895
2000	376,522	605,090	0.6223
2001	364,049	606,426	0.6003
2002	312,735	612,143	0.5109
2003	301,339	617,663	0.4879
2004	347,672	620,258	0.5605
2005	360,049	626,936	0.5743
2006	360,258	634,421	0.5679
Projection			
2011	383,483	664,400	0.5772
2016	401,673	695,914	0.5772
2026	440,713	763,553	0.5772
CAGR 1997-2006	-0.70%		
CAGR 2006-2026	1.01%		

Sources: Woods & Poole, Mead & Hunt

2.5 Enplanement Forecast – Method Comparison and Preference

Table 2-5 and Graph 2-1 present a comparison of the passenger enplanement forecasts using the various methods. The market share method projects an increase of 2.21% CAGR. The socioeconomic method projects the least increase of 1.01% CAGR. The TAF increase of 1.81% CAGR is between the two. Table 2-5 also shows the difference in the two new forecasts compared with the TAF. As shown, the Market Share forecast exceeds the TAF by 7% in the first five years, by 5% in the first 10 years, and by 8% in the 20-year horizon. The Socioeconomic forecast is nearly the same as the TAF in the first five years, 5% below the TAF in the first 10 years, and 14% below the TAF over the 20-year period.

A linear trend method, which projects future enplanements based on historic enplanements, was considered but did not produce a reliable trend to project and therefore was not used. The reason for the unreliability of forecasts using this method is that the recent history has been volatile in the airline/airport businesses, largely due to the terrorist attacks on September 11, 2001. Following those attacks, all airports were closed for a brief period and it took many years to restore public confidence in the aviation system. Many airports, including Eugene, were affected by these events in terms of reduced traffic.

These methods can be refined, and other methods exist. However, the methods which were used produce forecasts which are sound and attainable, and are reliable and sufficient from which to select a preferred method.



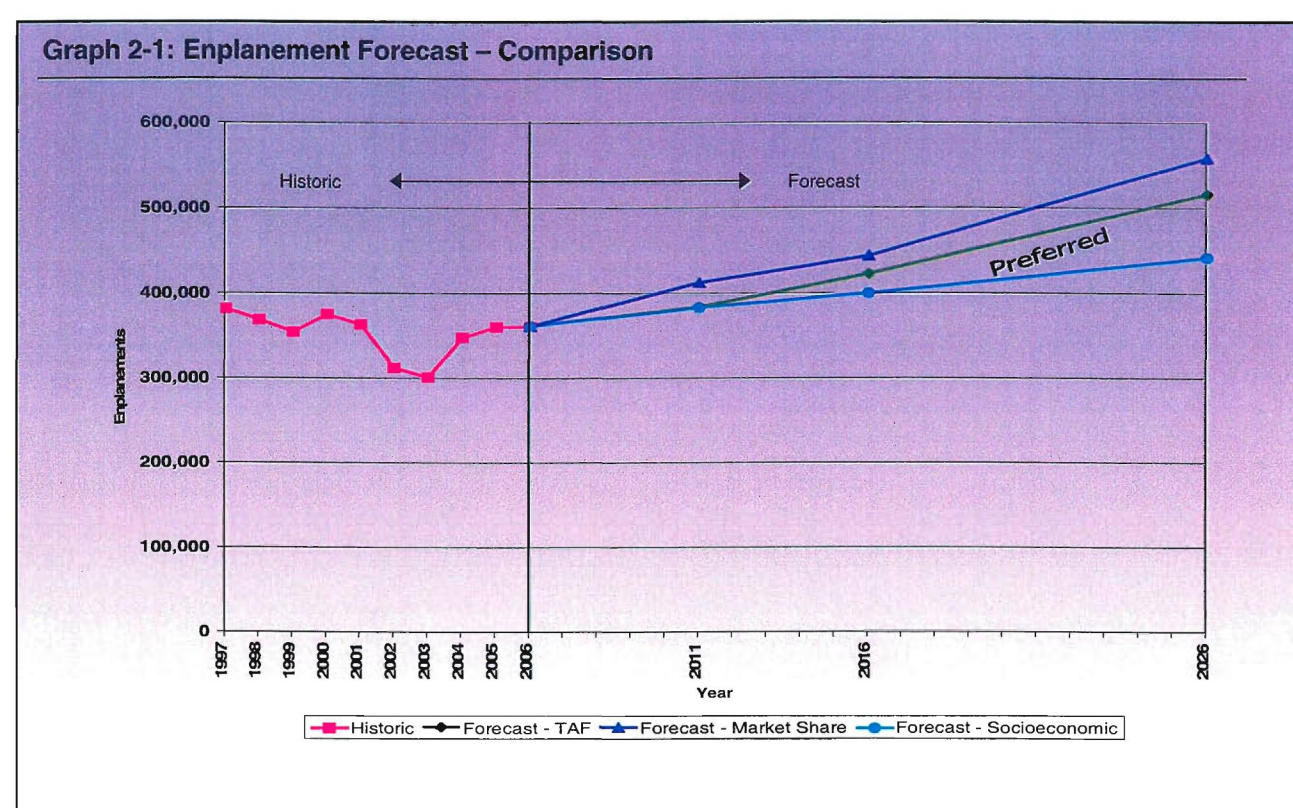
The market share method gives the preferred forecast. Even though it is the most aggressive of the three forecasts, it reflects more closely a combination of positive national trends in the commercial aviation business, and the fact that the City will continue to work aggressively to provide the community with good local air service.

Table 2-5: Enplanement Forecast – Comparison

Year	Historic	FAA TAF	Market Share	Market Share/ TAF (% of Difference)	Socio- economic	Socio-economic/ TAF (% of Difference)
Historic						
1997	383,890					
1998	370,850					
1999	355,992					
2000	376,522					
2001	364,049					
2002	312,735					
2003	301,339					
2004	347,672					
2005	360,049					
2006	360,258					
Projection						
2011 (base year + 5)		384,483	412,873	7%	383,483	0%
2016 (base year + 10)		423,873	445,593	5%	401,673	-5%
2026 (base year + 20)		515,379	557,736	8%	440,713	-14%
CAGR 1997-2006	-0.70%					
CAGR 2006-2026		1.81%	2.21%		1.01%	

Sources: FAA, Mead & Hunt





2.6 Contingency Planning Scenario

For long-range strategic planning purposes, a contingency demand scenario was defined. This scenario, which is not part of the official forecast to be used for traditional 20-year planning, serves to estimate additional future demand, factoring in additional capture of passenger diversion (to airports in other markets) and the air service initiatives the City continues to pursue. The demand/capacity and facility requirements analysis components of this master planning process will incorporate both the preferred 2026 projection of 557,736 annual enplanements, as well as a contingency demand scenario of 700,000 annual enplanements. There is no timeframe established for this demand level; rather, it is intended to allow the airport operator to do some contingency planning in case demand grows faster than projected. In terms of assumptions, the difference of approximately 142,000 enplanements represents seven daily flights by typical regional aircraft flying at an 80% load factor.

Planning of certain airport facilities (such as the terminal area) based on the latter number should be characterized as strategic in nature, recognizing that uncertainty exists in the future.



3. Aircraft Operations

Aircraft operations are the activity of moving aircraft in the EUG vicinity, including departing and arriving aircraft. Observed operations data is provided to Airport management by EUG's airport traffic control tower (ATCT), which maintains data as it communicates and controls aircraft in EUG's vicinity. Operations are categorized into commercial service, general aviation (GA), and military. Commercial service includes commercial passenger and cargo. Operations are also categorized into local and itinerant. Local operations are performed in local traffic patterns within site of the Airport, or in local practice areas within 20 miles of the Airport. Itinerant operations are non-local. Commercial carrier operations are itinerant. Military operations are 59 percent itinerant, and 41 percent local (although none are based at the airport). GA operations are 54 percent itinerant, and 46 percent local. There is no expected change in itinerant vs. local operations at EUG, and therefore these averages will be maintained for forecasting.

3.1 Aircraft Operations History

Table 2-6 shows historical aircraft operations. There were 112,643 operations at EUG in 1997, which fell to 92,779 in 2006. Commercial operations, averaging 28 percent of total EUG operations, fell from 28,256 in 1997 to 24,777 in 2006. GA operations, averaging 70 percent of total EUG operations, fell from 81,722 in 1997 to 66,185 in 2006. Military operations, averaging 2 percent of total EUG operations have varied over the past 10 years from a low of 989 to a high of 2,665.

Year	Commercial	GA	Military	Total
1997	28,256	81,722	2,665	112,643
1998	28,361	78,052	1,995	108,408
1999	29,379	82,017	1,944	113,340
2000	32,602	75,632	2,263	110,497
2001	30,836	70,138	2,445	103,419
2002	24,500	68,620	993	94,113
2003	26,373	63,340	989	90,702
2004	28,166	62,626	1,001	91,793
2005	26,225	61,096	1,704	89,025
2006	24,777	66,185	1,817	92,779
CAGR 1997-2006	-1.45%	-2.32%	-4.17%	-2.13%

Source: Airport management records



3.2 Aircraft Operations Forecast – FAA TAF

The FAA monitors and projects activity levels at the nation's airports, generates estimates of future demand levels, and makes this data available in the TAF.

Table 2-7 shows FAA TAF operations. The TAF projects EUG operations to increase, from 92,779 in 2006, to 97,284 in 2011, 102,571 in 2016, and 112,632 in 2026, a 0.97 percent CAGR. Commercial operations are projected to increase from 24,777 in 2006, to 25,731 in 2011, to 26,961 in 2016, to 29,653 in 2026, a 0.90 percent CAGR. General Aviation operations are projected to increase from 66,185 in 2006, to 69,790 in 2011, to 73,847 in 2016, to 81,216 in 2026, a 1.03 percent CAGR. Military operations are projected to remain at 1,763 through 2026.

One of the reasons for a positive forecast is the introduction of a new aircraft type, very light jets, into the GA mix. Hundreds of these airplanes are on order, with deliveries starting in 2007.

Year	Commercial	GA	Military	Total
Historic				
1997	28,256	81,722	2,665	112,643
1998	28,361	78,052	1,995	108,408
1999	29,379	82,017	1,944	113,340
2000	32,602	75,632	2,263	110,497
2001	30,836	70,138	2,445	103,419
2002	24,500	68,620	993	94,113
2003	26,373	63,340	989	90,702
2004	28,166	62,626	1,001	91,793
2005	26,225	61,096	1,704	89,025
2006	24,777	66,185	1,817	92,779
Projection				
2011	25,731	69,790	1,763	97,284
2016	26,961	73,847	1,763	102,571
2026	29,653	81,216	1,763	112,632
CAGR 1997-2006	-1.45%	-2.32%	-4.17%	-2.13%
CAGR 2006-2026	0.90%	1.03%	N/A	0.97%

Source: FAA

3.3 Aircraft Operations Forecast – Alternative Methodology: Aircraft Fleet

This section presents an alternative methodology for projecting commercial aircraft operations at EUG, and blends that number with the TAF numbers for GA and military components. Under this methodology, the projected number of commercial aircraft operations is estimated by taking the projected enplanement numbers, and dividing by a factor that incorporates the average number of seats per airplane and the



load factor. This calculation gives us the number of commercial departures, which we then double to account for an equal number of arrivals.

The major assumptions related to the fleet (average seats) include data showing that the airlines operating at EUG (namely SkyWest and Horizon Air) are retiring the older, smaller turboprop aircraft, in favor of newer, larger regional prop and jet aircraft.

Aircraft such as the Embraer 120 (30 seats) and the Dash 8-200 series (37 seats) will be replaced by regional jets in the 50-, 70-, and 90-seat ranges, as well as the Dash 8-Q400 (a 70-seat turboprop). Fleet

Year Projection	Seats Per Aircraft				
	50	70	90	Total	Average
2011	40%	40%	20%	100%	66
2016	35%	45%	20%	100%	67
2026	25%	50%	25%	100%	70

Source: Mead & Hunt

changes by regional/commuter carriers are anticipated to increase the average number of seats per departure at the Airport. The assumptions made in determining the average number of seats per departure are shown in **Table 2-8**, incorporating various percentages of 50-, 70-, and 90-seat aircraft based on airline orders for such aircraft, and the anticipated utilization of them in the EUG market. These ranges represent the various general sizes of regional aircraft, although some specific models vary from the actual numbers used in our assumptions.

Historic load factors at the Airport for the past two years are shown in **Table 2-9**. Load factors have climbed to this level of just under 80%, and it is estimated that the airlines may squeeze a bit more capacity out of their seats (thus slightly higher load factors are assumed for the projection years).

Historical and projected data for commercial aircraft operations at EUG are presented in Table 2-9. As shown in Table 2-9, based on the projected enplanements, average seats per departure, and load factor, scheduled passenger departures are expected to decrease from 12,389 in 2006 to 9,960 in 2026. Total operations (double the departures number) are projected to decrease from 24,777 in 2006 to 19,920 in 2026.



Table 2-9: Operations Forecast – Alternative Methodology: Aircraft Fleet					
Year	Enplanements	Average Seats Per Aircraft	Load Factor	Departures	Operations
Historic					
1997	383,890			14,128	28,256
1998	370,850			14,181	28,361
1999	355,992			14,690	29,379
2000	376,522			16,301	32,602
2001	364,049			15,418	30,836
2002	312,735			12,250	24,500
2003	301,339			13,187	26,373
2004	347,672			14,083	28,166
2005	360,049	36	77%	13,113	26,225
2006	360,258	37	79%	12,389	24,777
Projection					
2011	412,873	66	70%	8,937	17,874
2016	445,593	67	75%	8,868	17,736
2026	557,736	70	80%	9,960	19,920
CAGR					
1997 – 2006	-0.70%				-1.45%
CAGR					
2006 – 2006	2.21%				-1.09%
<i>Sources: Mead & Hunt, USDOT T-100 data</i>					

3.4 Operations Forecast – Method Comparison and Preference

Table 2-10 presents a comparison of operations forecasts for the two methodologies. As shown, the TAF is more aggressive, with operations projected to increase from 92,779 in 2006 to 112,632 in 2026. Operations under the Alternative Methodology are projected to increase from 92,779 in 2006 to 102,179 in 2026. The alternative methodology is recommended since it incorporates some additional data into the analysis that relates to aircraft size changes that are highly probable. The preferred forecast assumes that, with this assumption more people will be moved on fewer flights.



	Actual 2006	2011	Projected 2016	2026
TAF				
Commercial	24,777	24,798	25,731	29,653
GA	66,185	66,393	69,790	81,216
Military	1,817	1,763	1,763	1,763
Total	92,779	92,954	97,284	112,632
Alternative Methodology				
Commercial	24,777	15,640	16,422	19,200
GA	66,185	66,393	69,790	81,216
Military	1,817	1,763	1,763	1,763
Total	92,779	83,796	87,975	102,179
Alt. Method/TAF (% Difference)	NA	-10%	-10%	-9%

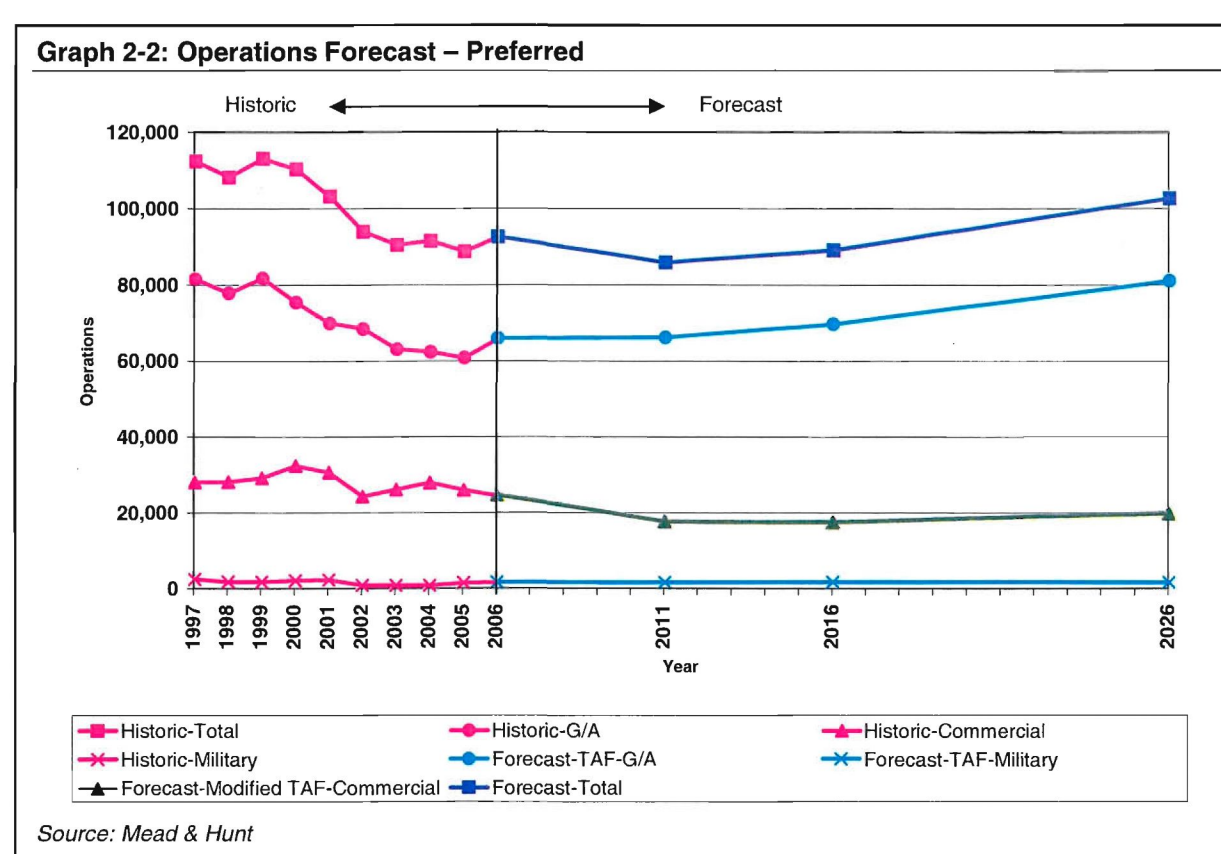
Sources: FAA, Mead & Hunt

Table 2-11 and Graph 2-2 show total operations using the preferred methods.

Year	Commercial	GA	Military	Total
Historic				
1997	28,256	81,722	2,665	112,643
1998	28,361	78,052	1,995	108,408
1999	29,379	82,017	1,944	113,340
2000	32,602	75,632	2,263	110,497
2001	30,836	70,138	2,445	103,419
2002	24,500	68,620	993	94,113
2003	26,373	63,340	989	90,702
2004	28,166	62,626	1,001	91,793
2005	26,225	61,096	1,704	89,025
2006	24,777	66,185	1,817	92,779
Projection				
2011	17,874	66,393	1,763	86,030
2016	17,736	69,790	1,763	89,289
2026	19,920	81,216	1,763	102,899
CAGR 1997-2006	-1.45%	-2.32%	-4.17%	-2.13%
CAGR 2006-2026	-1.09%	1.03%	N/A	0.52%

Source: Mead & Hunt





4. Based Aircraft

Based aircraft are aircraft originating and terminating round-trip travel at EUG and stored at EUG on a semi-permanent basis. Most based aircraft are registered locally, and most are stored in hangars, with some on ramps. Based aircraft include GA aircraft and charter commercial passenger service aircraft. Scheduled commercial service passenger aircraft and cargo aircraft are not based at EUG, even though they may be serviced and stored overnight at the Airport. There are no military aircraft based at EUG. Aircraft at EUG for long-term service and maintenance are not considered based, nor are aircraft located at EUG but not current for operation.

Observed based aircraft data is provided by Airport management, and reflected on the FAA's 5010 form, which the FAA maintains as it provides annual inspection of the airport, documenting airfield facilities and features in the 5010. Having actual historical data instead of estimates instills confidence in using the base data for forecasting.

Based aircraft presented in this Master Plan Update are categorized as single-engine piston (single), multi-engine piston (multi), turbine engine (jet), and helicopter (rotor), as these types of aircraft compose the primary mix of aircraft based at EUG. Other based aircraft, not in these categories, account for 2 percent of based aircraft, and that rate will be maintained for forecasting.



4.1 Based Aircraft History

There were 169 based aircraft in 1997, and documents show the total has risen to 220 (Year 2000), and has fallen to 178 (Year 2006). **Table 2-12** shows based aircraft history.

4.2 Based Aircraft Forecast – FAA TAF

The FAA monitors and projects activity levels at the nation's airports, and makes this data available in the TAF. The FAA TAF projects EUG based aircraft to increase from 178 in 2006, to 205 in 2011, to 209 in 2016, and to 220 in 2026, representing a 1.06 percent CAGR. **Table 2-13** shows FAA TAF based aircraft.

Year	Single	Jet	Multi	Rotor	Other	Total
Historic						
1997	141	4	22	2	0	169
1998	141	4	22	2	0	169
1999	155	19	32	14	0	220
2000	155	19	32	14	0	220
2001	133	13	20	10	0	176
2002	131	9	20	13	0	173
2003	130	8	20	13	0	171
2004	139	21	15	7	1	183
2005	145	28	14	7	4	198
2006	138	17	11	9	3	178
Projection						
2011	150	29	14	8	4	205
2016	153	29	14	9	4	209
2026	159	30	14	13	4	220
CAGR 1997-2006	-0.24%	17.44%	-7.41%	18.19%	N/A	0.58%
CAGR 2006-2026	0.71%	2.88%	1.21%	1.86%	1.45%	1.06%

Source: FAA

Year	Based Aircraft
1997	169
1998	169
1999	220
2000	220
2001	176
2002	173
2003	171
2004	183
2005	198
2006	178
CAGR 1997-2006	0.58%

Source: Airport management records



4.3 Based Aircraft Forecast – Socioeconomic Methodology

Socioeconomic forecasting considers aspects of EUG's service market, such as population, employment and income, and projects EUG activity as a ratio of one of these socioeconomic variables. For this Master Plan Update, the ratio is developed by comparing historic activity to historic population. Socioeconomic projections data was developed independent of this planning process by Woods & Poole, a census information company.

Socioeconomic forecasting projects EUG based aircraft to increase from 178 in 2006, to 201 in 2011, to 211 in 2016, and to 232 to 2026, representing a 1.32 percent CAGR. EUG historical based aircraft rose and fell. However, EUG's service market historic population increases steadily. This difference between the data sets may not provide the strongest correlation, but the method does provide an appropriate forecast. **Table 2-14** shows projected based aircraft using the socioeconomic methodology.

Table 2-14: Based Aircraft Forecast – Socioeconomic Methodology			
Year	Based Aircraft	Population	Based Aircraft Per Capita
Historic			
1997	169	597,721	0.000283
1998	169	601,954	0.000281
1999	220	603,858	0.000364
2000	220	605,090	0.000364
2001	176	606,426	0.000290
2002	173	612,143	0.000283
2003	171	617,663	0.000277
2004	183	620,258	0.000295
2005	198	626,936	0.000316
2006	178	634,421	0.000281
Projection			
2011	201	664,400	0.000303
2016	211	695,914	0.000303
2026	232	763,553	0.000303
CAGR 1997-2006	0.58%		
CAGR 2006-2026	1.32%		
<i>Source: Mead & Hunt</i>			



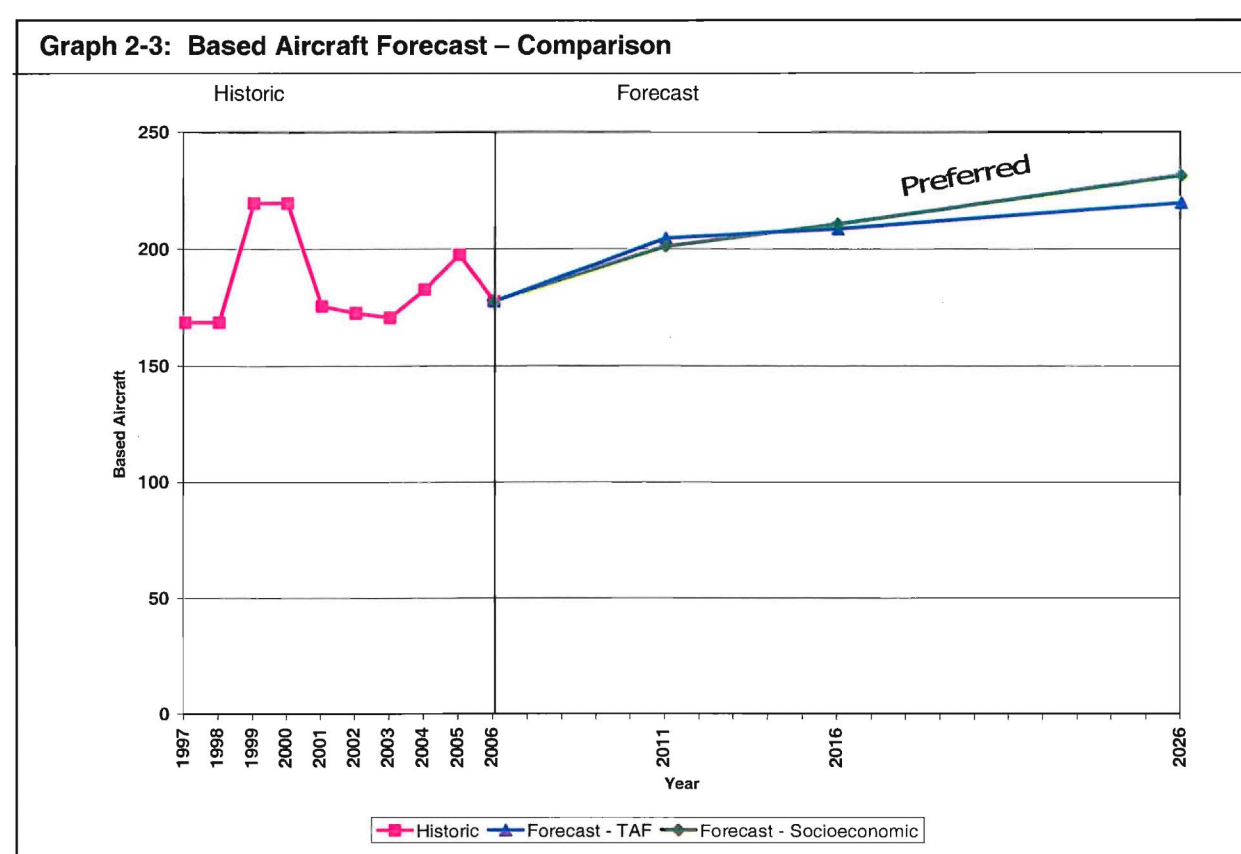
4.4 Based Aircraft Forecast – Method Comparison and Preference

Table 2-15 and **Graph 2-3** show a comparison of based aircraft methodologies. As shown, the TAF indicates growth in based aircraft from 178 in 2006 to 220 in 2026, while the socioeconomic method produces a forecast indicating growth in based aircraft from 178 in 2006 to 232 in 2026. The preferred methodology is the FAA Terminal Area Forecast. We believe the TAF for based aircraft is a good reflection of national trends for general aviation growth. The socioeconomic methodology produces a slightly higher based aircraft projection, but we are less confident in population growth being a strong indication of buying airplanes.

Year	Historic	FAA TAF (Preferred)	Socioeconomic	
			Forecast	Socio/TAF (% Difference)
Historic				
1997	169			
1998	169			
1999	220			
2000	220			
2001	176			
2002	173			
2003	171			
2004	183			
2005	198			
2006	178			
Projection				
2011		205	201	-2%
2016		209	211	1%
2026		220	232	5%

Source: Mead & Hunt





4.5 Critical Aircraft

The critical, or design aircraft, is defined as the most demanding aircraft that operates at an airport on a regular basis. Typically, an aircraft must conduct 500 or more annual operations to be considered the critical aircraft. The design aircraft for EUG through the 20-year planning period is the Boeing 737-500. This is the same aircraft stated in the current Master Plan Update (and on the approved ALP) as the design aircraft. Since the airfield has been built to this design standard, it is considered logical to not change it at this time.

The FAA organizes airport design standards by Airport Reference Code (ARC) and the ARC is defined based on the airport's design aircraft. The ARC incorporates characteristics of the most demanding aircraft that operates at an airport on a regular basis and includes the following two components: Aircraft Approach Category and Airplane Design Group. The aircraft approach category, denoted by letter, represents the operational approach speed characteristics of the critical/design aircraft. The airplane design group, denoted by Roman numeral, is based on the wingspan and relates to the physical characteristics of the critical/design aircraft. The ARC for the Boeing 737-500, EUG's critical aircraft, is C-III, based on an approach speed of 140 knots and a wingspan of 94.8 feet.



5. Air Cargo

Air cargo includes goods and products being transported by aircraft through EUG. Air cargo is carried both by commercial passenger service carriers (in non-passenger cabin areas of aircraft) and by commercial air cargo service carriers (which serve no passengers).

Air cargo can be categorized into mail and freight. Mail cargo is transported by arrangement with the commercial carrier and the United States Postal Service. Freight cargo is non-mail cargo. Mail cargo passing through EUG has declined from 43 percent of total cargo in 1998, to no mail cargo in 2006. With the additional security screening criteria established by the Department of Homeland Security over the past several years, many air carriers have slowed or ceased moving air mail. As such, mail cargo will not be evaluated.

Historical data is provided to airport management by commercial carriers, who maintain data as they transport cargo at EUG. The following section presents historical data on air cargo, and forecasts using socioeconomic data and industry outlook information from The Boeing Company.

5.1 Air Cargo History

Table 2-16 presents historical air cargo data. As shown, there were 2,974,533 lbs. of cargo in 1997, rising to a high of 3,974,273 lbs. in 2000, and falling to a low of 2,091,057 lbs. in 2002, and totaling 2,096,778 lbs. in 2006. Overall, air cargo has declined over the past 10 years.

EUG's decrease in enplaned freight can be attributed in part to the replacement of the large aircraft used by major and national commercial carriers, which previously served EUG, with the commuter aircraft used by regional commercial carriers, which currently serve EUG. Commuter aircraft have less room for cargo than large aircraft, leading to decreasing enplaned cargo at EUG.

5.2 Air Cargo Forecast – Boeing Trends

The Boeing Company's *World Air Cargo Forecast* publication is a source of air cargo evaluation and projection, giving trends that can be applied to EUG to provide a forecast of local cargo activity.

Boeing shows that nationwide, air cargo experienced a downturn in 2001, recovered from 2002 to 2004, and declined in 2005 to below Year 2000 levels. Express cargo accounted for 60 percent of activity, scheduled freight 20 percent, scheduled mail 15 percent, and charter 5 percent. Air cargo is forecasted by Boeing to increase 3.9% from 2006 through 2015, and 3.8 percent from 2006 through 2025.

Year	Enplaned Cargo (lbs.)
1997	2,974,533
1998	3,556,740
1999	3,974,273
2000	3,710,254
2001	2,231,811
2002	2,091,057
2003	2,563,256
2004	2,239,204
2005	2,385,207
2006	2,096,778
CAGR 1997-2006	-3.81%

Source: Airport management records



Table 2-17 shows projections of cargo using the growth rates estimated by The Boeing Company. Applying these growth rates to EUG, this projects an increase from 2,096,778 lbs. in 2006 to 2,538,810 lbs. in 2011, to 3,068,410 lbs. in 2016, and to 4,416,957 lbs. in 2026, representing a 3.80 percent CAGR.

5.3 Air Cargo Forecast – Socioeconomic Methodology

Projections of air cargo demand, using a socioeconomic methodology, considers aspects of the Eugene service market, such as population, employment and income, and projects air cargo activity as a ratio of one of these socioeconomic variables. For this Master Plan Update, the ratio is developed by comparing historic activity to historic population. Socioeconomic projections data was developed independent of this planning process by Woods & Poole, a census information company.

Table 2-18 presents projections of air cargo activity using the socioeconomic methodology. Under this methodology, air cargo is projected to increase, from 2,096,778 lbs. in 2006 to 3,027,282 lbs. in 2011, to 3,170,874 lbs. in 2016, and to 3,479,066 lbs. in 2026, representing a 2.56 percent CAGR.

Year	Enplaned Cargo (lbs.)	Annual Change
Historic		
1997	2,974,533	
1998	3,556,740	19.6%
1999	3,974,273	11.7%
2000	3,710,254	-6.6%
2001	2,231,811	-39.8%
2002	2,091,057	-6.3%
2003	2,563,256	22.6%
2004	2,239,204	-12.6%
2005	2,385,207	6.5%
2006	2,096,778	-12.1%
Projection		
2011	2,538,810	3.9%
2016	3,068,410	3.7%
2026	4,416,957	3.7%
CAGR 1997-2006	-3.81%	
CAGR 2006-2026	3.80%	

Sources: The Boeing Company, Mead & Hunt



Year	Enplaned Cargo (lbs.)	Population	Per Capita
Historic			
1997	2,974,533	597,721	4.98
1998	3,556,740	601,954	5.91
1999	3,974,273	603,858	6.58
2000	3,710,254	605,090	6.13
2001	2,231,811	606,426	3.68
2002	2,091,057	612,143	3.42
2003	2,563,256	617,663	4.15
2004	2,239,204	620,258	3.61
2005	2,385,207	626,936	3.80
2006	2,096,778	634,421	3.31
Projection			
2011	3,027,282	664,400	4.56
2016	3,170,874	695,914	4.56
2026	3,479,066	763,553	4.56
CAGR 1997-2006	-3.81%		
CAGR 2006-2026	2.56%		

Source: Mead & Hunt

5.4 Air Cargo Forecast – Method Comparison and Preference

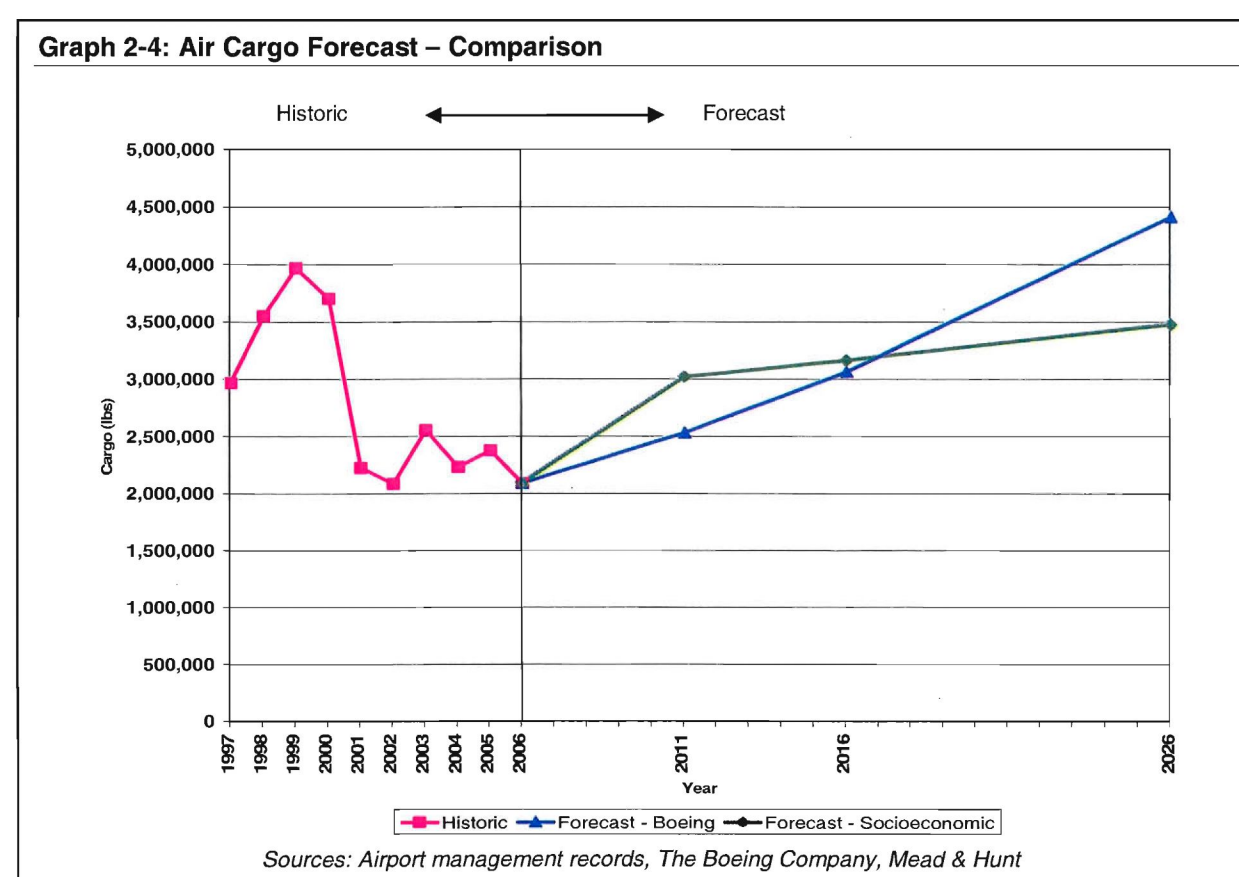
Table 2-19 and Graph 2-4 present a comparison of projected air cargo activity based on the two different methodologies.

The Boeing method gives the preferred forecast. Boeing's information is considered extensive and well-based, and is generally accepted by the aviation industry. Although higher than the socioeconomic forecast, the Boeing air cargo projections are in line with what is expected at EUG. This is further justified by improvements being made at the Airport to support additional air cargo activities more efficiently.

Year	Historic	Boeing	Socio-economic
Historic			
1997	2,974,533		
1998	3,556,740		
1999	3,974,273		
2000	3,710,254		
2001	2,231,811		
2002	2,091,057		
2003	2,563,256		
2004	2,239,204		
2005	2,385,207		
2006	2,096,778		
Projection			
2011		2,538,810	3,027,282
2016		3,068,410	3,170,874
2026		4,416,957	3,479,066
CAGR 1997-2006	-3.81%		
CAGR 2006-2026		3.80%	2.56%

Sources: The Boeing Company, Mead & Hunt





Improvements to EUG's air cargo facility are underway, including a new structure, expanded ramp, and eased ground access to aircraft. This will consolidate air cargo from three different sites around the airfield into one centralized location. This will also accommodate an increased number of aircraft, and increased size of aircraft. Future limitations on EUG's cargo activity will likely be based on factors other than the cargo facility. It is expected that this enhancement of air cargo handling and processing will attract air cargo operations previously served by other nearby airports. It is also expected that this facility's modernization and efficiency will encourage those using other methods of transportation, such as road and rail, to move local cargo by air at EUG. These factors support a more aggressive forecast.

6. Peak Aviation Demand Characteristics

When projecting future activity levels at an airport, it is also important to identify and project peak period activity levels. These projections are important for various facility planning purposes. Since EUG, similar to many commercial service airports, must be designed to accommodate peak demand in some categories, these projections are important to subsequent facility planning tasks. Peaking characteristics are developed for passenger enplanements and aircraft operations using the following methodologies:

- Monthly enplanement and operations data, supplied by the Airport's Air Traffic Control Tower, are analyzed to determine peak month percentages relative to the year's total activity.



- The analysis indicated that the peak month for passenger enplanements, historically August, consists of 31 days. The various components of Airport operations have historically peaked in different months during the year, generally ranging from April to November. For planning purposes, it is assumed that the peak month for Airport operations also consists of 31 days. To derive peak month average day (PMAD) estimates for the various demand components at the Airport, peak month estimates are, therefore, divided by 31.
- Peak hour percentages are then applied to projected PMAD estimates to derive peak hour operational levels. The following section documents peak hour demand factors as they relate to passenger enplanements and aircraft operations at EUG.

Peak aviation demand numbers are presented in **Table 2-20**.

Table 2-20. 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

Source: Mead & Hunt, Inc. - 2007



7. Projection Summary

Table 2-21 presents a summary of aviation demand projections for EUG. Included in this projection summary are passenger enplanements, aircraft operations, based aircraft, and air cargo.

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
CAGR 2006- 2026	2.21%	0.52%	1.1%	3.8%

Note: CAGR = Compounded annual growth rate
Source: Mead & Hunt, Inc.



**Demand/Capacity Analysis and
Determination of Facility Requirements**

This chapter of the Eugene Airport Master Plan Update identifies airside and landside facility requirements. These requirements are identified by comparing the Airport's capacity or its ability to accommodate demand, to the Airport's demand levels and are analyzed in the following sections.



- Airfield Demand/Capacity Analysis
- Airfield Facility Requirements
- Passenger Terminal Facility Requirements
- Air Cargo Facility Requirements
- General Aviation Facility Requirements
- Fixed Base Operator (FBO) and Tenant Facility Requirements
- Support Facility Requirements
- Surface Transportation and Auto Parking Requirements
- Utilities

In certain functional/analytical areas, where the results from the 2000 Master Plan Update (2000 MPU) are still relevant, reference is made to that planning document reflecting such.

1. Airfield Demand/Capacity Analysis

Airfield capacity is defined as the maximum number of aircraft operations that an airfield configuration can accommodate during a specified interval of time, when there is a continuous demand for service (i.e., an aircraft is always waiting to depart or land). This definition is referred to as the ultimate capacity or the maximum throughput rate. The methodology used in this Master Plan Update focuses on annual service volume (ASV), which is used by the FAA as a quantifiable measure of operating capacity. The calculation and analysis of ASV is an important tool in the short- and long- range planning process at the Airport.

The recent reconfiguration of the airfield, from one with two runways that crossed each other, to a parallel configuration, results in a significant increase in annual capacity. According to FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, a parallel runway system with spacing of 4,300 feet between runways has a capacity of approximately 320,000 annual aircraft operations.¹ Based on projected aircraft operations of approximately 103,000 in 2026, approximately one-third of the airfield's capacity is expected

¹ This number assumes a mix of Class C & D aircraft of between 21 and 50 percent of operations.
Eugene Airport Master Plan Update
(February 2010)



to be used in the long-term. Average aircraft delay for long-range planning is negligible – well under one minute. Based on this analysis, the airfield has adequate capacity to handle operations on a long-term basis.

Additional airfield planning, however, will explore the value of possibly adding acute-angle exit taxiways to the runway/taxiway system as more of a safety measure (to more rapidly get airplanes off the active runway).

2. Airfield Facility Requirements

Airfield facility requirements were developed for each of the Airport's following functional areas:

- Airfield Layout
- Design Standards
- Runway Length
- Runway Width
- Pavement Strength
- Taxiway System
- Airfield Safety Areas
- FAR Part 77 Surfaces
- Navigational Aids

2.1 Airfield Layout

Since the 2000 MPU, the airfield has been reconfigured to a parallel runway system, giving EUG the airfield capacity to accommodate projected aircraft operational demand through 2026.

2.2 Design Standards

Important factors in the design and planning of an airport include the role of the airport, as well as the operating requirements of the critical aircraft that use that facility. The FAA provides guidance for planning and design through FAA Advisory Circulars, which promote safety, economy, efficiency, and longevity of airport facilities.

For planning and design purposes, it is necessary to establish design standards applicable to operations and development at EUG. FAA Advisory Circular 150/5300-13, *Airport Design*, gives direction on determining the Airport Reference Code (ARC). The ARC is a coding system used to relate airport design criteria to the operational and physical characteristics of aircraft intended to operate at the airport.

The ARC has two components. The first component, depicted by a letter, represents the aircraft approach category, as defined by the aircraft approach speed. The second component, depicted by a Roman numeral, represents the airplane design group, as defined by the aircraft wingspan and tail height. Generally, aircraft approach speed relates primarily to runways and related facilities, while aircraft wingspan and tail height relate primarily to separation criteria involving runway, taxiways, and structures.



The Design Aircraft for Eugene is the Boeing 737-300, which has an ARC of C-III. Although currently not as common at EUG as in the past, the Boeing 737 has long been used as the critical design aircraft for EUG. The current air carriers at EUG use smaller regional jet aircraft. However, as the 737 remains a popular and abundant commercial aircraft in the United States, and as it has been the standard for so many of the airfield improvements, the 737 will continue to be used as the critical design aircraft at EUG. Lowering the design standards to satisfy only the current smaller aircraft would significantly limit EUG's ability to accommodate a nationally common commercial service aircraft.

As the ARC for EUG is C-III, other aircraft with an ARC of C-III operate at the airfield. The commercial passenger aircraft operating at EUG include the Q200 (C-III), Q400 (C-III), CRJ-200 (C-II), CRJ-700 (C-II), and EMB120 (B-II). Although EUG's ARC is C-III, the larger Boeing 757, having an ARC of C-IV, can (and does) operate at EUG on an infrequent basis.

2.3 Runway Length

Runway length requirements are determined by analyzing the needs of the airport's most demanding (current or projected) aircraft in the operational fleet. The recommended length for the primary runway is determined by considering a specific airplane that is forecast to use the runway on a regular basis or by considering a family of aircraft having similar performance characteristics. FAA standards consider the threshold to be at least 500 operations per year. Departures are considered in the runway length analysis since they typically require more runway length than landings.

Runway length requirements vary among aircraft. Generally, larger aircraft with faster speeds, longer wingspans, and greater weights require greater field lengths. Each aircraft operator and company has additional considerations to determine required runway length, including length of haul, percent of maximum loading, aircraft performance, pilot procedure, airport elevation, and ambient temperature. As these factors vary among aircraft operators, general runway lengths for common passenger and cargo aircraft are presented in **Table 3-1**.

As variations on these and other aircraft exist, which require other lengths, specific aircraft operators with specific aircraft types and requirements proposing to operate EUG should be considered individually to determine the adequacy of EUG's runway length.

Specific calculations for EUG's design aircraft, Boeing 737-300, show that 8,000 feet is required for a B737-300 operating at maximum take-off weight (see 2000 MPU for full analysis which remains relevant). However, similar calculations show that 9,000 feet is required for a B737-400 and B737-500 aircraft at maximum take-off weight. The length of primary Runway 16R/34L is 8,009 feet, and the length of parallel Runway 16L/34R is 6,000 feet. The number of (current and projected) aircraft needing longer than 8,009 feet is well under the required 500 operations per year. However, this should be regularly re-evaluated to monitor aircraft changes and potential need.



Table 3-1: Runway Length Data

Aircraft	Take-off Field Length	Landing Field Length	Airport Reference Code (ARC)
Airbus A300-600	7,600	4,700	C-IV
Airbus A310-300	7,400	4,950	D-IV
Airbus A319	4,800	4,700	C-III
Airbus A320	5,900	4,800	C-III
Airbus A321	7,100	5,200	C-III
Airbus A330-300	8,700	5,873	D-IV
Boeing 727	10,000	5,300	C-III
Boeing 737-300	6,500	4,580	C-III
Boeing 737-400	7,350	4,880	C-III
Boeing 737-500	5,880	4,450	C-III
Boeing 737-600	5,900	4,400	C-III
Boeing 737-700	5,500	4,700	C-III
Boeing 737-800	7,350	5,450	C-III
Boeing 737-900	7,900	5,450	C-III
Boeing 747-400	9,950	7,150	D-V
Boeing 757-200	7,700	5,100	C-IV
Boeing 757-300	8,650	5,750	C-IV
Boeing 767-300	7,550	5,200	C-IV
Boeing 767-400	10,850	6,250	C-IV
Boeing 777-200	8,450	5,100	D-V
Boeing DC-9-40	7,410	4,070	C-III
Boeing DC-9-50	8,300	4,230	C-II
Boeing DC-10-15	7,270	5,940	D-IV
Boeing DC-10-30	10,340	5,970	D-IV
Boeing MD-81	6,150	5,080	C-III
Boeing MD-82	7,550	5,300	C-III
Boeing MD-83	8,100	5,800	C-III
Boeing MD-87	6,100	5,080	C-III
Boeing MD-88	6,650	5,400	C-III
Boeing MD-90-30	6,500	4,565	C-III
Bombardier CRJ200	6,290	4,850	C-II
Bombardier CRJ700	6,072	5,119	C-II
Bombardier CRJ705	6,379	5,321	C-II
Bombardier CRJ900	6,379	5,321	C-II
Bombardier Q200	3,280	2,560	C-III
Bombardier Q300	3,870	3,415	C-III
Bombardier Q400	4,265	4,221	C-III
Embraer EMB120	5,118	4,528	B-II
Embraer ERJ135	5,770	4,460	C-II
Embraer ERJ140	6,070	4,530	C-II
Embraer ERJ145	7,450	4,590	C-II
Embraer ERJ170	5,220	4,180	C-III
Embraer ERJ175	5,690	4,300	C-III
Embraer ERJ190	6,913	4,567	C-III
Embraer ERJ195	7,386	4,708	C-III
Raytheon Beech 1900	3,813	2,790	B-II
Saab 340	3,830	2,413	B-II

Source: Aviation Week & Space Technology – 2006 Source Book



Runway 16R/34L's 8,009 feet is adequate to accommodate the aircraft types and categories of operations projected through 2026. However, the ability to lengthen Runway 16R/34L to meet the needs of aircraft in the projected fleet, operating at greater stage lengths, should be preserved. Accordingly, the Airport Layout Plan represents an ultimate Runway 16R/34L length of 9,200 feet. The need to improve runway length beyond 8,009 feet will be determined by the evolving operating fleet and passenger markets served by the air carriers.

2.4 Runway Width

The standard runway width for Design Group III aircraft with a maximum takeoff weight greater than 150,000 lbs. is 150 ft. The 150 ft width of both Runway 16R/34L and Runway 16L/34R is adequate to accommodate the aircraft types and categories of operations projected through 2026.

2.5 Runway Pavement Strength

Runway pavement strength at Eugene Airport is defined for single wheel, dual-wheel, and dual tandem aircraft wheel gear configurations. An aircraft's wheel gear configuration dictates how the aircraft's weight is distributed to the pavement, and determines pavement response to loading. The factors of gear configuration, tire contact areas, and tire pressure relate pavement strength to aircraft maximum takeoff weight. The March 15, 2007 FAA Airport/Facility Directory recurring publication lists EUG's runway weight bearing capacity as:

Weight bearing capacity		
Gear Configuration	Runway 16R/34L	Runway 16L/34R
Single Wheel (S)	75,000	105,000
Dual Wheel (D)	200,000	175,000
Dual Tandem (DT)	400,000	240,000

The weight bearing capacity of both Runway 16R/34L and Runway 16L/34R is adequate to accommodate the aircraft types and categories of operations projected through 2026.

2.6 Taxiway System

The standard taxiway width for Design Group III aircraft is 50 ft. Most taxiways at EUG are 75 ft, which allows them to handle B757 charter operations and other larger aircraft that occasionally use the Airport. Access taxiways with widths less than 50 ft exist, but they serve areas for smaller aircraft. As taxiways are improved and constructed, they should have the width of the taxiways to which they connect, and should also consider the size of aircraft intended to use the taxiway.

2.7 Design Surfaces

The FAA defines design surfaces, each having specific applicability, dimensions standards and use restrictions, which evolve as the FAA identifies nationwide issues with each surface. The FAA defines these design surfaces in Advisory Circulars, primarily in AC 5300-13, *Airport Design*. Design surfaces include Runway (& Taxiway) Safety Area, Runway (& Taxiway) Object Free Area, Object Free Zone, Runway Protection Zone, and Runway End Siting Requirement Surfaces. These surfaces are identified and evaluated on the Airport Layout Plan.



EUG continually works to meet the standards and maintain the requirements of these surfaces, reviewing criteria and compliance as part of annual FAA inspections. Airport improvement projects are designed and implemented to the most current standards.

2.8 FAR Part 77 Surfaces

Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*, establishes airspace around an airport, and the standards for determining objects as hazards to air navigation, termed "obstructions". Potential obstructions include terrain and natural growth features, towers, structures, and construction equipment (permanent or temporary).

Under FAR Part 77, an aeronautical study can be undertaken by the FAA to determine if an object is a hazard to air navigation. However, there is no authorization permitting the FAA to limit object heights, or determine which objects should be lighted or marked. In an aeronautical study determination, the FAA acknowledges that state or local officials have control over the appropriate use of property beneath an airport's airspace.

Airspace around an airport is defined by several imaginary surfaces, as defined in FAR Part 77. As these imaginary surfaces are intersecting and inter-related, the most restrictive surface controls the permissible height of an object underneath multiple surfaces. These FAR Part 77 surfaces are identified and evaluated on the Airport Layout Plan. There are no FAR Part 77 obstructions.

EUG continually works to meet the standards and maintain the requirements of these surfaces. Airport improvement projects are designed and implemented to the most current standards.

2.9 Navigational Aids (NAVAIDs)

NAVAIDs provide guidance to pilots and aircraft during flight planning and operation. The type, mission, and volume of aeronautical activity, in association with airspace, meteorological conditions, and capacity data, determine the need and eligibility for NAVAIDs. NAVAID requirements are based on recommendations contained in FAA Handbook 7031.2, *Airway Planning Standard Number One*, and FAA Advisory Circular 150/5300-13, *Airport Design*. Three categories of NAVAIDs are discussed in the following sections.

Terminal Area NAVAIDs

Terminal area NAVAIDs provide control to aircraft to maintain an orderly flow of air traffic, prevent aircraft incursion, and support maneuvering. EUG's terminal area NAVAIDs include the Airport Traffic Control Tower (ATCT), Cascade Terminal Radar Approach Control (TRACON), Cascade Air Route Traffic Control Center (ARTCC), and Airport Surveillance Radar (ASR). These facilities are owned and operated by the FAA, and operate in the FAA office, located near the passenger terminal. The ASR is located west of Runway 16R/34L.

The ATCT controls aircraft on and in the vicinity of the airfield, the TRACON controls arrivals and departures, and the ARTCC provides enroute control. Pilot communication and control is transferred among these facilities during the different phases of flight. The ASR scans 360 degrees to identify air



traffic within 60 nautical miles of the Airport, to provide more precise handling of aircraft in the immediate vicinity of EUG.

EUG also has a VHF Omni-Directional Range/Tactical Air Navigation (VORTAC) system. Located west of Runway 16R/34L, the VORTAC is used by pilots accessing EUG, and by those flying over at higher altitudes.

Other terminal area electronic NAVAIDs exist to provide instruction and weather information to pilots. The Automated Terminal Information Service (ATIS) broadcasts verbal instruction, notice, and weather information to pilots as they operate on the ground, taxiing between runways and terminal areas. The weather information is provided by the Automated Surface Observation System (ASOS) and Stand Alone Weather Sensor (SAWS) system, both located along Runway 16R/34L.

Electronic Approach NAVAIDs

Electronic approach NAVAIDs assist aircraft executing an instrument approach procedure. An instrument approach is a series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from enroute or local flight to a point from which landing may be made visually.

The availability of instrument approach procedures permits aircraft landings during periods of limited visibility. The extent to which approach minimums, in terms of ceiling and visibility, can be lowered is dependent on instrumentation available upon which the approach procedure may be developed, and on obstructions in the approach and/or missed approach areas. Instrument approaches can be restricted to certain aircraft and flight crews which have been certified to conduct the procedure with appropriate equipment.

The distinction between a precision and a non-precision approach procedure is that a precision approach provides the pilot with electronic glide slope (descent) and distance information, while a non-precision approach does not offer glide slope and may or may not offer distance information. Safety considerations and an airport's operational role determine whether the degree of approach capability.

All runway ends at EUG have at least a non-precision approach procedure. Runway 16L has a Category I instrument landing system (ILS), providing a precision approach procedure, with the ability to land with a decision height as low as 200 ft, and visibility not less than ½ mile. Runway 16R has a Category III-B ILS, providing a precision approach procedure, with the ability to land with no decision height and a runway visual range not less than 600 ft. This instrument approach capability minimizes the times that the airport must close due to poor visibility and adverse weather conditions.

These approach procedures and instrumentation are expected to be sufficient for operations at EUG through 2026. However, consideration should be given to implementing new technologies and procedures as they are developed and introduced to the aviation system.



Visual NAVAIDs

Visual NAVAIDs provide pilot guidance once the aircraft is within sight of the airport, and they aid aircraft maneuvering on the ground. EUG's visual NAVAIDs include:

- Runway 16R
 - High Intensity Approach Light System w/Sequenced Flashing Lights, Category II Configuration (ALSF2)
 - 4-light Precision Approach Path Indicator (PAPI), 3° glide path
 - Touchdown zone lights (TDZL)
 - Precision marking
- Runway 34L
 - Omni-Directional Approach Lighting System (ODALS)
 - 4-box Visual Approach Slope Indicator (VASI), 3° glide path
 - Precision marking
- Runway 16L
 - Medium Intensity Approach Light System w/Runway Alignment Indicator Lights (MALSR)
 - Glideslope, 3° glide path
 - 4-light PAPI, 3° glide path
 - Precision marking
- Runway 34R
 - Runway End Identifier Lights (REIL)
 - 4-light PAPI, 3° glide path
 - Precision marking
- Runway 16R-34L
 - Centerline lights (CL)
 - High Intensity Runway Lighting (HIRL)
 - Medium Intensity Taxiway Lights (MITL)
 - Runway Visible Range (RVR) - 3
- Runway 16L-34R
 - HIRL
 - MITL
- Airport
 - Rotating Beacon
 - Taxiway Centerline Reflectors
 - Lighted wind indicators
 - Segmented circle

Once the VASI on Runway End 34L has reached its economical and functional life, it should be replaced with a PAPI, as is a nationwide FAA trend.



Automatic Dependent Surveillance–Broadcast (ADS-B) is a new technology involving traveiving of navigational data signals among aircraft, satellite, and ground-based systems. This technology is being implemented in the Eugene area, and is expected to significantly enhance aircraft navigation.

These navigational aids are expected to be sufficient for all-weather operations at EUG through 2026. As future flight technologies and equipment are developed and implemented, and traditional navigational aids are phased out of service, EUG should make the appropriate airfield and airspace upgrades to accommodate the latest flight procedures, and provide increased and more efficient access and service to airport users.

3. Passenger Terminal Facility Requirements

The 2000 MPU included a detailed space program effort for the passenger terminal building and it was decided to not redo that in this plan. Within the context of this Master Plan Update, passenger terminal facility requirements are addressed to include the following:

- Long-term terminal building expansion
- Near-term terminal building improvements
- Baggage security screening improvements

3.1 Long-Term Terminal Building Expansion

Long-term expansion of the passenger terminal building (on both the north and south ends of the terminal, as well as the arms of the concourse) is anticipated to follow patterns established in the 2000 MPU.

3.2 Near-Term Terminal Building Improvements

There are several enhancements to the passenger terminal building that would enhance the operational efficiency of the Airport and add needed facilities. Airport Administration desires to be located within the terminal building for customer service and other reasons related to efficiency. It would also make sense for TSA to relocate from its temporary facilities into the terminal building. And finally, an additional bag claim device should be added since there is currently only one and the airport has no backup. Each of these items could be easily accommodated by adding a southern extension to the terminal building, south of the current bag claim area. It may make sense for a multi-story addition to be placed in this area to accommodate all of these functions, and possibly include some space for public meeting rooms and for leasing to FAA or other tenants. Finally, space should be set aside for someday creating an emergency response center. Sizing and options for providing these facilities will be documented in Chapter Four, *Alternative Plan Concepts*.

3.3 Baggage Security Screening Improvements

This Master Plan Update project includes a task to develop alternative plan concepts for relocating the TSA baggage screening equipment and operations to accommodate a new in-line system using CT-80



scanning machines. Alternatives for providing this will be presented in Chapter Four, *Alternative Plan Concepts*.

4. Air Cargo Facility Requirements

Improvements to EUG's air cargo facility are underway, including a new structure, expanded ramp, and eased ground access to aircraft. This will consolidate air cargo from three different sites around the airfield into one location, accommodate an increased number and size of aircraft, and provide a location for charter aircraft boarding.

The new facility is located southeast of Runway End 34L, near the primary runway, and away from other airport operations - currently the location of an existing cargo apron. The cargo apron is being expanded from 13,067 sq yd, accommodating seven smaller aircraft, to 26,133 sq yd, accommodating seven larger aircraft. The apron will accommodate aircraft up to a Boeing 757.

The cargo operations are being centralized from around the airfield into a new building. The building will be home to cargo air carriers (UPS, FedEx, and DHL), passenger carriers with cargo (Alaska/Horizon), Lawrence Air Service FBO, and the Transportation Security Administration (TSA) cargo screening, which processes cargo before it is loaded onto aircraft. The 11,600 sq ft building has landside access for trucks and airside access for aircraft, bridged by secure bays for handling, sorting, and loading. The building is expected to accommodate the anticipated increase in TSA's security process and requirements, and likely an additional cargo carrier business.

The facility will also accommodate charter passenger loading/unloading from ground transportation, through processing, and aircraft - a service provided by Lawrence Air Service.

Ground transportation allows for circulation from Airport Road to the northern passenger area, and to the cargo handling area. There are loading docks for eight trucks on the east, and employee parking for approximately 20 automobiles on the north.

Future limitations on EUG's cargo activity will likely be by factors other than the cargo facility. It is expected that this enhancement of air cargo handling and processing will attract air cargo operations previously served by other nearby airports. It is also expected that this facility's modernization and efficiency will encourage those using other methods of transportation, such as road and rail, to move local cargo by air at EUG.

The site and apron can accommodate an expansion to this building, automobile parking, and truck loading, and also additional buildings. Consideration should be given to development of this area for future cargo and charter operations. This site is expected to accommodate cargo operations thru 2026.



5. General Aviation Facility Requirements

General aviation facility requirements have been developed for the following functional areas:

- Based Aircraft Storage
- Transient Aircraft
- General Aviation Automobile Parking

5.1 Based Aircraft Storage

Storage needs for general aviation aircraft typically depend on local weather conditions and the size and sophistication of the based aircraft fleet. Higher valued aircraft are more likely to be stored in larger, more secure conventional (box) hangars, and lower valued aircraft likely stored in smaller T-hangars, or tie-down on unsheltered ramps.

Through discussion with the Airport, FBO's, and tenants, an inventory of aircraft storage availability and occupation was assembled, and is presented in **Table 3-2**. Inventory assumptions include: each box holds one aircraft; box hangars are occupied.

Location	Based	Tie-Down Positions		Box Hangars		T-Hangar Units	
	Aircraft	Available	Occupied	Available	Occupied	Available	Occupied
North Ramp		61	6	10		57	
South Ramp		68	3	23		59	
Lane Aviation		15	13				
East Ramp		0	0	3		14	
Hollis Lane Area		0	0	1		0	
Total	178	144	22	37	37	130	119
Distribution			12%		21%		67%

Of the 178 based aircraft in 2006, 156 (88%) are stored in hangars, and 22 (12%) on the ramps. Of the aircraft stored in hangars, 119 (76%) are stored in T-hangars, and 37 (24%) are stored in box hangars. Total percentage of aircraft storage distribution is 12% on ramp, 21% in box hangars, and 67% in T-hangars. Variations on this distribution applied to the forecasted number of based aircraft at EUG results in the storage requirements presented in **Table 3-3**.

Year	Total Based Aircraft	Aircraft Storage Distribution		
		Tie-Downs	Box Hangars	T-Hangars
2006	178	22	37	119
2011	205	23	45	137
2016	209	23	48	138
2026	220	24	57	139



The existing tie-downs for 144 aircraft are sufficient to meet the expected 24 ramp-based aircraft in 2026. As the south ramp FBO and old ATCT area is reconfigured, consideration should be given to the abundance of existing tie-downs, and whether that is the best use of that apron. The East General Aviation Ramp (EGAR) has no tie-downs, but does have an aircraft parking area. Although it would likely not be required for capacity, but instead for convenience, consideration should be given to installing tie-down parking on the EGAR. The Hollis Lane Aviation area has no tie-downs, nor parking apron, as this area is to be developed with larger corporate aviation facilities.

The existing 37 box hangars are expected to need to be increased to 57 to accommodate based aircraft in 2026, as anticipated aircraft trends, such as Very Light Jets (which do not fit in standard T-hangars), are expected to drive demand. Both EGAR and Hollis Lane areas can accommodate additional box hangars. EGAR has two box hangar sites reserved or under development by a tenant, and Hollis Lane has one. Other sites should be considered.

The existing 130 T-hangar units are expected to need to be increased to 139 to accommodate based aircraft in 2026. The EGAR area has sites available for T-hangars. Consideration should be given to the appropriate size of aircraft to be housed, which will affect the size, spacing, and location of the T-hangars.

Each new development should consider the structure and ancillary facilities, including as airside/landside access, aircraft/automobile circulation and parking, aircraft/building separation standards, airport traffic control tower (ATCT) visibility, gates and fencing, and utility connection.

5.2 Transient Aircraft Storage

Transient aircraft are attracted to an airport by public events, tourist activities, business, and the availability of aircraft maintenance and FBO services. Transient ramp areas are used for loading and unloading passengers, for short-term parking utilizing the airport facilities, or for long-term parking for visitors or aircraft maintenance.

For general aviation aircraft, transient storage is provided by aircraft tie-downs. With a 1997-2006 average of 54% itinerant general aircraft operations, averaged to give daily transient aircraft at EUG, **Table 3-4** gives anticipated future general aviation aircraft storage demand.

Year	General Aviation Operations		Tie-Down Positions	
	Total	Itinerant	Required	Available
2006	66,185	35,740	49	122
2011	66,393	35,852	49	121
2016	69,790	37,687	52	121
2026	81,216	43,857	60	120

Source: Mead & Hunt

The available tie-downs are based on the 2006 tie-down inventory of 144, less those based aircraft using tie-downs. Even with the assumption that 100% of transient aircraft overnight at EUG (which is not the case), the existing tie-downs are expected to be sufficient through 2026. This does not consider



particular events resulting in peak transient aircraft parking. Although it would likely not be required for capacity, but instead for convenience, consideration should be given to installing tie-down parking on the EGAR.

Transient aircraft parking for passenger aircraft is provided at the terminal passenger gates. Transient aircraft parking for cargo and charter aircraft is provided in front of the cargo facility. A change in operations resulting in significant increase number or frequency of transient aircraft storage should prompt consideration of additional storage sites and facilities.

5.3 General Aviation Automobile Parking

There are approximately 223 automobile parking spaces near general aviation and FBO hangars, to accommodate general aviation patrons.

It is common for some general aviation patrons to park their automobiles in their aircraft hangar while flying their aircraft, which effectively limits the demand for landside automobile parking. However, this is not considered in the determination of general aviation parking requirements, nor is it recommended, as it can lead to fire code issues.

The FAA recommends that one automobile parking space be provided for 400 general aviation operations. With 66,000 GA operations in 2006, and 81,000 projected in 2026, the 223 automobile parking spaces available for general aviation are expected to be adequate.

However, as new structures and facilities are developed, consideration should be given to the convenience of existing parking, and whether additional parking should be provided based on issues related to proximity.

Heavy Aircraft Parking

Much of the general aviation aircraft at EUG can be accommodated by the weight bearing capability of the airport's pavements. As heavier corporate and general aviation aircraft have become more common at EUG, pavement areas have been improved. There are three areas designated to serve heavier corporate and general aviation: one on the south ramp, near Flightcraft, and two on the north ramp, near Friendly Air Service. These areas have been strengthened for heavy aircraft parking, but the connecting pavements, for aircraft taxi and ground movement, are not necessarily able to support the increased loading. As pavements are rehabilitated, consideration should be given to the adequacy of their weight bearing capability. And, as heavier corporate and general aviation aircraft become more common at EUG, consideration should be given to strengthening the taxiway, taxilane, and parking areas intended to accommodate these aircraft.

Corporate and General Aviation Areas

Because of the difference in aircraft size, maneuvers, and movement frequency, it is common practice to separate commercial, cargo and corporate/general aviation aircraft. EUG has several airfield locations to serve corporate and general aviation.



North and South Ramps

The north and south ramps have long been home to corporate and general aviation. These areas are substantially developed, serving FBO's, tenants, and transient aircraft. Both ramps have box hangars, T-hangars, heavy aircraft parking areas, aircraft parking with tie-downs, and mobile fueling service. The south ramp is expected to become fully developed with the anticipated developments of Flightcraft and LAA. The north ramp is expected to become fully developed with the anticipated re-development of the old ATCT and Friendly Air Service facilities. Consideration should be given to the efficient layout of areas of increased pavement strength for heavy aircraft, and for the continual modernization of airport facilities in these areas.

East General Aviation Ramp

The East General Aviation Ramp (EGAR) is located on the east side of the airport, west of Taxiway B, at the north end of Northrop Drive. EGAR is east of the Airport terminal area, with ground access by entry from the south. Since the airfield reconfiguration with Runway 16L/34R, EGAR has become more prominent, as it is located adjacent to the parallel runway. EGAR is home to box hangars and T-hangars, and a self-fueling facility. EGAR has the ability to accommodate additional FBO, corporate and general aviation development. Consideration should be given to the efficient layout for future development, including concerns about ATCT visibility requirements.

Hollis Lane Aviation Area

The Hollis Lane Aviation Area is located on the north side of the Airport, north of Taxiway C, at the south end of Hollis Lane. The Hollis area is not contiguous to the Airport terminal area, and landside access is by entry from the north. Since the airfield reconfiguration with Runway 16L/34R, the Hollis area has become more prominent, as it is located in the central airfield, and provides proximity to both runways. The Hollis area is home to Airport maintenance and snow removal equipment storage, corporate hangars, and an on-airport business. The Hollis area has the ability to accommodate development of airport maintenance, corporate and general aviation, fueling and FBO service, and on-airport business facilities. Consideration should be given to the efficient layout for future development, so that facilities requiring airside access are appropriately sited among those with other needs.

Together, these areas have the ability to meet the corporate and general aviation demand expected at EUG through 2026.

6. FBO and Tenant Facility Requirements

EUG depends on the FBO and tenants, and intends to accommodate them as they operate and develop. The following were contacted regarding their expected facility requirements.

6.1 Flightcraft Services

Flightcraft Services operates on the south ramp in a 20,700 sq ft facility. Flightcraft expects to break ground in 2007 on a 3,600 sq ft Business Aviation Terminal, connecting to the west side of their existing hangar. In 2008, they expect to follow up with a 24,000 sq ft hangar, for larger aircraft, connecting to



south side of the Business Aviation Terminal. The aircraft parking ramp and tie-downs near the hangar are owned by EUG, with fees collected by Flightcraft. Flightcraft makes extensive use of the ramp near its hangar, to accommodate service to customers.

Flightcraft Services has installed a self-service fuelling facility on the EGAR, and indicated they would consider developing an additional FBO facility to serve that area, as need arises.

6.2 Friendly Air Service

Friendly Air Service (FAS) operates on the north ramp in a 3,600 sq ft hangar and 2,000 sq ft office. Aircraft parking ramp and tie-downs near the hangar are owned by EUG, with fees collected by FAS. FAS has four aircraft, based on the tie-down parking area. As their current facility has reached the end of its useful life, FAS plans within the next 3-4 years to abandon their current facility and relocate to a new 6,000 sq ft hangar and 2,000 sq ft office. A new larger facility will accommodate increased and larger aircraft. FAS plans to operate out of their current facility until the new facility is operational, as to have no disruption in operations.

As most of the facilities in the north ramp frontal area, including the old airport traffic control tower, Friendly Air Service and Airport maintenance building, have reached the end of their useful economic life, the Airport plans to re-develop the north ramp area to better accommodate more modern facilities.

6.3 Heli-Trade

Heli-Trade operates on the south ramp in a 6,400 sq ft hangar, with adjacent 1,200 sq ft of outdoor storage north of their building. Heli-Trade uses ramp space in front of their building, and helipads located in the northwest part of the airfield. Heli-Trade expects to soon add 3,600 sq ft of adjacent outdoor storage on the north side of their building. Heli-Trade's current location is sufficient for their operations, but relocation to another part of the airfield would be considered if expansion could not be accommodated at their current location, or if their current location was desired by another entity, or for another purpose. Also, as run-ups are performed on the helipads and south ramp, another site would be needed if the helipads went away.

6.4 Lawrence Air Service

Lawrence Air Service expects that their recent relocation from the old ATCT building, northeast of the terminal, to the newly constructed Air Cargo facility, near Runway End 34L, will accommodate their facility operation and service requirements for the foreseeable future.

6.5 Lane Aviation Academy

The Lane Aviation Academy (LAA) operates out of a 3-building office/classroom cluster in the north area, and a 2-building maintenance/return-to-service cluster in the south area, both located at the west end of Airport Road. LAA also has aviation program facilities on the main Lane Community College (LCC) campus. However, LAA is vacating its facilities on the main LCC campus, moving the aviation program entirely to the Airport complex, and expanding the education program. All improvements are expected to occur without modification to the Airport's existing security/fencing configuration.



The south area consists of a 21,600 sq ft hangar, and a 3,780 sq ft hangar. The smaller hangar was recently acquired as ATCT visibility forced relocation of this building from the northern ramp area. LAA expects to increase the smaller hangar to 11,000 sq ft within two years. To accommodate aircraft maintenance, LAA also expects to add aircraft parking ramp and tie-downs for 12 aircraft to the south and west of the larger hangar.

The north area consists of a western office/classroom building (owned by the City), a middle office/classroom building, and an eastern flight technology/maintenance building, all connected by breezeways. LAA expects to add a 1,600 sq ft single story building, north of the middle building, within six years. The existing aircraft parking ramp and tie-downs have capacity for 15 aircraft located north of the buildings. This is sufficient as LAA has 13 based aircraft, all stored on the ramp, and their aircraft fleet is not expected to exceed 15.

6.6 Oregon Air and Space Museum

The Oregon Air & Space Museum (OASM) operates in the southwest airfield area, in 2 buildings totaling 25,000 sq ft of indoor storage. The facility also includes ramp space used to display aircraft, or to accommodate aircraft temporarily displaced for indoor event. OASM's collection has outgrown their hangars, and more indoor storage is required so additional aircraft can continue to be acquired and displayed.

OASM is considering a new larger 30,000 sq ft facility, housing aircraft and an educational facility, with meeting/class rooms. It is expected that this new facility will be located in the new development areas near Runway 16L/34R. Upon operation of the new facility, the current facility will be abandoned, making the site/facility available for other users/uses.

7. Support Facility Requirements

Requirements of ancillary facilities needed to support Airport operations have been developed for the following.

7.1 Aircraft Rescue and Firefighting

Requirements for aircraft rescue and firefighting (ARFF) facilities at airports with scheduled commercial air service are established in Federal Aviation Regulation (FAR) Part 139. Airports are indexed according to the size of aircraft. The rating at EUG is Index B, serving aircraft up to 126 feet long. This rating is expected to meet EUG's needs through 2026.

ARFF equipment includes an Oshkosh 1,500 gallon pumper, an Oshkosh 3,000 gallon pumper, a 500 gallon Rapid Response Vehicle (RRV), and a disaster trailer equipped with emergency rescue equipment. This equipment meets Index B requirements.

The ARFF facility is located south of the terminal building, adjacent to the ATCT. The facility has three bays to accommodate the ARFF equipment, with sleeping, kitchen, and lounge for facility staff. However, the facility is not configured for gender co-habitation, and as it was operational in the early 1980's, the facility is at the end of its economical and functional life. ARFF vehicles must also meet specified



response times to runways. The current location just barely accommodates the specified response to the newly constructed Runway 16L/34R. A new modern facility, located more central to both runways, is needed to address the issues for both ARFF staff, and ARFF incident response time. The Airport Capital Improvement Program (ACIP) includes a new ARFF facility for 2008, per funding availability.

Although the primary use of the facility is to serve the Airport, the facility should be constructed to allow for possible conversion to joint use, for both Airport and community response, as the need arises. The new location should accommodate the initial facility construction, and also allow for the facility to be expanded.

Relocation of the ARFF facility makes available the existing facility and site for other use, to serve airport/aircraft operations, the adjacent FAA facility, the terminal building/environment (airside or landside), or FBO development.

7.2 Fuel Storage

EUG's fuel storage facility (fuel farm) is located on Lockheed Drive, adjacent to the Airport Administration building. The fuel farm has above ground tank storage for 60,000 gallons of Jet A, and 21,000 gallons of AvGas, and also has an open bay for expanded fuel storage. The fuel is brought onto the airport by tanker trucks traveling on surface roads, and transferred into the fuel farm. Mobile aircraft fueling vehicles draw fuel from the fuel farm, and ferry it to the aircraft on the airfield ramps. There are four mobile fuel vehicles, with a combined capacity of 12,500 gallons. EUG has a 100LL AvGas self-service facility is on the EGAR, from a 6,000 gallon above-ground tank.

The Airport is considering the relocation of the fuel farm, away from the current high traffic entrance to Airport Administration, TSA, FBO, Airport business and hangar area, to a location that can better accommodate ground access/service by delivery trucks, and to a location that can better accommodate expansion. This relocation would make the current site available for other users. The current location has room for an additional 10,000 gallon tank, which would likely be needed sometime during the planning period. If the Airport were to relocate the entire fuel farm, adequate room should be reserved to replicate the current facility, with additional capacity beyond the one – 10,000 gallon space it currently has.

7.3 Airport Maintenance and Snow Removal Equipment Buildings

The Airport maintenance facilities are located in the northern airfield area, north of Taxiway C, known as the Hollis Lane area. The Airport maintenance building is 9,200 sq ft, and houses vehicles and equipment for Airport service and landscaping. The snow removal equipment (SRE) building is 8,400 sq ft, and stores equipment to respond to winter weather. The 3,000 sq ft airfield electrical vault is also located in the maintenance area.

The Hollis Lane maintenance area has the space to accommodate the long-term facility development of Airport maintenance facilities. Consideration should be given to preserving this area for long-term Airport maintenance, and not making the area available for terminal, hangar, or Airport businesses.



As the ARFF operation relocates from their station south of the passenger terminal to a new mid-airfield location, the original ARFF facility will be available for other purposes. Consideration should be given to use of the original ARFF building for airfield maintenance. The three equipment bays would allow for storage and maintenance of Airport vehicles and equipment, and the facility's living quarters could serve airport maintenance personnel during winter weather, when snow removal efforts extend to long hours. Significant airfield maintenance facility development should occur in the Hollis Lane area, but the ARFF station is an available resource that can be easily converted to maintenance service.

Airfield maintenance is also supported by smaller facilities located around the Airport, which will eventually be shifted to the Hollis Lane area. The Hollis Lane airfield maintenance area and facilities are expected to be adequate through 2027.

7.4 Federal Aviation Administration (FAA) Facilities

The FAA facility, located near the passenger terminal, supports air traffic control operations equipment and personnel. Ground access to FAA is via the same route as the traveling public uses to access the passenger terminal. FAA personnel vehicles travel along the terminal entrance road, rental car, parking lots, terminal building, and service entrances to access the FAA facility. This introduces FAA vehicle traffic to the curbside terminal interface area, where passenger/vehicle loading and unloading occurs, which can become congested during peak times of activity. The FAA facility could be more conveniently accessed if served by a more direct route. A direct route would also remove FAA facility traffic from the curbside terminal interface area. While this is not a major issue, consideration should be given to alternative access to the FAA facility, if it can be done economically.

The implementation of a separate roadway would likely require a reconfiguration of the FAA entrance and parking lot, and include a barrier to separate the terminal circuit roadway from this new service road. A direct route connecting the southwestern area of the terminal building to western Airport Road/Boeing Drive could also serve other Airport needs. Deliveries to the terminal area requiring airside access would follow a new direct route, avoiding the curbside terminal interface area.

FAA often receives deliverables via truck/trailer, which might be better served with a new direct access roadway. However, consideration should be given to delivery to FAA from the airside ramp. This would likely require modification to the fence surrounding the FAA facility, to include an additional gate. Although this routine would likely require coordination with Airport security and operations, FAA delivery access by airside would prevent delivery traffic from having to pass thru curbside terminal interface area to reach the FAA facility.

The FAA's on-airport facility is nearing capacity, and additional operational space is needed. The FAA also operates an off-airport facility (in Eugene), which services navigational equipment and facilities located near Eugene. The FAA may consider relocation of this facility to on-airport, to consolidate efforts. Consideration should be given to better accommodation of FAA operations, offices, and equipment maintenance.



7.5 Aircraft De-icing

Aircraft de-icing is a common procedure for maintaining safe cold-weather operations. Proper collection, containment, processing, transfer, disposal, and recycling of the de-icing agent (liquid) are environmental concerns, both locally and nationally. De-icing involves the application of a liquid to the aircraft's exterior by pressurized equipment. At EUG, de-icing is generally not performed at the gate, as de-icing methods are such that liquid overspray is not desired on other vehicles and equipment found near the terminal, nor on the ground (making conditions slippery and resulting in less safe worker conditions). Accordingly, a dedicated containment system should be installed at a designated de-icing area. The proper location of the de-icing area should consider aircraft size, ground movement, taxi routes, adjacent facilities, containment travel route to processing, and siting requirements and location of processing and transfer system.

8. Surface Transportation and Auto Parking Requirements

An analysis of existing surface transportation and auto parking capacity at EUG has been conducted to determine future requirements. The analysis is comprised of the following components:

- Airport Circulation
- Terminal Curbside
- Auto Parking
- Airport Access

8.1 Airport Circulation

The entrance to EUG, and to the Airport's roadway system, is located at the west intersection of Airport Road and Green Hill Road, eight miles northwest of downtown Eugene, where Airport Road from the east connects to Green Hill Road from the south. Continuing on Airport Road becomes Douglas Drive, the main route into the Airport. Douglas Drive becomes a one-way loop road, serving the passenger terminal, public (and overflow) parking, rental car parking and service, ARFF facility, and FAA facility, and connects back to itself.

Douglas Drive also connects to Lockheed Drive and Northrop Drive. Lockheed Drive diverts west from Douglas Road to serve the fuel farm, Airport Administration, TSA, FBOs, employee parking, north corporate and general aviation area, and on-airport businesses. Northrop Drive continues north, as an extension of Douglas Drive, to serve the East General Aviation Ramp (EGAR), and ends at a controlled Airport gate.

From the east intersection of Airport Road and Green Hill Road, where Green Hill Road diverts north from Airport Road, Green Hill Road continues to the north, and connects to Hollis Lane. Hollis Lane diverts south from Green Hill Road, to serve the Hollis Lane Aviation Area. Hollis Lane intersects with Awbrey Lane, which spurs east and west to serve airport maintenance, corporate and general aviation, and on-Airport businesses. Hollis Lane and the Awbrey Road spurs end at controlled Airport gates.

Airport Road diverts west from its intersection with Douglas Drive, to connect to Boeing Drive, the Air Cargo Facility, LAA, and Grumman Drive, and ends at a controlled Airport gate. Boeing Drive diverts



north to serve FBOs, OASM, the south corporate and general aviation area, and on-airport businesses. Grumman Drive diverts north from Airport Drive to serve LAA, the south corporate and general aviation area, and on-airport businesses, and connects to Boeing Drive.

8.2 Terminal Curbfront

The curbf front provides the interface between the terminal and the circulation system. At EUG the curbf front is a linear, single-level system with two through lanes and one curb lane where both arrival and departure activities take place. In advance of the terminal curbf front, there is a single-lane pull-out roadway with parking bays located between the curbf front roadway and the parking areas that is used by taxis, hotel shuttles, and buses.

Demand for terminal curbf front is typically related to annual enplanement levels. Planning standards indicate a ratio of approximately 1,000 annual enplanements per linear foot of curb frontage. With current annual enplanements at approximately 360,000, this ratio indicates that the existing 525 feet of curbf front is adequate at present. However, the annual enplanements are projected to increase to above 525,000 sometime between the 2016 and 2026, indicating a need for some type of improvement. Chapter Four, *Alternative Plan Concepts*, will explore ways of assuring adequate terminal curbf front. This may include a physical expansion of the curbf front, enforcement of dwell times, or other methods for achieving the desired result.

8.3 Auto Parking

EUG automobile parking consists of public, rental car, and employee parking areas. Public parking consists of short- and long-term parking, and remote overflow parking, all accessed by Douglas Drive. Rental car parking consists of separate ready/return and storage/service lots, both accessed by Douglas Drive. Employee parking consists of a dedicated lot for Airport employees, and a lot shared with other Airport services, both accessed by Lockheed Drive.

Public Auto Parking

EUG has a high percentage of originating passengers, most of which use private automobiles instead of public transportation to travel to the Airport, resulting in a demand on Airport public parking.

Public parking areas, accommodating air travel passengers, are located at grade level in front of the terminal building, within the Douglas Drive loop roadway. There are 241 spaces in the short-term lot, located nearest the terminal building, behind the rental car ready/return lot. There are 714 spaces in the long-term lot, located adjacent to the short-term lot. Both lots are filled on a first-come, first-served basis. A remote lot with 585 spaces, located east of Douglas Drive, is provided for overflow from the short- and long-term lots. Use of the remote lot has been increasing steadily, with peaks occurring during holiday seasons. Combined, these lots accommodate 1,540 automobiles.

The number of auto parking spaces needed to accommodate current and projected demand is estimated using a planning ratio relating parking spaces to enplanements. Based on FAA Advisory Circular 150/5360-13, *Planning and Design of Airport Terminal Facilities*, up to 3,300 parking spaces are required per million enplanements. **Table 3-5** presents the expected demand using this rate.



Year	Passenger Enplanements	Public Automobile Parking	
		Required	Available
2006	360,258	1,189	1,540
2011	412,873	1,362	
2016	445,593	1,470	
2026	557,736	1,841	
Contingency	700,000	2,310	

Based on full utilization of the overflow public parking lot, the 1,540 available parking spaces are expected to be sufficient through 2016, but 300 additional spaces are expected to be required by 2026, and 770 additional spaces (beyond the existing number) are required under the Contingency Demand scenario.

As mentioned above, 585 parking spaces (38 percent of the total parking spaces) are located in a remote lot across Douglas Drive. This lot requires the use of a shuttle for passengers to access the terminal. The use of this remote lot during peak periods, winter and spring holidays, has become more common, which indicates that the 955 parking spaces in the main lots close to the terminal are at capacity during those periods. A study of parking records indicates that parking during the peak period is approximately 22 to 25 percent higher than average when the remote lot is being used. Because of the cost of operating the remote lot and its inconvenience to passengers, it is recommended that the parking areas closer to the terminal be expanded so that the use of the remote lot can be limited to periods of peak usage.

Options for providing short- and long-term public auto parking (including possible continued use of an overflow lot), will be explored and considered in Chapter Four, *Alternate Plan Concepts*.

Rental Car Parking

The four rental car agencies operating in the passenger terminal share in the use of the Airport's rental car facilities. Rental car parking is distributed between two functional areas: a ready/return lot and a storage/service lot. The ready/return lot is located across Douglas Drive from the passenger terminal. The storage/service lot is located on the north end of passenger parking, within Douglas Drive loop roadway. There are 144 spaces in the ready/return lot, and 115 spaces in the storage/service lot, which also has service and cleaning facilities. These lots and facilities are well utilized and near capacity, and additional service facilities are desired.

The need for rental cars can be correlated to passenger enplanements, to forecast demand, as shown in **Table 3-6**.



Table 3-6: Rental Car Parking Requirements

Year	Passenger Enplanements	Rental Car Parking			
		Return/Ready		Storage/Service	
		Required	Available	Required	Available
2006	360,258	108	144	144	115
2011	412,873	124		165	
2016	445,593	134		178	
2026	557,736	167		223	
Contingency	700,000	210		280	

Source: Mead & Hunt

The 144 available return/ready spaces are expected to be sufficient through 2016, but 23 additional spaces are expected to be required by 2026, and 66 additional spaces will likely be needed under the Contingency Demand scenario.

The 115 available storage/service spaces are currently insufficient. 29 additional spaces are required today, 108 are expected to be required by 2026, and 165 additional spaces will likely be needed under the Contingency Demand scenario.

Improvements to the ready/return lot should be in the existing location, as it is convenient to pedestrians and vehicles accessing the passenger terminal. As rental car storage/service lots and facilities are added/expanded, consideration should be given to abandoning the current site and relocating them to another part of the airfield that can accommodate their operation and long-term expansion. The south airfield area, along the east-west section of Airport Road, is likely an appropriate site. Relocation of the storage/service lot out of the terminal area will make the site available for public, rental car ready/return, or employee automobile parking.

Options for providing rental car parking will be explored and considered in Chapter Four, *Alternate Plan Concepts*.

Employee Parking

The employee parking area consists of two adjacent lots north of the terminal area, accessed by Lockheed Drive. One lot with 117 spaces is assigned to Airport employees. The second lot has 48 spaces that are used also by Airport Administration, TSA, FBO, north corporate and general aviation area, and on-airport businesses.

It is estimated that a 20 percent increase in employees will be sufficient to meet the needs of the Airport over the study period. An increase in employee parking spaces of 20 percent (for a total of 140 spaces) has been included in the parking requirements for the baseline growth conditions. Since the Airport employee parking area is commonly full, increased parking should be planned for in the near-term.

As the north ramp FBO and old ATCT area is reconfigured for modern facilities and utilization, consideration should be given to the adequacy of the automobile parking in this area.



8.4 Airport Access

Ground access to the Airport is primarily by Airport Road from State Highway 99. Reconfigured as part of Runway 16L/34R improvements, Airport Road becomes Douglas Drive, and connects to Lockheed Drive, Northrop Road, and Airport Road. This network leads into the core of the airfield, providing passengers, pilots, tenants, and employees a direct route to their airport facility. Before this reconfiguration, many stops, starts, and slowed turns were required to reach the airfield. This improvement now provides access to the Airport with no stops for most users. Access to the Hollis Lane area requires travel on Green Hill Road, which was also reconfigured with Airport Road. Traveling north from its intersection with Airport Road, Green Hill Road follows Runway 16L/34R to intersect with Hollis Lane, which accesses the Hollis Lane area, in the northern portion of the airfield. The Airport's new access road system is expected to accommodate vehicle traffic and airport access through the planning period. Alternatives for expanding auto parking, however, may have an impact on the Airport access roadway. Issues related to potential expansion of auto parking and possible impacts on the roadway will be treated in an integral manner in Chapter Four, *Alternate Plan Concepts*.

9. Utilities

One of the tasks in this Master Plan Update is to provide the City of Eugene with consolidated utility maps of the Airport. This is being accomplished as part of an extended inventory effort using a combination of "as-construct" drawings and field verification. The new maps being developed as part of the aerial photogrammetry work also being completed under this Master Plan Update contract will be used as base maps.

The following utilities are addressed in this effort:

- Domestic water
- Sanitary sewer
- Storm drainage
- Natural gas
- Electric
- Telecommunications



Alternative Plan Concepts

This chapter of the Eugene Airport Master Plan Update presents information related to the development and evaluation of alternatives for the improvement of Eugene Airport. It is based on the facility needs documented in Chapter 3, *Demand/Capacity Analysis and Determination of Facility Requirements*.



Presentation and discussion of alternative plan concepts are presented for the following sections:

- Evaluation Criteria
- Airfield Facilities
- Terminal Facilities
- Special Airport Facilities
- Automobile Parking and Circulation
- Airport Property

For some facility requirements identified as being needed for the Airport, there are several alternatives that have been developed for consideration. For other facility needs, there is a single, logical development path outlined. Following are descriptions of the alternative improvement scenarios developed, and advantages of those alternatives.

1. Evaluation Criteria

The airport development scenarios and alternatives are evaluated based on the following criteria:

- The movement of aircraft, both in the air as they arrive and depart runways, and on the ground as they taxi between runways and terminal areas, is a key factor in considering development. Safety to the airport and aircraft is a priority for development. Even some improvements which may not affect aircraft operations may affect visibility requirements.
- The ability of an improvement to be compatible with ongoing airport operations and to be implemented without significant disruption to current airport facilities is also a priority. Long-term compatibility is also a factor, as airport improvements generally take time and several funding cycles to implement, and are often expected to perform their role and provide their service for an extended period. The ability of a facility to be expanded is also considered.



- The accessibility and convenience of airport users, including pilots, passengers, and businesses were evaluated, as these features are important to the perception of the airport. The effects an improvement may have on the environment, and the relative cost of improvement alternatives, are also critical aspects.

Those improvements requiring the selection of a preferred alternative are presented in terms of the advantages and disadvantages of each alternative relative to each other, so their comparison can direct the selection of a proposed action.

2. Airfield Facilities

This section of the document presents discussion and evaluation of various facility needs related to the Airport's airfield facilities, including runway, taxiway, and other movement areas.

The airfield capacity of EUG exceeds the forecasted demand, largely because of the parallel runway configuration, and the extensive taxiway system (see **Exhibit 4-1**). These features have been developed from the implementations of planning, construction, and operational efforts occurring over the life and history of the Airport. Improvements to airfield pavements should be coordinated with Eugene's Airport Control Tower.

2.1 Runways

Runway 16R/34L is currently 8,009 feet, which accommodates aircraft currently operating at EUG and those projected through 2026. However, the ability to extend the runway to 9,200 feet has been developed as part of previous Master Plans, and should continue to be preserved, so that the need can be accommodated once it is justified. This additional length has been shown to be attained by extending the runway south. The southern extension of Runway End 34L is able to be accommodated primarily on land owned by the Airport. Extending south would also prevent the need to relocate the elaborate Category III Instrument Landing System currently serving Runway End 16R.

Runway 16L/34R is currently 6,000 feet, which is the originally constructed length. This 6,000-foot length accommodates the aircraft fleet for which it was intended. However, situations may arise resulting in the primary Runway 16R/34L being offline, and parallel Runway 16L/34R being the only available runway. These situations may be temporary and emergency in nature, or more likely, are to be extended periods necessary to accommodate scheduled maintenance of the primary runway.

Scheduled passenger service aircraft generally operate on primary Runway 16R/34L, due to the runway length, aircraft instrumentation, navigational aids, and proximity to the terminal. Regularly scheduled maintenance to this runway requires adequate time and maneuverability of ground crews and equipment, which is best offered with the runway being closed. The closing of the primary runway forces aircraft traffic to the parallel runway. Because of the shorter length of the parallel runway, not all aircraft are able to operate on the parallel runway under the same conditions as they operate on the primary runway.





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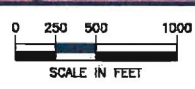


Exhibit 4-1
Runways & Taxiways



The runway length required by aircraft depends on factors such as weather, distance of haul, and weight, which consists of passenger, cargo, and fuel load. Reduction in distance of haul and weight can result in reduction of required runway length. However, airlines have minimum operational policies, and in some cases, do not operate aircraft in certain situations and below certain runway lengths. 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 this runway, and prevent scheduled commercial service from having to cease service at EUG, and divert to other airports.

There are two options to extending Runway 16L/34R: one is to the north, the other to the south. Both options require relocation of existing facilities, and construction of new ones, including 500 feet of runway and extending the connecting taxiway. However, it is expected that the length of 6,500 feet can likely be attained without excessive mitigation or effect on the airport and adjacent facilities.

Runway 16L/34R Extension Alternative 1 (see Exhibit 4-2)

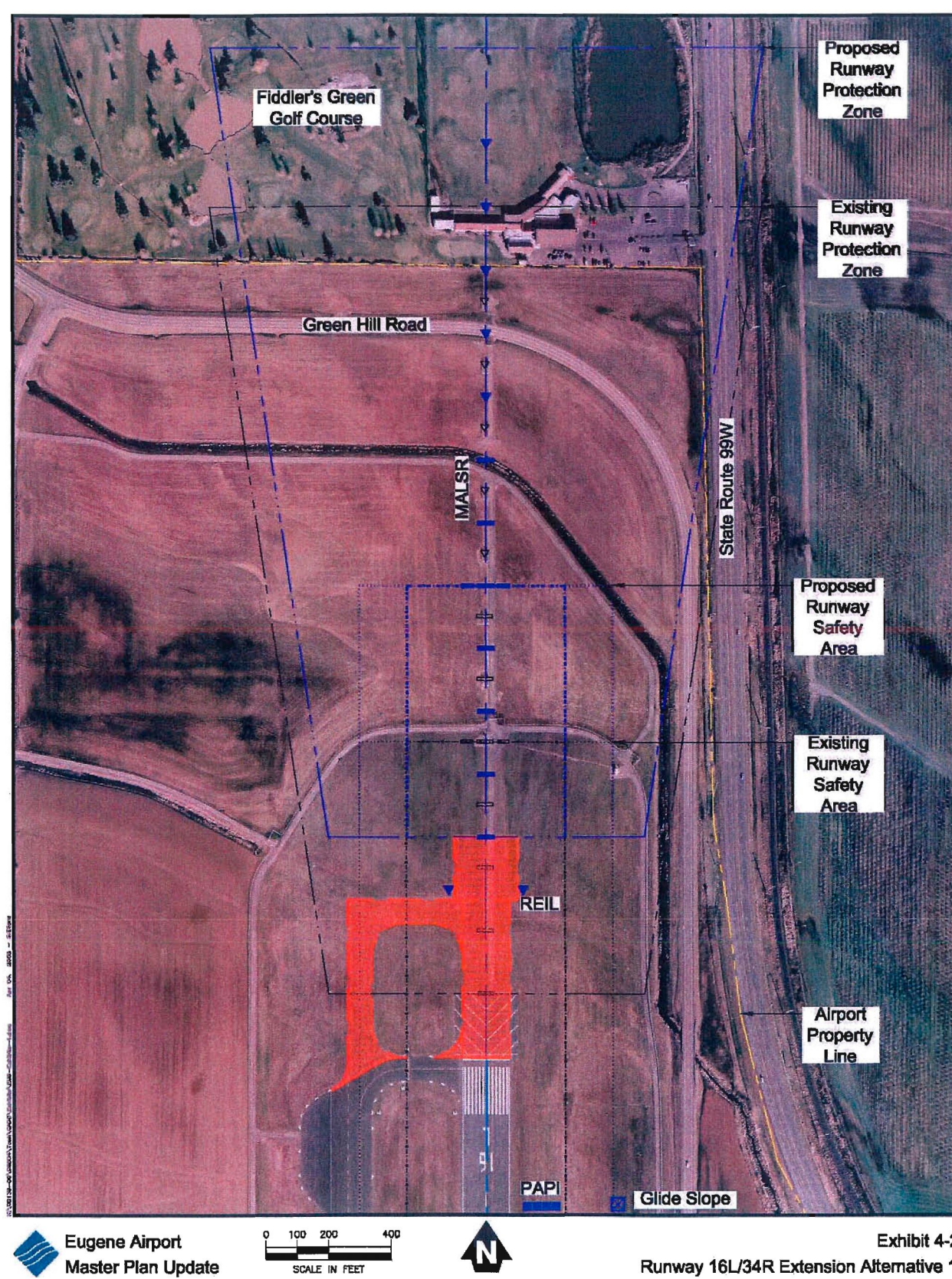
Runway End 16L has a Precision Instrument Approach Procedure, which guides aircraft to the runway end during inclement weather. The navigation and instrumentation is provided to aircraft by an Instrument Landing System (ILS). The ILS consists of an approach light system and two signal transmitting devices (a glide slope and a localizer). These three elements are specifically located relative to the runway end, such that if the runway end is moved, the ILS components must also move. These ILS components have associated critical areas, required to be free of objects that may interfere with the signal transmission and view of lights. Extending Runway End 16L would require the relocation of the approach light system (Medium Intensity Approach Light System with Runway Alignment Indicator Lights (MALSR)) and the glide slope antenna.

The Precision Instrument Approach Procedure is established by the FAA, and disseminated to pilots through recurring FAA publications. If Runway End 16L were to be relocated, the procedure would require adjustment in the FAA's system and the FAA's publications would need to be edited and re-published, so that aircraft would be directed to the new runway end.

As Runway End 16L is extended north, the associated FAA-defined design surfaces also shift north. Several of these surfaces would be contained on airport property, and would likely not be an issue. However, the aircraft approach surface would shift to the north, closer to utility poles and towers along State Route 99, and to those on Fiddler's Green Golf Course. The structures would likely require removal, relocation, or adjustment to provide an unobstructed approach path for aircraft. It is expected that the relocated approach surface would provide adequate clearance over Green Hill Road.

The Precision Instrument Approach Procedure serving Runway End 16L has with it a large Runway Protection Zone (RPZ), another FAA-defined design surface. The RPZ would shift north such that a significant portion of it would encompass Fiddler's Green Golf Course. Although a golf course may under certain situations be considered compatible land use within an RPZ, it is generally desired and advantageous for the airport to control land within the RPZ. This may lead to the acquisition of this property in an effort to maintain safety in the air and on the ground.





Runway 16L/34R Extension Alternative 2 (see Exhibit 4-3)

Runway End 34R has a Non-Precision Instrument Approach Procedure, which guides aircraft to the runway end during bad weather, but not to minimums as low as those provided by the ILS on Runway End 16L. The procedure serving Runway End 34R is not associated with on-field navigational aids, signal transmitters, or lighting systems. However, one component of the ILS serving Runway End 16L is located adjacent to Runway End 34R, and would require relocation if Runway End 34R were to be relocated.

The Non-Precision Instrument Approach Procedure serving Runway End 34R is also managed by the FAA in the same manor as the procedure serving Runway End 16L. If Runway End 34R were to be relocated, the procedure would require adjustment and edit, so that aircraft would be directed to the new runway end.

As Runway End 34R is extended south, the associated FAA-defined design surfaces also shift south. These surfaces would be contained on airport property, and would likely not be an issue. It is expected that the relocated approach surface would provide adequate clearance over Airport Road.

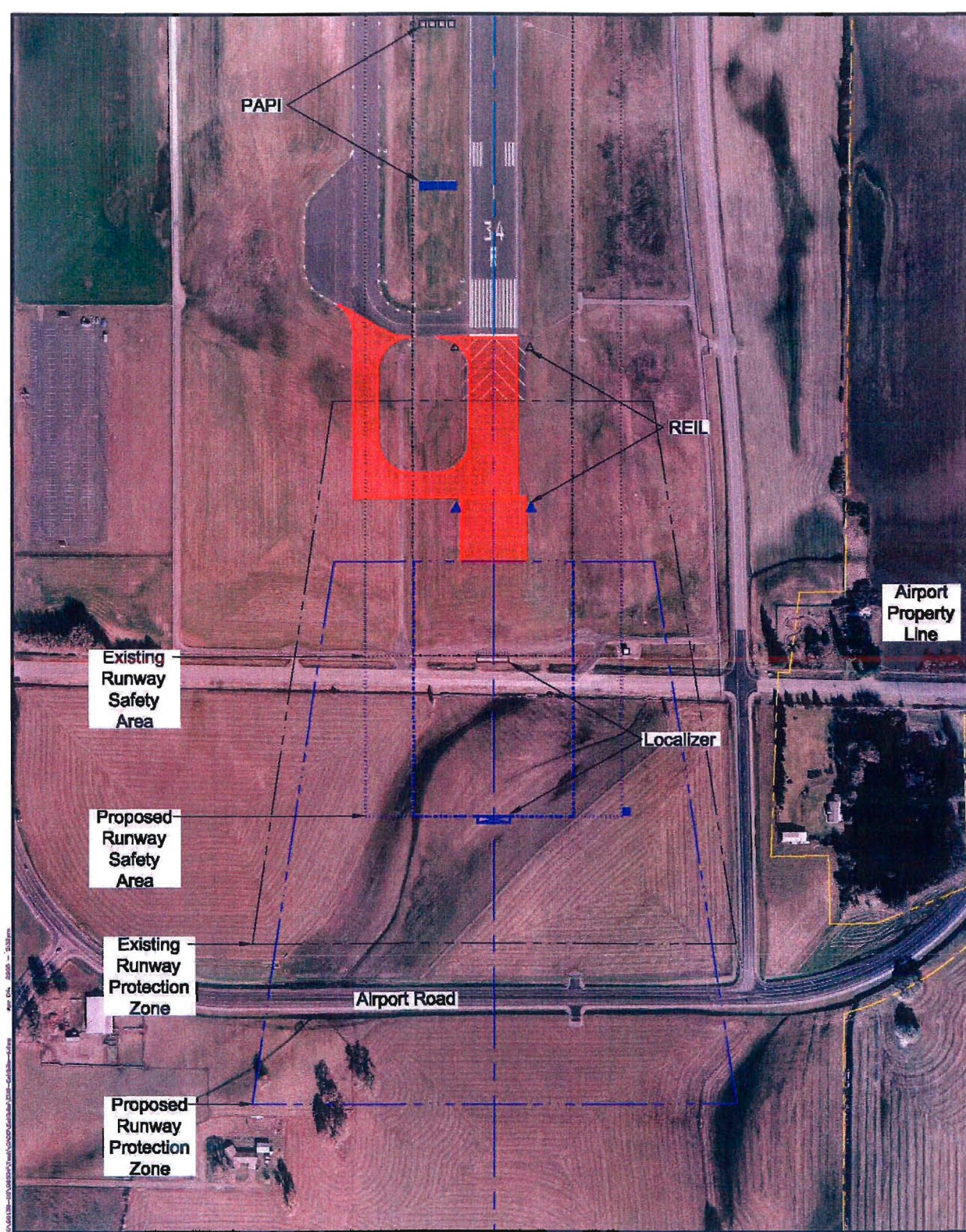
The Non-Precision Instrument Approach Procedure serving Runway End 34R has with it a Runway Protection Zone (RPZ). This RPZ is not as large as the RPZ associated with Runway End 34R. Even though the Runway End 34R RPZ would shift south, it would still encompass mostly airport property, such that additional land and land use restrictions would likely not be required.

Comparison

Neither of the extension options is expected to require the relocation of public roads. Both options require the same amount of pavement for runway, taxiway, and blast pad. Both require similar adjustment to existing airfield lighting, signage, and marking. Both require relocation of visual navigational aids (Runway End Identified Lights (REIL) and Precision Approach Path Indicator (PAPI)). The significant difference, from a construction aspect, is the relocation of the glide slope antenna and approach light system required by the extension to Runway End 16L, compared to the relocation of the localizer antenna array required by the extension to Runway End 34R. Each of the ILS components are co-located with an equipment shelter, and accessed by secured (gated) service roads. These elements must also be considered in the relocation of the ILS components.

Of the three ILS devices (MALSR, localizer, and glide slope), the MALSR has the most components, and covers the greatest area on the ground. Approximately 15 light standards (poles), spread over a distance exceeding 2,000 feet, would require relocation. A localizer and a glide slope are each single features with the significant components of each device being in primarily one location. Only the northern runway extension of Runway End 16L requires relocation of the MALSR. With this option, the MALSR would shift onto the Fiddler's Green Golf Course, and conflict with existing structures, which would have to be removed. This supports Alternative 2 as the preferred alternative.





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SCALE IN FEET



Exhibit 4-3
Runway 16L/34R Extension Alternative 2



The ability to control the land within the Runway Protection Zone (RPZ) is also a significant factor in a runway extension. A northern extension of Runway End 16L places the RPZ on private property, which may require acquisition to control. A southern extension of Runway End 34R keeps the RPZ on airport property. This supports Alternative 2 as the preferred alternative.

The amount of obstruction removal is also a factor. A northern extension of Runway End 16L shifts the approach surface into conflict with existing poles and towers. A southern extension of Runway End 34R is not expected to introduce obstructions. This supports Alternative 2 as the preferred alternative.

As a runway end is extended, the range of visibility required by the Airport Traffic Control Tower (ATCT) increases. Visibility requirements limit the airfield areas which can be developed with structures and parked aircraft, and affect the movement areas of aircraft. Both extension options would require setting aside additional land for ATCT visibility. However, a northern extension of Runway End 16L would require a greater area for ATCT visibility than a southern extension of Runway End 34R. In particular, the area between Hollis Lane and Taxiway B, north of Taxiway C, being reserved for aviation manufacturing, would be affected by the ATCT visibility requirements resulting from a northern extension of Runway End 16L. This supports Alternative 2 as the preferred alternative.

Third Alternative

A third option is to add runway length to both runway ends to attain the 500-foot increase, although such an option would likely not prevent the required relocation of the ILS components, nor the revision to FAA approach procedures and publications. Also, such an option is not expected to lessen construction nor ease facility implementation, both of which would be desired of any airfield improvement.

Environmental Factors

Other factors influencing the direction of runway extension may be presented as part of an environmental assessment, or similar documentation process. Environmental documentation considers specific details of an improvement, and provides opportunity for review and input from regulatory agencies and the public. It is expected that such an environmental process will be required prior to implementation of this runway extension.

Wetland Impact

Exhibits 4-2 and 4-3 show extended runways, Runway Safety Areas, and Runway Protection Zones for Alternatives 1 and 2, respectively. Areas within the extended runway for Alternative 1 were filled and/or mitigated for fill as part of the original runway construction. There would be some wetland impacts due to the expansion of the Runway Safety Area for Alternative 2. Alternative 1 would be preferable to reduce wetland impacts.

Implementation

Regardless of extending the runway north or south, the process of lengthening the parallel runway will likely require one of two actions. One option is to temporarily shorten the parallel runway's effective, usable length by relocating the runway threshold to safely accommodate the construction on one runway



end, while aircraft continue to operate on the runway. Another option is to temporarily close the shorter parallel runway during construction, shifting 100% of the aircraft operations to the longer primary runway. The best course of action should be determined during the planning, environmental, design, and construction phasing of the project. The implementation of the extension should include consideration of additional details, and quantification of effects and impacts.

2.2 Taxiways

EUG benefits from an elaborate taxiway system, including full parallels to both runways, a midfield connector (a portion of which accommodates two simultaneous aircraft), and several routes to terminal areas, which provide direct travel among touchdown, terminal, and take-off.

One feature expected to increase the efficiency of aircraft ground movement is the addition of acute angle (or "high speed") taxiway connectors. Taxiway connectors are the shorter sections of pavement bridging the gap between the runway and the parallel taxiway. These connectors have traditionally been configured to be at right angles (90 degrees) to the direction of the runway and taxiway, allowing an aircraft exiting the runway to turn either direction onto the parallel taxiway. However, a right angle connector intersection requires the aircraft to slow considerably, by wheel-braking and reversing the engines, losing its momentum from touchdown. The aircraft then must increase engine power to accelerate across the connector, and then repeat the process to negotiate the second right-angle turn onto the parallel taxiway.

This abrupt and repetitious action between brake and acceleration negatively affects the efficient movement of the aircraft around the airfield. It results in a shift in the steady flow of the aircraft movement experienced by the onboard passengers, and also in wear on the aircraft. It also expends more fuel in reversing the engines to slow, thrusting the engines to connect, and thrusting again once on the parallel taxiway, resulting in increased exhaust emissions, and in increased noise from the revving engines.

The acute angle taxiway connector capitalizes on the motion and energy of the moving aircraft, as the pilot directs the aircraft gently from the runway onto the connector, and gently onto the taxiway, without significant change in direction or speed. It allows aircraft to more quickly exit the runway, making it available for other aircraft. It also encourages aircraft to take direct paths between runway and terminal.

Operators using EUG benefit from several existing acute angle connectors. Taxiways A4 and A6 allow for efficient transition off a runway by an arriving aircraft using the aircraft's momentum. Taxiways A3, A7, and A8 are also acute angle connectors, but because of their location near the runway ends, are more conducive to direct routing than to steady aircraft movement, as there is not sufficient distance for an arriving aircraft to touchdown and exit the runway at A3, A7, and A8.

Improvement Alternatives

It may be beneficial to locate acute angle connectors either as a replacement of an existing right angle connector or as introduction of a new taxi route.



Primary Runway/Taxiway

Introduction of acute angle connectors north of A4 and north of A5 may help aircraft arriving on Runway End 34L to quickly exit to Taxiway A. A connection north of A5 would bridge the runway with Taxiway P. These improvements would ease travel between the primary runway and the midfield/Hollis Lane aviation area, an area which is planned and expected to develop with corporate aviation and aviation businesses.

Parallel Runway/Taxiway

Modification of the 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.

It may also be beneficial to have acute angle connectors among taxiways, taxilanes, and aprons, and not just runways, especially if aircraft circulation movements are commonly in one direction. Aircraft ground movements can be observed among aircraft, or can be established by the airport, to continue or result in efficient and direct paths. Not every opportunity for such a connector is considered as part of this Master Plan Update, but areas should be evaluated as traffic patterns are established and modified.

As parallel Runway 16R/34L is extended, parallel Taxiway B will also be extended to connect to the new runway end. The existing section of Taxiway B which connects to the existing runway end will remain in place to continue to serve as a connector and opportunity for aircraft to exit the runway. This existing taxiway connector, along with the new taxiway connector to the new runway end, will provide a taxiway coupler, allowing aircraft which have exited the runway to wait on the existing connector, while aircraft taxiing to the new runway end can travel to the new connector as they wait to enter the runway. This will prevent the aircraft from simultaneously entering the taxiway in conflicting directions. Pilots using primary Runway 16R/34L benefits from existing taxiway couplers on both runway ends. As this improved situation develops on the end of parallel Runway 16L/34R which is extended, it may be of benefit to introduce a taxiway coupler on the end of parallel Runway 16L/34R that is not extended. There is expected to be ample space for such an improvement, which will likely improve the ground circulation movement of aircraft on the eastern side of the airfield.

Additional Areas

Other taxiway connections, besides acute angle, may also benefit ground movements. For example, the introduction of a taxilane connecting the North Ramp to East General Aviation Ramp would prevent aircraft from having to enter ATCT-controlled movement areas, thereby easing ground movements, and freeing ATCT for other tasks.

The northern extension of the taxiway connecting Taxiway C to the Hollis Lane Aviation Area taxilane would give aircraft more direct connection to the primary runway, and to the terminal area. Extending north to Taxiway A gives direct access between the Hollis Area and Runway End 16R. Extending south, to Taxiway P and on to the terminal apron, gives direct access between FBO services and corporate



aviation facilities. Direct taxiways increase efficient aircraft ground movements by minimizing taxiway time and distance.

As midfield development increases, the activity may be such that the extension of Taxiway M to Taxiway A would ease traffic currently carried by Taxiway C. This is especially the case if there is extensive simultaneous movement in both eastbound and westbound directions. Having only one midfield taxiway connecting both east and west sides of the airfield forces aircraft wanting to travel in one direction to wait until the one taxiway is vacant, or to find another more indirect route.

The extension of Taxiway C beyond its terminus at Taxiway A, on to connect with Runway 16R/34L, may provide direct access from midfield to the primary runway. Or it may be that such a connection conflicts with Taxiway A4, or is undesirable, in which case, it may be best to provide such connection only for surface vehicles, especially ARFF.

As new airport businesses and facilities develop, many may require direct taxiway access to support their function. As taxiway connectors are introduced, consideration should be given to the appropriate name/number designation, which may prompt renaming of adjacent taxi routes. Taxiway development and flow patterns should be coordinated with FAA advisory documents and Airport Traffic Control Tower personnel, and properly represented on the Airport Layout Plan before being implemented, so that standards and practices of safety and procedure are considered.

3. Terminal Areas

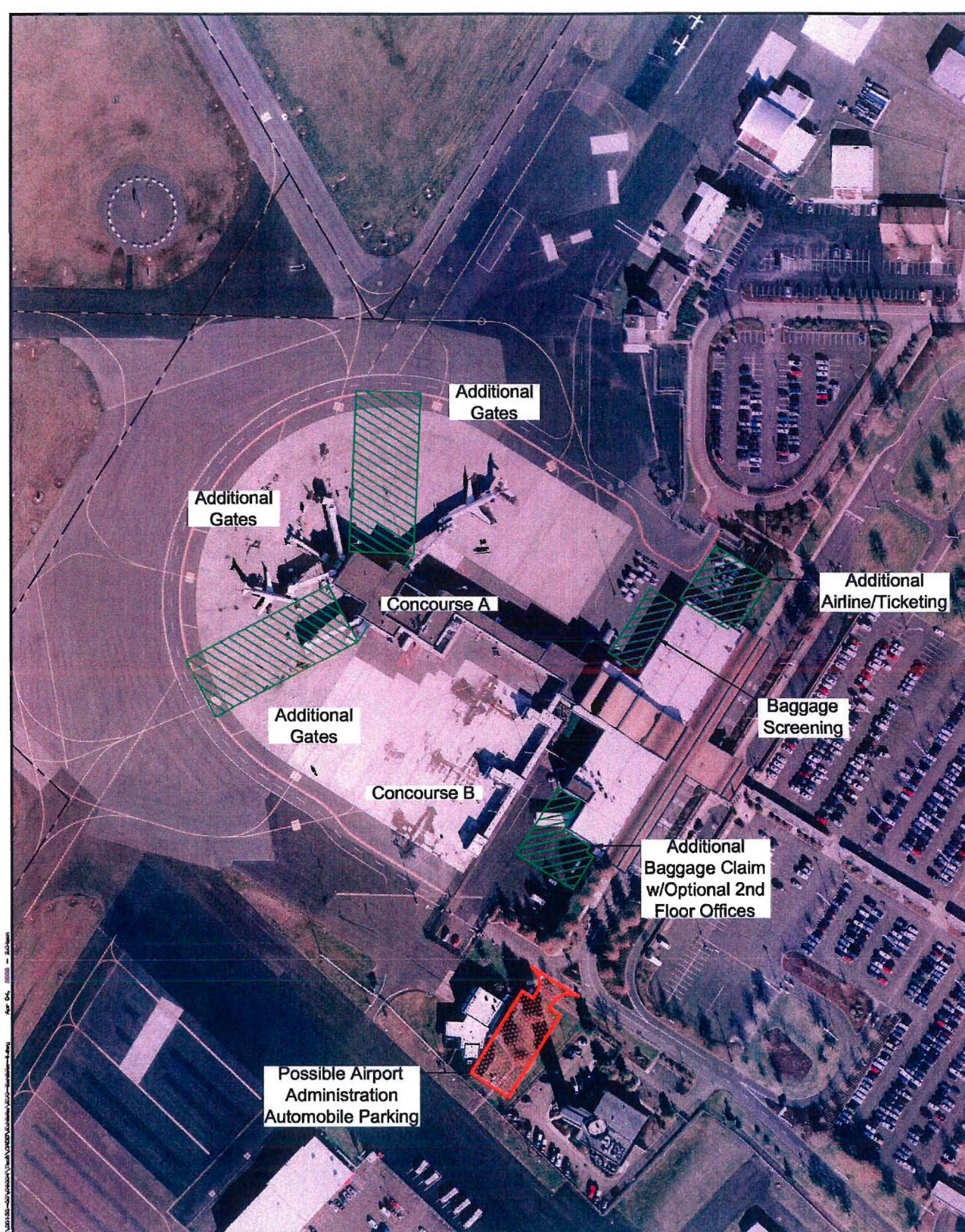
EUG has terminal areas serving cargo and charter aircraft, general aviation and corporate aircraft, and passenger aircraft. They each provide interface between landside and airside operations and services, and they each provide transfer of people and goods between transportation modes. This section addresses the improvements to each terminal area.



3.1 Main Passenger Terminal Area (see Exhibits 4-4 and 4-5)

The main passenger terminal area is the face of EUG to the local community. This is the destination to which the traveling public of the Eugene area comes to park their car, pick-up a friend, and embark on a flight. It is from where they depart, and to where they return. This section addresses improvements to the main passenger terminal building. Automobile parking for the main passenger terminal is addressed in Section 5 – Automobile Parking and Circulation.





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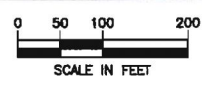
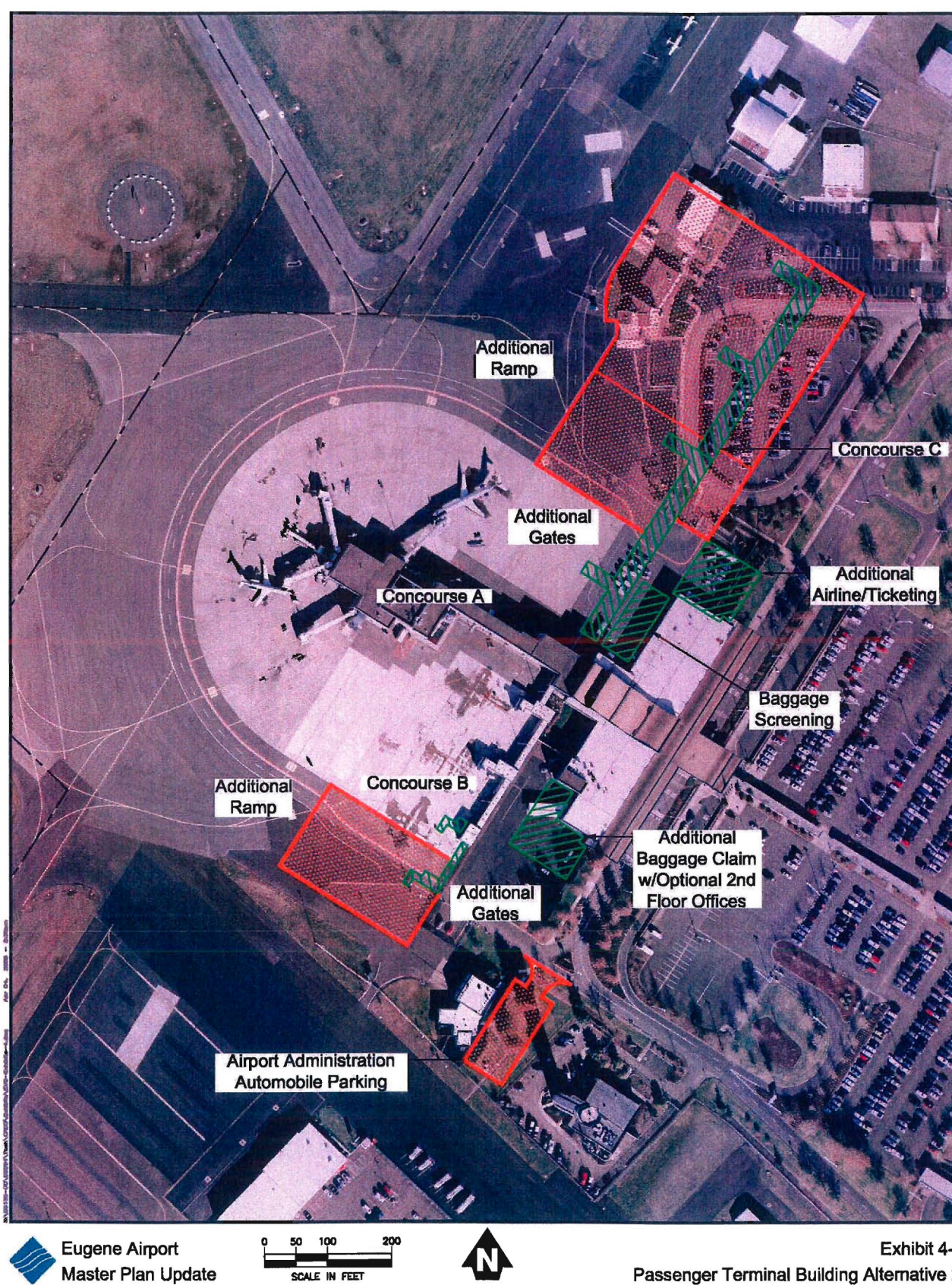


Exhibit 4-4
Passenger Terminal Building Alternative 1





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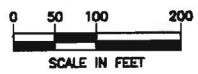


Exhibit 4-5
Passenger Terminal Building Alternative 2



Main Passenger Terminal Building

The existing terminal building is approximately 89,000 square feet and has 10 aircraft boarding gates, and in 2006 accommodated approximately 360,000 enplanements. Based on the long-term forecasted passenger enplanements of 700,000 annually, 14 gates (4 additional) and 100,000 square feet (11,000 additional) are expected to be required.

For discussion, development is separated into landside-passenger interface (airline ticketing, passenger and baggage screening, baggage claim, and airport administration), and airside-passenger interface (aircraft boarding gates). Additional services and businesses, such as rental car counters and offices, convenient shops, and restaurants, may also be desired, based upon the business opportunity. These facilities are not specifically being planned as part of this Master Plan Update; however it is assumed that increased space in the overall terminal, plus increased traffic, will offer opportunities for the development of more concessions. Other improvements (requiring additional square footage), such as additional security, public meeting space, and restrooms, should also be included in architectural design for overall terminal building expansion. Consideration of these items follows.

Landside-Passenger Interface

From the perspective of essential landside-passenger functions, the main passenger terminal building is home to airline ticketing and offices, passenger and baggage security screening, and baggage claim (carousel). A single, logical development option is presented for improvement of these facilities.

Airline ticketing and offices will expand to the north, as a continuation of the existing airline counter area. Original building design included the north wall as a "knock-down" to allow this incremental expansion to occur efficiently. This will likely require additional square footage, to the north of the existing building, where space currently serving as landscaping is expected to be available.

Baggage screening currently occurs in front of the airline ticketing and offices. The airport has evaluated relocating the baggage screening equipment, personnel, and process to an area out of the main public space and to a more discreet and protected area of the terminal building. This would return the current baggage screening to public space, and conceal the baggage screening process. Adding new square footage behind the airline ticketing and offices, along the back of the existing terminal building, is expected to be suitable for current baggage screening operations and related office space. This site would also likely allow for expansion of these operations as passenger and aircraft activity increase at EUG.

Passenger security screening will expand in its current location, which bridges the landside-passenger area with the airside-passenger area. Although expansion of security is not expected to extend beyond the existing limits of the terminal building, accommodation of expanded security may require some businesses being relocated within the existing terminal or into an expanded area. It is also prudent for the Airport to plan for the implementation of automated terminal exit lane security monitoring.

The existing baggage claim (carousel) is located in the southwest corner of the terminal building. This facility is to expand south, as a continuation of the existing baggage claim area. This will likely require additional square footage, to the south of the existing building. This area currently serves as the baggage loading area, and will require adjustment to baggage vehicle routes and loading locations, but the space



is expected to be available. Again, the building was designed with this expansion in mind, and it remains a logical choice.

Airport administration is currently located in a temporary facility in the northern airfield area. At airports the size of EUG, airport administration is often located in the main passenger terminal building. This provides for more direct contact with airport tenants and the traveling public, and for increased customer service. As the terminal building is expanded for the improved baggage claim facility, it should include space for airport administration. These offices may be best located in a multi-story structure, above the baggage claim area, so that the main floor of the terminal is available to pedestrian movements. Consideration should also be given to providing public meeting space in this expansion, for public events such as airport open houses.

Along with the new airport administration offices, automobile parking for airport staff would need to be introduced near the new offices. This may best be located near the area of the current ARFF facility, south of the proposed airport staff offices. Once the new ARFF facility is operational, transition of a portion of the existing ARFF area to parking lot may be suitable. The existing structure, once vacated, may be temporarily used for airport-owned equipment storage, or for FAA equipment storage and offices. However, long term improvements should consider the removal of the former ARFF structure, and redevelopment for compatible use with terminal area activities.

Airside-Passenger Interface

From the perspective of essential airside-passenger functions, the main passenger terminal building is home to aircraft boarding gates. Two alternatives are presented for improvement of these facilities to increase aircraft boarding gates. Consideration should also be given to improvement of common areas, holding areas, queuing areas, and restrooms.

Passenger Terminal Building Alternative 1

One option to provide additional gates is to expand the main Concourse A to the northwest. This would extend the concourse structure onto area currently used for ramp, which would in turn require expansion of the terminal ramp to accommodate separation of aircraft taxiing around other aircraft parked at the expanded gates. Accordingly, the terminal area taxi-routes would also require adjustment.

Passenger Terminal Building Alternative 2

A second option to provide additional gates is to expand existing Concourse B to the southwest, and to add a new Concourse C to the northeast. This would 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 would also require the addition of new pavement to expand the terminal ramp to serve the new gates.

Comparison

Alternative 2 requires considerable adjustment to the current employee parking area, and significant paving to provide new ramp space for aircraft movement and parking. Based on this factor alone, this supports Alternative 1 as the preferred alternative.



Alternative 1 may introduce structures that present line-of-site issues to the ATCT, as it is expected to introduce new structures into areas currently used for aircraft taxi and require the realignment of established aircraft taxi-routes. This may require additional taxi pavement, and may complicate an already complex set of intersections of taxiways and taxilanes with the terminal ramp. Such complication could lead to aircraft congestion and pilot confusion in traveling between the runways and terminal area. This supports Alternative 2 as the preferred alternative.

Alternative 2 would make use of existing Concourse B which is generally underutilized. Improvements would likely include renovation of this concourse to better accommodate passenger holding and boarding. Expansion of Concourse B would extend into the areas currently used for ground vehicle circulation. However, as ARFF operations are relocated out of this area and the passenger terminal building expands to the southwest, current ground vehicle routes are expected to be modified, so that an expanded Concourse B would not interfere with ground vehicle circulation.

Alternative 2 introduces a new concourse, providing an opportunity to distribute passengers over additional area, instead of consolidating passengers in one concourse. This also provides more opportunity for additional businesses to develop and serve passengers. This supports Alternative 2 as the preferred alternative.

Alternative 2 requires significant relocation of existing facilities in the North Ramp terminal area. This would likely include the old ATCT and office building, airport landscaping building, and parking for airport administration and terminal employees. The old ATCT and office building and airport landscaping building have been identified as having fulfilled their useful and economic lives and this area has been targeted for redevelopment with higher and better uses. Other improvements include the relocation of airport administration to the terminal building, making this area also available for redevelopment. Relocation of airport administration to the terminal would also likely include a new automobile parking lot for airport staff. With these North Ramp facilities and services each located to a new home, expansion of the terminal building to this area is a compatible and high-value use of this site. This supports Alternative 2 as the preferred alternative.

Third Alternative

A third option is to add space to the northwest, southwest, and northeast sides of the terminal to increase gates, although this option is still expected to impact existing aircraft parking, taxi-routes, and ground vehicle circulation routes. Such an option is not expected to lessen construction nor ease facility implementation, both of which would be desired of any terminal improvement.

Wetland Impact

No wetlands are expected to be affected by either alternative, although a wetland jurisdictional study would be required to confirm.



Implementation

The process of expanding the main passenger terminal building and ramp will require temporary adjustments to the standard practices and movements of aircraft on the ramp and passengers in the terminal. The expansion would likely not have to occur at one time, but could instead be phased, as gates and ramp are needed. The best course of action should be determined during the planning, design, and construction phasing of the project.

3.2 Other Terminal Areas

The airport has four terminal areas (besides the main passenger terminal area): North Ramp, South Ramp, East General Aviation Ramp, 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 (22 of which are permanently occupied). Facility analysis and requirements determined a need for an additional 20 box hangars, 20 T-hangar units, and 2 tie-downs. As each of the four terminal areas has opportunity and 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, based on their requirements, as they are introduced to the Airport. It is also expected that as hangars reach the end of their useful and economic lives, they will be replaced with similar structures in their current locations. The following discusses a logical development plan for each area, instead of alternatives, although the North Ramp does have an improvement alternative to consider.

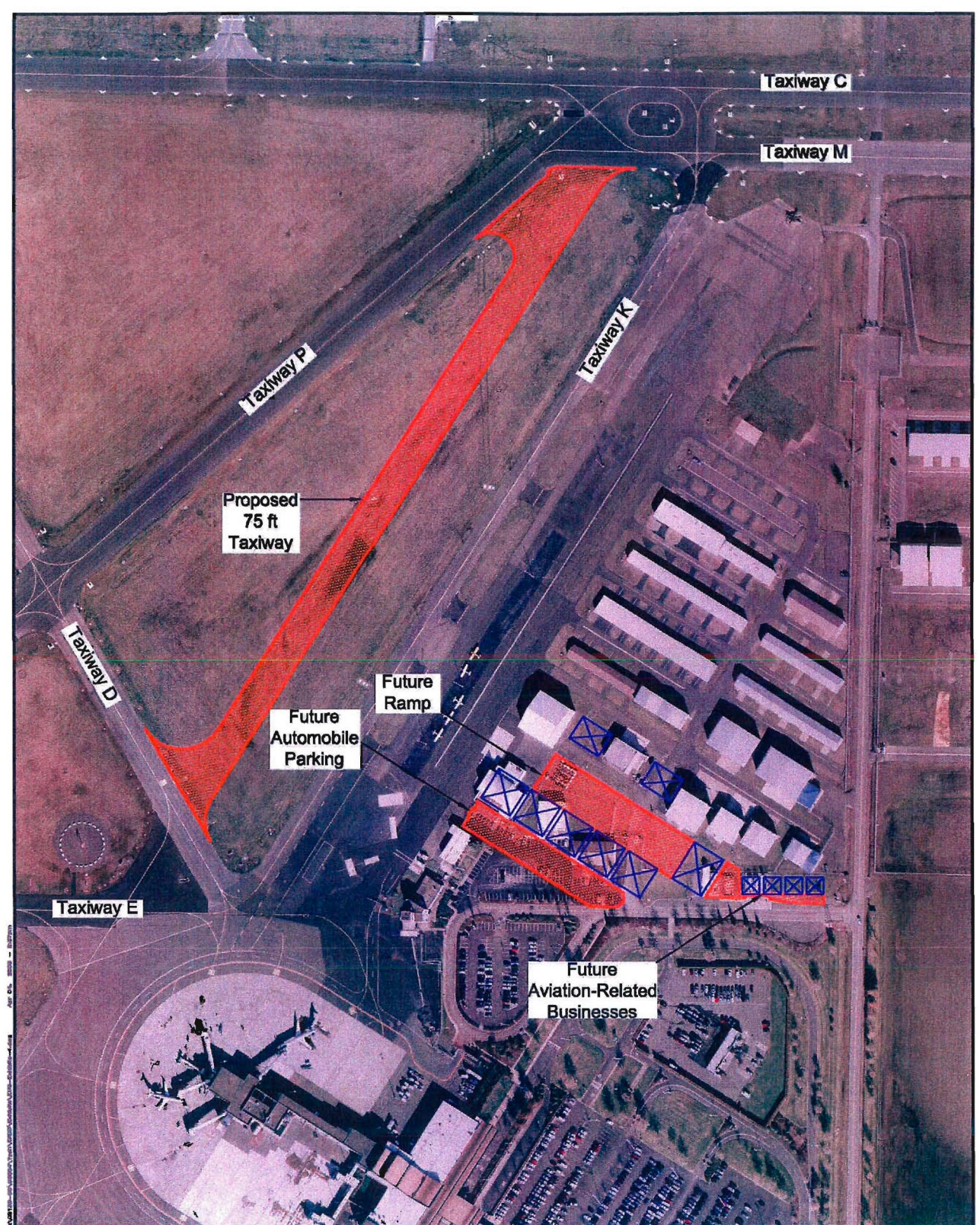
3.2.1 North Ramp (see Exhibits 4-6 and 4-7)

The North Ramp is the area north of the main passenger terminal building area and automobile parking lot, west of Northrop Drive, and south of Taxiway M. It is home to airport administration, airport maintenance, Transportation Security Administration (TSA), Fixed Base Operator (FBO), and aviation-related businesses. The North Ramp provides aircraft storage in box hangars, T-hangars, and apron with tie-downs.

Aircraft Storage

The North Ramp has 10 box hangars, 57 T-hangar units, and 61 tie-downs (6 of which are permanently occupied). There is space for two box hangars in between existing hangars. As the proposed ARFF facility is expected to be developed in this area, there is not room for T-hangars. The apron and tie-downs are generally underutilized, especially on a permanent basis. A taxiway connecting the North Ramp and East General Aviation Ramp (EGAR) is being considered. This taxiway would likely remove aircraft tie-downs, which could be relocated to the EGAR.



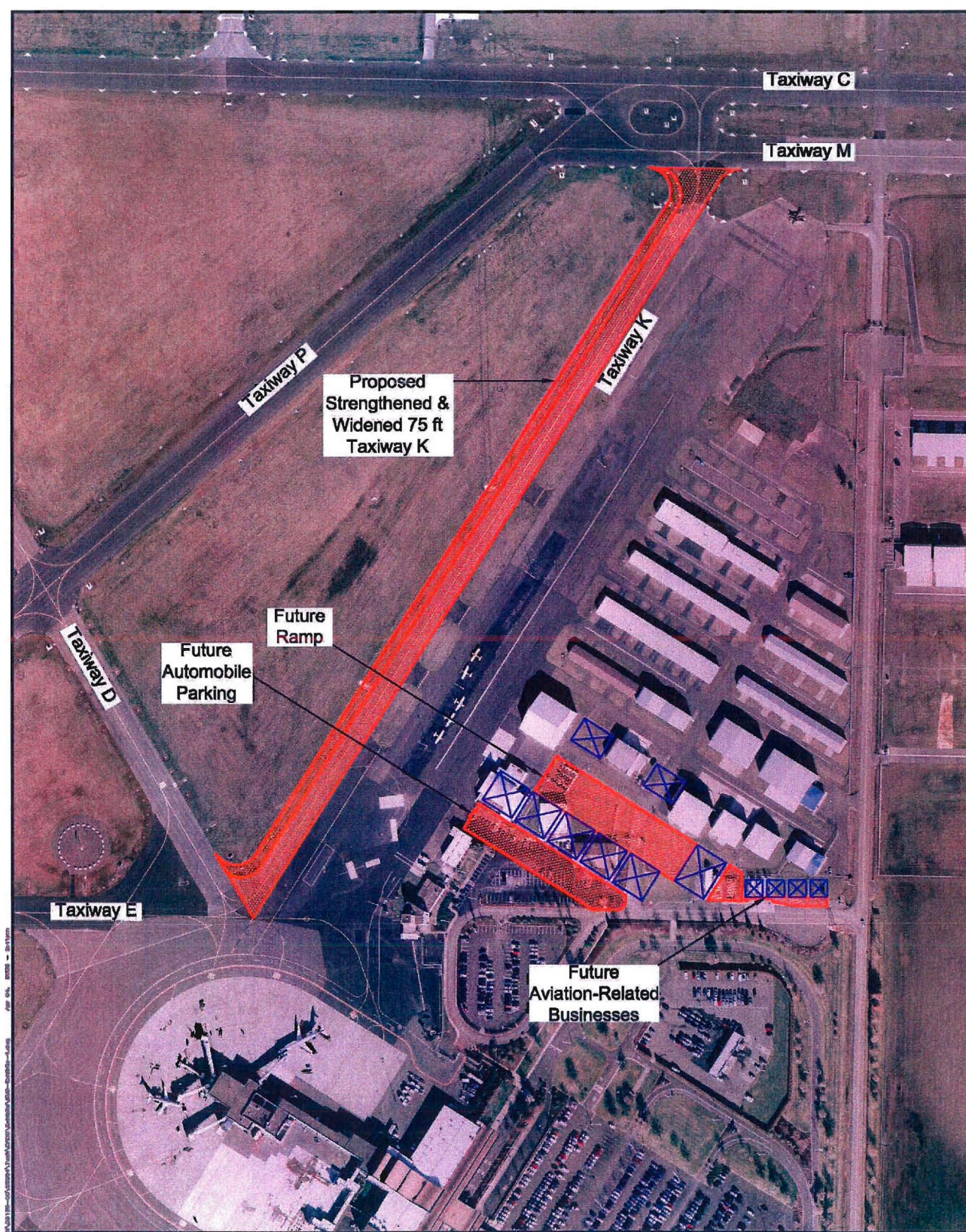


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Exhibit 4-6
North Ramp Development Alternative 1





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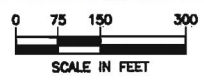


Exhibit 4-7
North Ramp Development Alternative 2



Services and Businesses

Airport administration, airport maintenance, TSA, Friendly Air Service, the fuel farm, and other aviation-related businesses are on the North Ramp. However, the structures for each of these have either reached the end of their useful and economical life, or should be relocated to new or better suited facilities.

Airport administration is currently located in a temporary facility. As the terminal is expanded, it should include space for airport administration.

The TSA also operates from a temporary facility, from which it serves airports besides EUG. As TSA continues their service, relocation or expansion into the larger building vacated by airport administration (as it moves to the main terminal building) should be considered. Or, depending on the space available within the main terminal building, it may be suitable for TSA to locate in the expanded terminal. This is expected to occur within 5–10 years.

Along the North Ramp area apron are three buildings: the old ATCT and office building, airport maintenance, and Friendly Air Service FBO. These buildings house services and businesses which should be relocated to new or better suited facilities.

The old ATCT and office building is home to aviation related businesses. This facility fulfilled its primary function once FAA operations shifted to the current ATCT and offices south of the main passenger terminal. The businesses have been able to extend the building's life, but this will not sustain. These businesses are compatible with and bring benefit to the Airport, but do not necessarily require the airside access they currently have. Such airside access is better suited for services and businesses which utilize the airfield, and should be so reserved.

The airport maintenance building on the North Ramp is used for landscaping services. This facility is the one airfield maintenance operation not located in the Hollis Lane Aviation Area. As this structure has fulfilled its useful and economical life, it is recommended that this operation be shifted to the Hollis Lane Aviation Area. If the landscaping operation cannot be consolidated into an existing building, a new building should be constructed.

Once the need arises and suitable locations have being found for the existing services and businesses, it is expected that the old ATCT and office building and the airport maintenance building will be razed and made available for other development. A development option for the main passenger terminal building is to add gates and ramp north of the main passenger terminal. The absence of the old ATCT and office building and the airport maintenance building will accommodate this alternative. If development of the main passenger terminal building does not require this space within the timeframe addressed in this Master Plan Update, the Airport should consider keeping it available for some other time in the future when it may be needed. The reason for this is that the terminal building location is set and since it is one of the highest functional components of the Airport, flexibility regarding its future expansion should be preserved.



Friendly Air Service FBO provides services to local and transient aircraft. The FBO building has fulfilled its useful and economical life, and will require replacement. It is expected that the current site will be used for the replacement facility. However, in order for the FBO's operation to continue during construction, they will likely either have to shift the new facility to a site adjacent to the current facility, or temporarily relocate as the new facility is built. As a temporary relocation, the existing old ATCT office building or nearby hangars may be suitable.

Once the services operating in the two temporary buildings have been relocated, and the buildings vacated and removed, there is expected to be space available to accommodate additional box hangars. These hangars would be aligned with the new FBO facility, such that access by aircraft would be by one direct taxiway.

Fuel farm

The existing aircraft fuel storage facility ("fuel farm") is located along the entrance road to the North Ramp area (Lockheed Drive). It consists of five fuel storage tanks, all located above-ground. Although there is space in the fuel farm for one additional fuel tank, there is not likely room for more. The fuel farm requires access by tanker trucks delivering fuel, and access by on-airport vehicles ferrying fuel to airfield ramps to aircraft. The location requires tanker trucks to travel the same roads as airline passenger automobiles to reach the airfield's center. Fuel delivery and transfer between storage tanks can interfere with other tenant and public accessing the North Ramp. Because of this, it is beneficial to relocate the fuel farm to the edge of the airfield, so that tanker trucks and fueling operations do not occur near the concentration of the traveling public in the main passenger terminal building and automobile parking lot.

The fuel farm would likely be better located in the south airfield area, which would allow fuel delivery vehicles to exit Douglas Drive before entering the airport circulation road, and to operate in an area less concentrated with the traveling public. This new fuel farm would likely provide space for the storage capacity offered by the existing fuel tanks, and for additional storage capacity to support increased aviation activity. This location is also closer to the facility that operates the fueling (Flightcraft), and to where the aircraft fueling vehicles are parked.

Reconfiguration of the North Ramp area for new hangars and aviation-related businesses is expected to increase the opportunity for the airport to serve tenants, travel, and the community. There is expected to be room for one FBO building, seven box hangars, taxiway and ramp, and automobile parking. For non-airside, with the relocation of the fuel farm, there is expected to be room for several aviation-related business facilities.

Taxiways

EUG has an elaborate taxiway system, providing direct access between many airfield areas. However, for larger, heavier aircraft there is not a direct route between the main passenger terminal area and parallel Runway 16L/34R. Smaller aircraft can pass on Taxiway K, as its 50-foot width is sufficient. Larger aircraft, which require a 75-foot wide taxiway, currently travel from the main passenger terminal ramp along Taxiway D, to Taxiway P, and onto Taxiway M to the eastern airfield. As Runway 16L/34R sees greater use by larger aircraft needing main passenger terminal access, efficient aircraft ground movement will be of increased importance, and a direct taxiway will be of benefit.



North Ramp Development Alternative 1

One option to provide direct access for larger aircraft is to construct a new taxiway between the Taxiway D and Taxiways M and P. This new taxiway would accommodate larger, heavier aircraft, as well as smaller general aviation aircraft. As taxiway movements are shifted from Taxiway K onto the new taxiway, the north ramp apron can be expanded, connecting to the pavement which is currently Taxiway K, and allowing that pavement to be converted to aircraft storage.

North Ramp Development Alternative 2

A second option to provide direct access for larger aircraft is to improve Taxiway K from 50 feet in width to 75 feet, and to improve the taxiway's strength to that of connecting pavements. This would make the best use of the existing pavement and taxiway route structure, and would open the north ramp up to increased use by larger aircraft.

Comparison

Introducing a new taxiway would allow for the expansion of the north ramp apron. However, the north ramp currently has available ramp space that is underutilized, as only 6 of 61 tie-downs are permanently occupied. This may change as the north ramp services and businesses are redeveloped, but there is not an anticipated need for additional north ramp aircraft space. A new taxiway may also complicate pilot understanding of aircraft ground movements (and associated airfield signage and marking), at the intersection of the new taxiway with Taxiways C, M, and P on the northeast, and at the intersection with Taxiways D and E on the southwest. These reasons, along with the expected ease of implementation of Taxiway K improvements, support the widening and strengthening of Taxiway K as the preferred alternative.

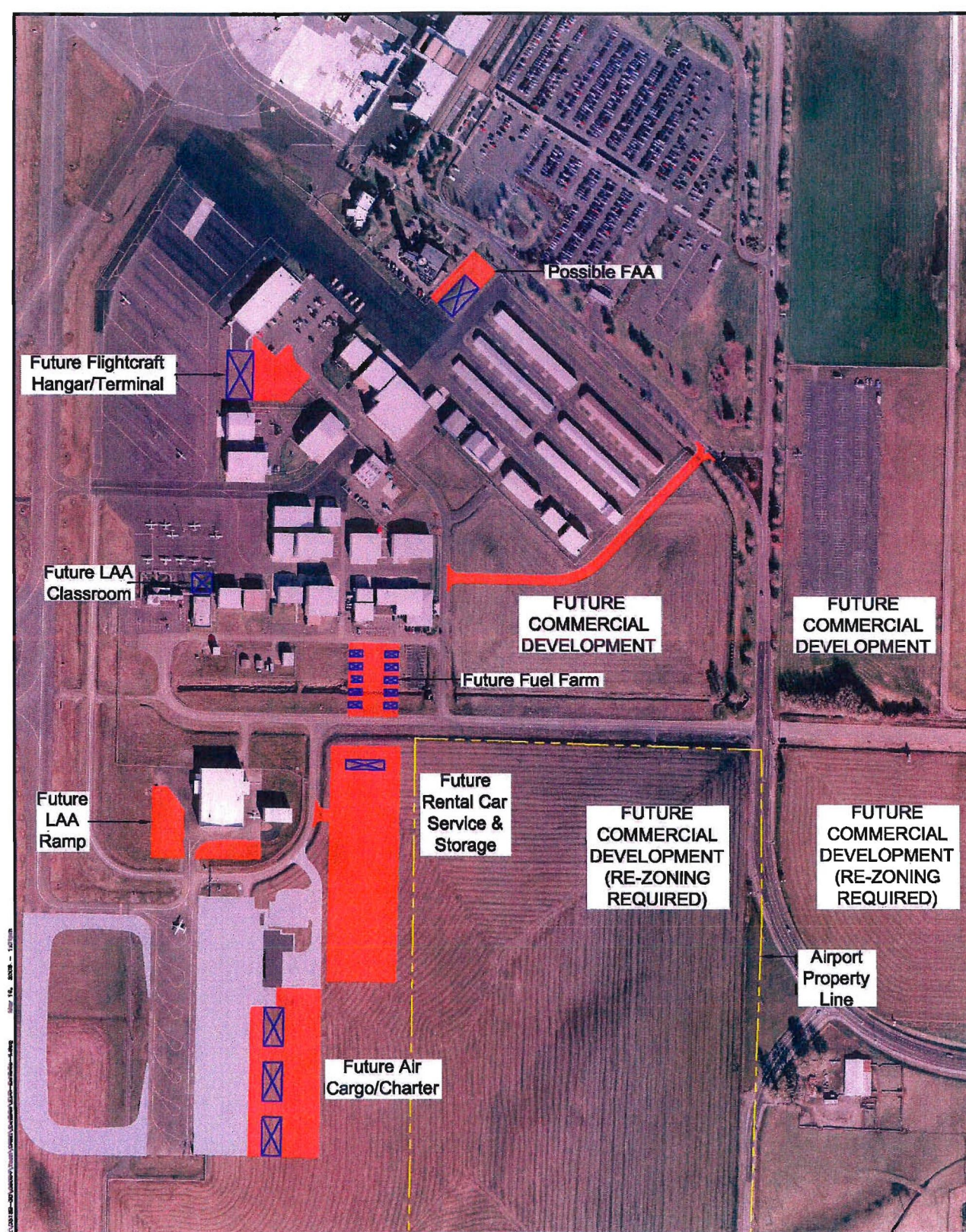
Wetland Impact

Alternative 1, shown on Exhibit 4-6, would impact more open space and has a higher probability of impacting more wetland acreage. The affect of Alternative 1 versus Alternative 2 on wetlands cannot be accurately discerned due to a lack of historical wetland delineations within this area. This is also true regarding the *Future Aviation Related Businesses* depicted in both drawings. This area should be subject to a wetland jurisdictional delineation.

3.2.2 South Ramp (see Exhibit 4-8)

The South Ramp is the area south of the main passenger terminal area and automobile parking lot, southwest of Douglas Drive, west of Airport Road, and south of Taxiway G. It is home to FAA Airport Traffic Control Tower (ATCT), Aircraft Rescue and Fire Fighting (ARFF), air cargo and charter, Lane Aviation Academy, Flightcraft Services, and aviation-related businesses. The South Ramp provides aircraft storage in box hangars, T-hangars, and apron with tie-downs.





Aircraft Storage

The South Ramp has 23 box hangars, 59 T-hangar units, and 68 tie-downs (3 of which are permanently occupied). There is space for one box hangar/terminal in between existing hangars, and there is not room for T-hangars. Additional hangars could be placed to the south of the current T-hangars, but would consume space being reserved and intended for commercial development.

The apron and tie-downs are generally underutilized, especially on a permanent basis. For this and other reasons, aircraft deicing activities are considered being located on the South Ramp apron. Moving deicing to this location would require introduction of new taxiway pavement, pavement strengthening, and removal of ramp and tie-downs. The ramp and tie-downs can likely be replaced in the EGAR.

Services and Businesses

The FAA ATCT, ARFF, air cargo and charter, Lane Aviation Academy, Flightcraft Services FBO, Helitrade FBO, Lawrence FBO, Oregon Air & Space Museum, and other aviation-related businesses are on the South Ramp. Some of the structures housing these facilities are new, modern, and expected to be sufficient for the forecast period, while others need to be expanded, and some even replaced.

The FAA operates EUG's ATCT, and other regional aircraft and airspace services from their on-field facility. The FAA has expressed a need for increased facility size, and space has been (and should continue to be) reserved for them.

The ARFF facility houses the airport's emergency response vehicles and personnel. This facility has fulfilled its useful and economical life, and is expected to be relocated to the North Ramp.

The air cargo and charter facility has recently been completed to consolidate operations formerly performed at various locations around the airfield. This improvement project also expanded the cargo/charter apron to accommodate the larger aircraft often used in charter operations, and those larger aircraft that could be associated with additional air cargo business. The new air cargo/charter site is expected to accommodate three additional buildings along the new ramp.

Lane Aviation Academy expects to add a new classroom structure in their building cluster, and to add ramp space to their maintenance facility. Space adjacent to their facilities is available for this expansion.

Flightcraft Services FBO, providing EUG's aircraft fueling and other services, expects to expand their facility within the near term with additional terminal and hangar space, and automobile parking. Space adjacent to their facility is available for this expansion. Helitrade FBO, serving rotorcraft, is expected to continue to operate from its hangar, although its expected growth includes ground storage space instead of hangar space. Lawrence FBO has recently relocated from the old ATCT and office building on the North Ramp to the new air cargo and charter facility on the South Ramp, a location which is expected to accommodate their operations for the forecast period.

The rental car service/storage facilities are to be relocated from the main passenger terminal automobile parking lot to the south airfield. This relocation will make space available for additional passenger



automobile parking in the main lot, allow for an improved rental car service facility, and accommodate the current (144) and projected (280) rental car service/storage parking stalls. The new site also provides for growth of rental car services and business. Depending on airport policy and agreements, consideration should be given to siting the rental car facility on existing airport property, acquiring additional property, or on private property.

The fuel farm is also expected to be relocated to the southern airfield from the North Ramp, to distance fuel storage from areas of concentrated traveling public, and to ease fuel transfer and delivery.

The Oregon Air & Space Museum (OASM) is considering a new larger facility, which likely could not be accommodated at its current site. One location being considered for the OASM is the in the eastern airfield. Relocation out of the current facility will make the former OASM space available, and once the relocation is scheduled, reuse and redevelopment of the current OASM facility should be considered.

Space for commercial development is being reserved along the airport entrance road at the intersection of Airport Road and Douglas Drive. This is high visibility property that may be best suited for landside, non-aeronautical business and services. Three corners of the intersection (all except the southwest) are owned by the Airport, and there may be benefit to the Airport controlling the southwest corner. A proposed roadway is shown as a possible way to open up the northwestern corner for development. Existing zoning shows agricultural use for the two southern corners of this intersection, and development of these southern corners for commercial purposes will likely require local rezoning.

Wetland Impact

Improvements to the South Ramp area, as depicted on Exhibit 4-8, include numerous structures and potential future development. Several of these structures would have minimal wetland impact. These include the "Future LAA Ramp" and the "Future Air Cargo/Charter" building included in the wetland delineation (Environmental Solutions, 2006). The "Future Rental Car Service & Storage" would most likely have little or no impact on wetlands, although it is not completely within the aforementioned delineation. The "Future Flightcraft Hangar/Terminal", "Future LAA Classroom" and "Possible FAA" structures would most likely have no impact, although a wetland determination would need to be made. The greatest impact, if any, is most likely to occur in the areas labeled "Future Commercial Development", "Future Fuel Farm", and a connector road west of the intersection of Airport Road and Douglas Drive. The area labeled "Future Commercial Development" to the southwest of Airport Road and Douglas Drive contain soils with the highest probability for wetland characteristics, although a wetland delineation would need to be performed to determine this conclusively.

There are two wetland areas that could be avoided near the areas labeled "Future Commercial Development" southeast of the intersection of Airport Road and Douglas Drive, and "Future Commercial Development" northeast of the intersection of Airport Road and Douglas Drive. Both of these areas have known wetlands on-site which could potentially be completely avoided.



3.3.3 East General Aviation Ramp (see Exhibit 4-9)

The East General Aviation Ramp (EGAR) is the area east of Northrop Drive, and south of Taxiway M. It is home to aircraft storage, in 3 box hangars, 14 T-hangar units, and apron. The EGAR began as one of the early phases of the parallel Runway 16L/34R project, and continued growth is expected. There is availability for and benefit from developing EGAR with additional aircraft storage, and with aviation-related businesses.

Aircraft Storage

EGAR has room for 16 box hangars and 20 T-hangar units. Many of the sites have been prepared with access taxilanes and utilities. Hangar sites have height restrictions to accommodate ATCT visibility, but it is expected that suitable structures can be built to house aircraft, and still allow for clear observation from the tower. The existing apron provides aircraft parking, but is not equipped with tie-downs. Even though the North and South Ramps have been identified as having tie-downs that are underutilized, introduction of tie-downs in the EGAR area would likely be of benefit to based and transient aircraft using the parallel runway and accessing the eastern airfield. There is also room for additional apron, south of the existing apron.

Services and Businesses

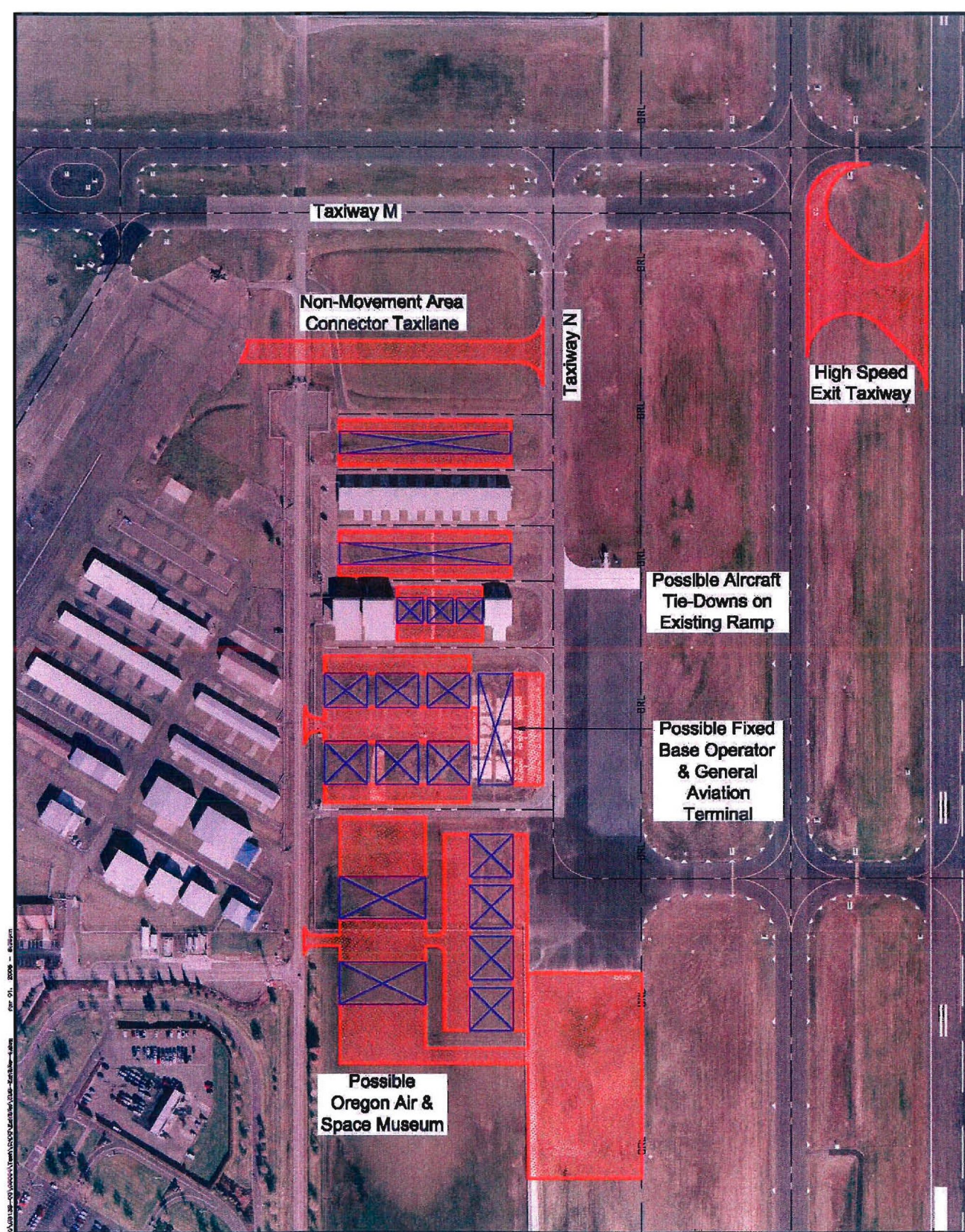
The EGAR is home to the only self-fueling facility for aircraft at EUG. This is a convenient and well-utilized facility, and space for additional fueling activities and storage should be preserved. EGAR currently has no FBO; however, space is available and should continue to be reserved for FBO hangars and offices. A general aviation terminal facility should also be considered, especially as smaller aircraft use of parallel Runway 16L/34R and EGAR continues to increase.

Because of the different aircraft storage sites and services located around the airfield, aircraft regularly travel between EGAR and the north ramp. Currently, ground movements between EGAR and the north ramp follow Taxiways M and N and pass into an FAA-controlled movement area, requiring pilot instruction and procedure from the ATCT. The introduction of a non-movement area taxilane connecting Taxiway N and the North Ramp would ease pilot ground operations and prevent aircraft from requiring ATCT contact, making ATCT available for other duties. This taxilane would likely remove aircraft tie-downs on the North Ramp, which could be relocated to the EGAR apron.

The introduction of acute angle ("high speed") exit taxiway from the parallel runway would allow for the efficient movement of aircraft arriving on Runway End 34R to Taxiways B, C, and M.

Relocating the Oregon Air & Space Museum to the EGAR area may fit well with a future realigned Douglas Drive, especially as passenger automobile traffic enters the airfield and passes this high visibility site.





Eugene Airport Master Plan Update   Exhibit 4-9 East General Aviation Ramp Improvements



On the east side of Green Hill Road, which runs east of and parallel to Runway 16L/34R, is airport owned property which is likely available for commercial and industrial development. Some has frontage along Green Hill Road, some along Awbrey Lane, and other along State Route 99W. 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 facilitating airport-compatible development. Although specific developments for these areas are not shown, many configurations of improvements can be accommodated, depending on the requirements and desires of the proposed improvement.

Wetland Impact

Improvements to the EGAR area, as depicted on Exhibit 4-9, include a proposed Oregon Air & Space Museum and several other proposed structures and paved surfaces. Primary wetland impacts would occur due to the proposed museum (estimated 0.8 acres), and potential impacts could result from areas that haven't been recently delineated. A 2006 delineation performed by Coyote Creek indicates that wetlands may have expanded in the general vicinity since 2000. Exploring the property to the southwest of Airport Road and Douglas Drive may be an option for the museum that provides less wetland impact.

3.3.4 Hollis Lane Aviation Area (see Exhibit 4-10)

The Hollis Lane Aviation Area is the area between the two runways, and north of Taxiway C. It is home to airport operations and maintenance, aviation-related business, and aircraft storage in box hangars. This area was opened up with the introduction of parallel Runway 16L/34R and Taxiway C.

Aircraft Storage

The Hollis Lane Aviation Area has room for 14 box hangars. It is expected that most would house fixed-wing aircraft, although some may store rotorcraft, as there is helicopter storage in an existing Hollis hangar. Although there is space for T-hangars and aprons, the Hollis area is expected to be developed with corporate hangars, each with a small apron which adjoins the existing taxiway. T-hangar development and aircraft to be tied down are expected to be directed toward EGAR, North and South areas.

Services and Businesses

The airports operations and maintenance facilities are located in the Hollis Lane Aviation Area. This provides a central mid-field location to concentrate employees, equipment, and services. The airfield landscaping facility remains outside of Hollis, in the North Ramp area, and is expected to be relocated to Hollis as the North Ramp is redeveloped. Space is available for expansion, as airfield operations and maintenance require.

The Hollis area is expected to be a good location for aviation-related businesses, to complement the one currently in operation. Space exists adjacent to Taxiway C which would likely be a good fit for aircraft maintenance and business support facilities. Although most sites have the ability to connect to airfield pavements, others could be configured for businesses and services requiring only landside use.



The existing Hollis taxiway accessing the hangar sites should be extended to connect to Taxiway A. Long-term, the existing taxiway traveling north from Taxiway C that ends after connecting to the Hollis taxiway 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.

The undeveloped area, bordered by Hollis Lane on the west, Taxiway B on the east, and Taxiway C on the south, has been and should continue to be reserved for larger aviation-related business, such as aircraft manufacturing or a large maintenance base. This site offers roadway frontage and access to airfield pavements. Depending on the facility desires and needs, consideration needs to be given to ATCT visibility requirements for Taxiway B and Runway 16L/34R, which could affect the facility's development.

The Hollis area benefits from an abundance of airport property (located north of the existing Hollis taxiway) that can likely be developed as opportunities present themselves. Although specific developments for these areas are not shown, many configurations of improvements can be accommodated, depending on the requirements and desires of the proposed improvement.

Wetland Impact

Improvements to the Hollis Area, as depicted in Exhibit 4-10, include several functional structures and paved surfaces, as well as a potential future aviation business. There would be wetland impacts in this area that could potentially be minimized or avoided. Most of the wetlands adjacent the current structures have been compensated for through historic fill permits, although wetland characteristics may have reestablished in some areas. Previous delineations indicate that there would be approximately 0.5 acres minimum predictable impact. The lane connecting Taxiway C and Taxiway A could potentially be shortened southerly to reduce impacts

4. Special Airport Facilities

4.1 Aircraft Rescue and Fire Fighting (ARFF) Facility (see Exhibit 4-11)

A new ARFF facility is needed to replace the current 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. To provide similar response time to each runway, midfield alternatives were considered, instead of the current site located south of the main passenger terminal building. The two sites considered are north of Taxiway C ("north site"), and south of Taxiway C ("south site"). Both alternatives are presented on Exhibit 4-11.

Comparison

Both alternatives are expected to provide adequate and similar response times. As most ARFF calls are to the passenger terminal and parking lots, the north site limits the ability of ARFF vehicles to access the southern airfield, which would be reached either by crossing an FAA ATCT-controlled movement area, or by traveling the lengthy route along public surface roads from the Hollis Lane Aviation Area to the passenger terminal. The south site has height restrictions to accommodate ATCT visibility requirements,



but it is expected that a suitable ARFF facility can be located at this site. This supports the south site as the preferred alternative.

The height restriction on the south site, based on an expected ARFF facility location, is approximately 26 feet. This allowable height decreases as the building extends away from the ATCT. Details of the ARFF facility design are expected to be confirmed once that project begins.

4.2 Aircraft Deicing Facility (see Exhibits 4-12 and 4-13)

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. As deicing generally occurs after passenger loading and before take-off, locating the deicing facility near the main passenger terminal building and along the way to primary Runway 16R/34L will likely prevent aircraft from having to deviate significantly from the main taxiway route.

Two alternatives are presented, both of which are expected to accommodate Boeing 757 aircraft. Adjustment of the facility to accommodate a larger or smaller aircraft may affect the deicing facility layout. Even though both options may disrupt aircraft ground movement, conditions requiring deicing at EUG are generally not regular, and are generally brief. Aircraft deicing increases aircraft safety, and the seeming inconvenience imposed by aircraft deicing on other airport activities should be second to the benefit and convenience provided.

Implementation of either alternative may require adjustment to aircraft taxiing procedures and to the FAA ATCT-controlled movement area. Both options are expected to have a vehicle staging area, an above-ground equipment shed, and an underground storage system. Either location is likely compatible with co-locating an aircraft wash facility ("wash rack"), as the collection and containment system can serve both deicing and aircraft washing operations, benefitting the environment.

Wetland Impact

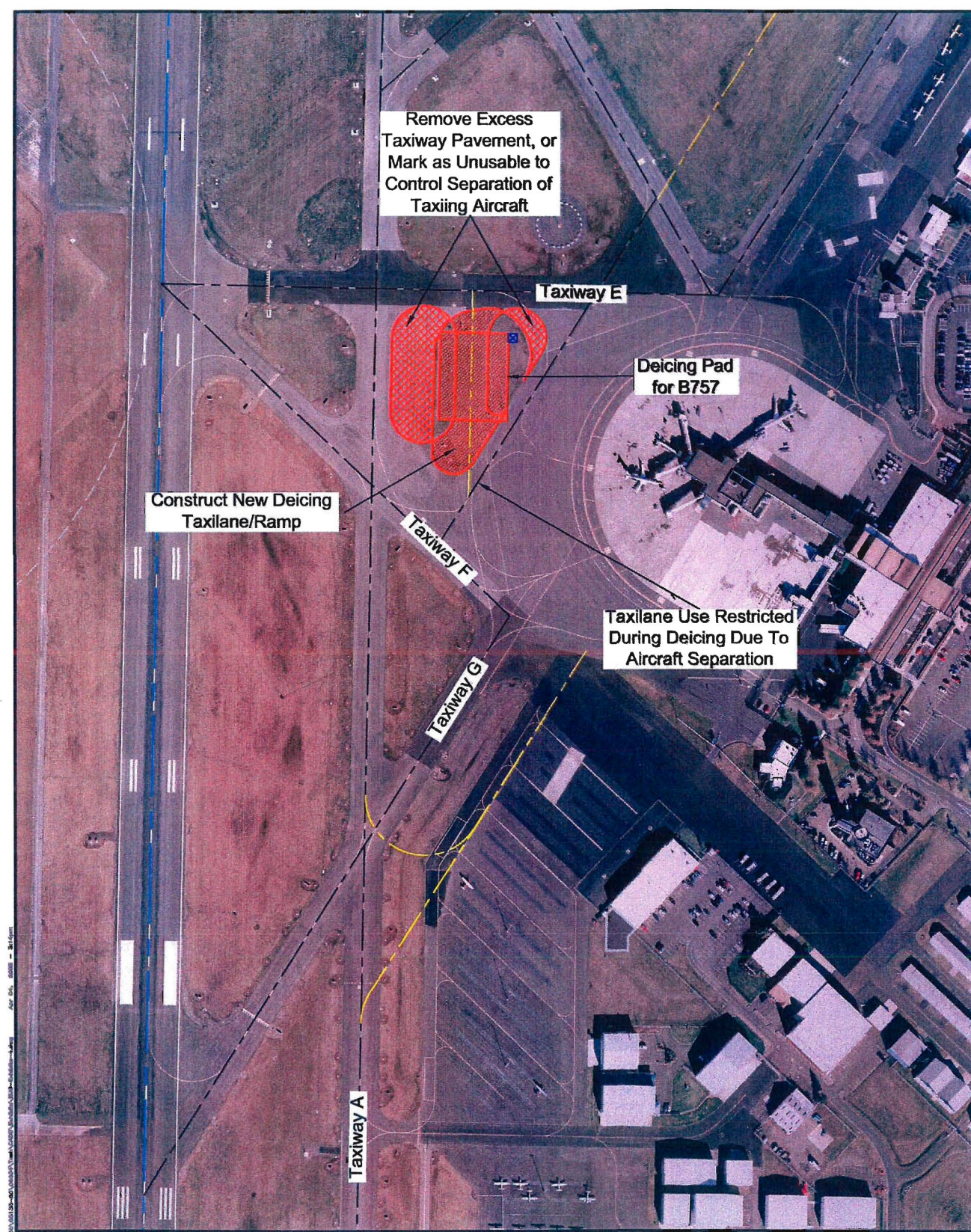
Neither alternative would have a significant affect on wetlands, although a wetland determination would need to be made for either site.





Eugene Airport Master Plan Update  Aircraft Rescue & Fire Fighting (ARFF) Facility Alternatives Exhibit 4-11





Eugene Airport
Master Plan Update

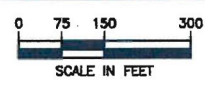
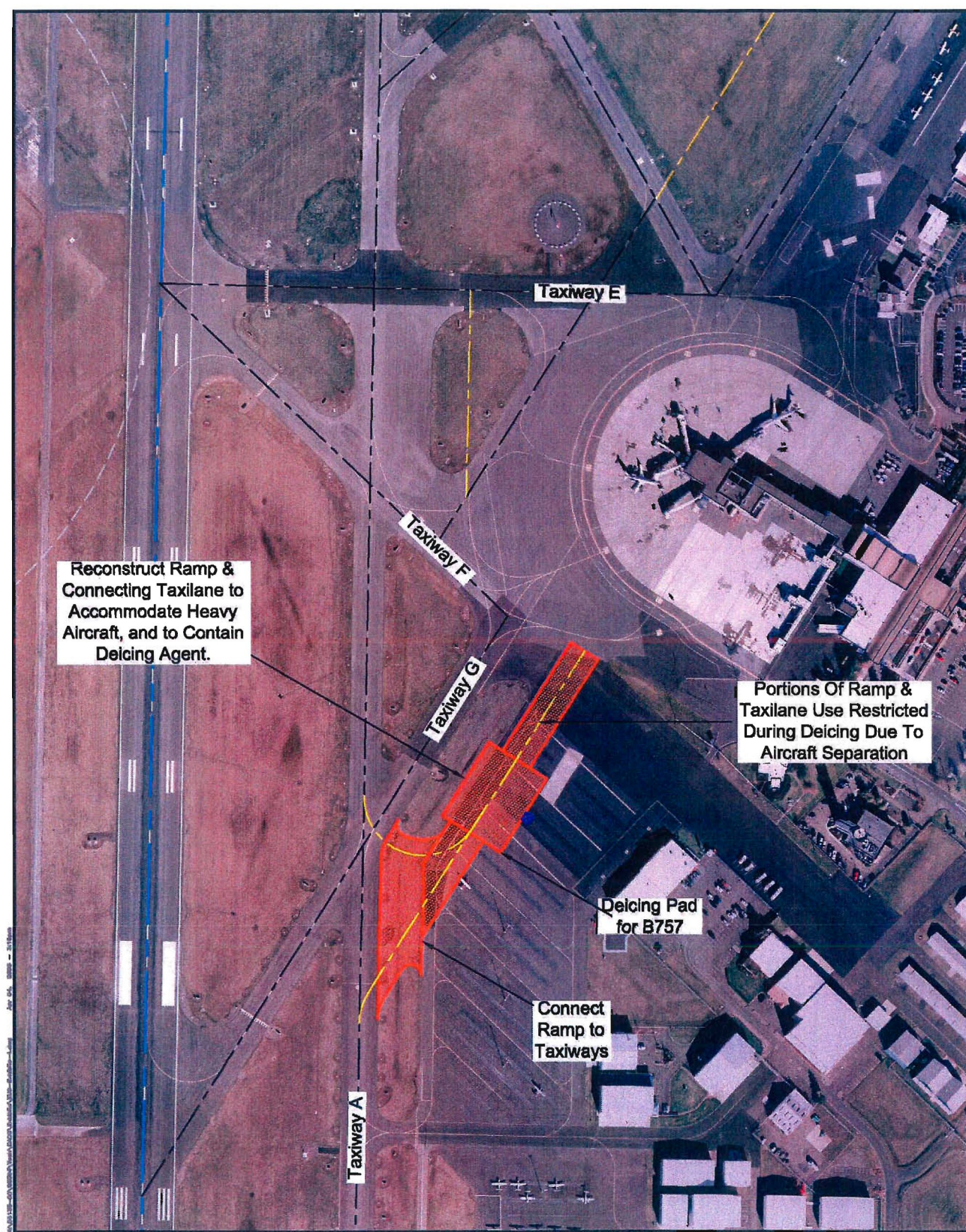


Exhibit 4-12
Deicing Facility Alternative 1





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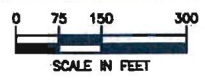


Exhibit 4-13
Deicing Facility Alternative 2



Deicing Facility Alternative 1

One option is to locate the deicing facility northwest of the main passenger terminal building. This site is along the taxiing routes from the terminal gates to Taxiway A. This location would require new pavement (connecting Taxiways E and F) to accommodate the aircraft and the deicing vehicles, and may require the removal or marking of some adjacent pavements as unusable to encourage aircraft separation. This northwest site is expected to allow aircraft to pass on Taxiways A, E and F as an aircraft is being deiced. However, the taxilane to the south of the deicing ramp (between the main apron and the deicing apron) would likely not be able to be used when an aircraft is being deiced. It may be that taxiing practices require additional pavement (at the northeast corner of the Taxiway A and E intersection) to accommodate aircraft turning and travel between the taxilane and the main taxiways.

Deicing Facility Alternative 2

A second option is to locate the deicing facility southwest of the main passenger terminal building, on the south ramp. This site is along the taxilane connecting the main apron to the south ramp aircraft parking area. This location would likely require the reconstruction of existing taxilane and ramp pavement to support heavier aircraft, and may require the relocation of the taxilane centerline (to the southeast) to provide adequate separation from Taxiway G. This option would also likely require additional pavement to connect the deicing pavements to Taxiway A. This southwest site would affect the availability of aircraft parking on the south ramp, including aircraft in line for access to Flightcraft hangar and services.

Comparison

Alternative 1 would restrict ground movement around the main apron and passenger terminal building while an aircraft was being deiced. Alternative 2 would do so in the event of aircraft had to queue for deicing, and therefore is expected to have less impact on terminal area ground movements. This supports Alternative 2 as the preferred alternative.

Alternative 1 may require additional pavement to accommodate taxiway turning from the deicing ramp, onto Taxiway E, and onto Taxiway A. This would likely increase the complication of the existing intersections of Taxiways A, E, and F with the main apron taxilanes. Alternative 2 may require additional pavements to be improved for larger and heavier aircraft to negotiate turns onto Taxiway A, but the improved pavements would likely be contained within the south ramp area. This supports Alternative 2 as the preferred alternative.

Alternative 1 would introduce pavement that is likely used only for deicing. The use of the south ramp for deicing, and the pavement improvements required to accommodate heavier aircraft, will likely result in the increased use of this generally underutilized ramp for activities besides deicing, such as larger aircraft parking and access to Flightcraft facilities. This supports Alternative 2 as the preferred alternative.

As one improvement alternative for the main passenger terminal building would shift aircraft ground movement and parking closer to the northwest site, the southwest site may be better suited to accommodate expansion of the main passenger terminal building. This supports Alternative 2 as the preferred alternative.



The activity and ground movement associated with aircraft washing (as the wash rack is introduced) is expected to be more frequent and more common than that associated with deicing, and the new facility is expected to be used more for washing than for deicing. For non-commercial and non-passenger aircraft to access the northwest site wash rack requires use of the terminal area taxiways, taxilanes, and ramp to travel through the main passenger terminal area. This is an opportunity to disrupt the flow of passenger aircraft and ground support. Accessing the wash rack on the south ramp would likely require less interference with the main passenger terminal activities. This supports Alternative 2 as the preferred alternative.

Wetland Impact

Neither alternative would have a significant affect on wetlands, although a wetland determination would need to be made for either site.

5. Automobile Parking and Circulation

5.1 Automobile Parking and Circulation (see Exhibit 4-14)

As passenger enplanements and aircraft operations at EUG are expected to increase, so is the automobile parking. A single, logical development scenario for expansion of the main passenger terminal automobile parking is presented. This is a refinement of previous plans to expand public and rental car auto parking.

Needs

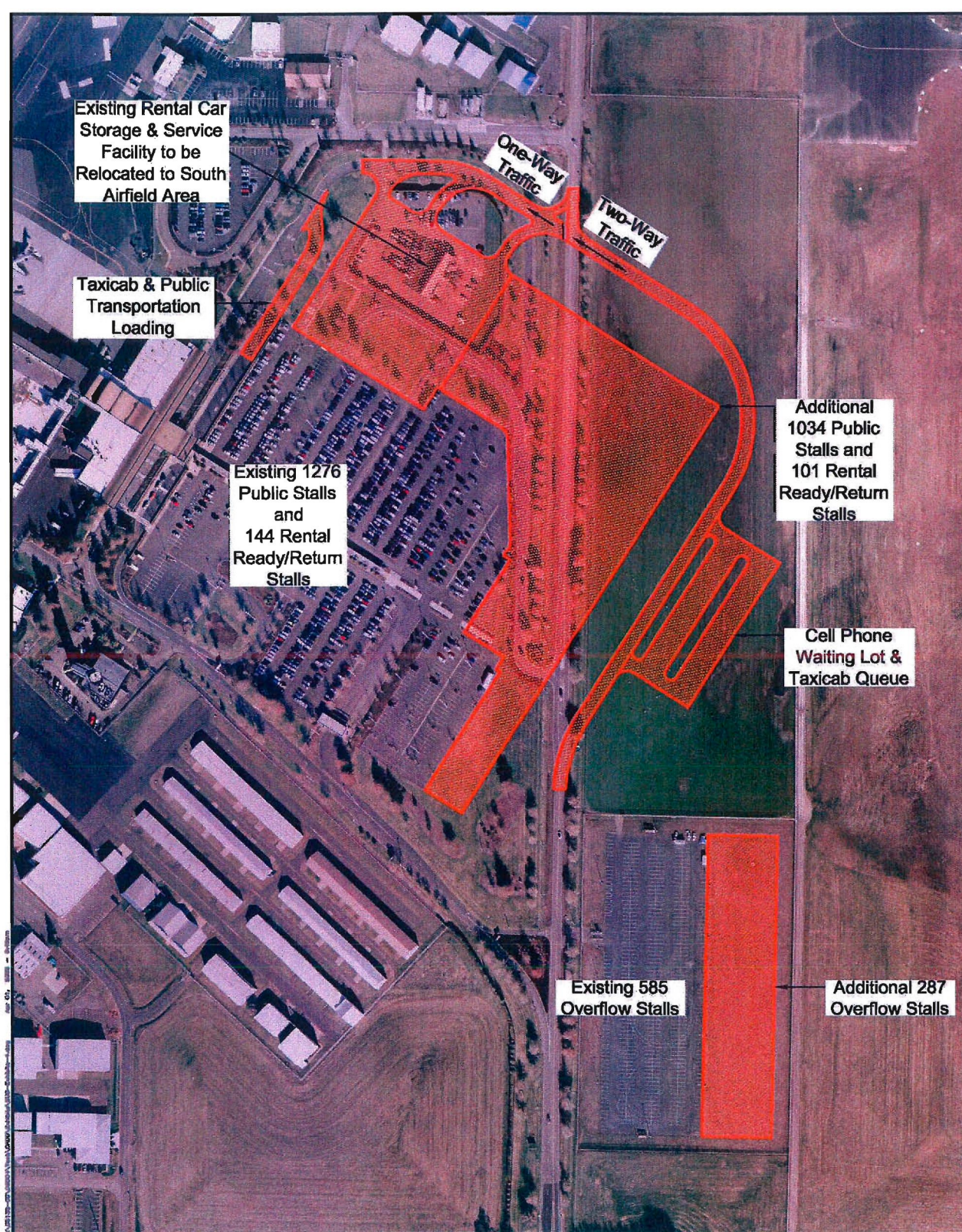
Chapter 3 identified the following needs: increase public automobile parking stalls from 1,276 to 2,310 (additional 1,034 stalls); increase rental car ready/return parking stalls from 144 to 245 (additional 101 stalls), and; increase rental car service/storage stalls from 116 to 280 (additional 164 stalls). An increase is also expected to be needed for the overflow lot, from 585 to 872 (additional 287 stalls).

Main Lot

The main lot currently houses 237 short-term stalls, 1,039 long-term stalls, and 144 rental car ready/return stalls, totaling 1,420 stalls. This needs to be increased to 2,310 public stalls and 245 rental car stalls, totaling 2,555 stalls. The existing 1,420 stalls cover approximately 513,000 square feet. This is a rate of approximately 360 square feet per stall (and approximately 120 stalls per acre). At this rate, an increase of 1,135 stalls would require an additional 410,000 square feet. This area should be added contiguous to the existing lot, and not as part of a new separate lot.

Regarding distribution of public stalls between short-term and long term, approximately 18% of the existing public stalls are short-term. As additional stalls are added, this percent should be adjusted downward based on lot occupancy, and on observations by and preferences of airport management to benefit customer service and passenger convenience.





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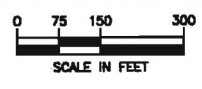


Exhibit 4-14
Automobile Parking Improvements



Overflow Lot

The overflow parking lot, located east of Douglas Drive, provides 585 stalls for peak passenger travel times, such as sporting events and holiday travel. By expanding east, there is space to increase the lot by approximately 50% to 872 stalls. Longer term expansion may also be accommodated by expanding north and south, as space is available and need arises. As the overflow lot is not regularly used for passenger parking, it is likely acceptable to have this lot separate from the main lot, and to continue to offer shuttling service for passengers between this lot and the terminal building for those peak periods of demand.

Rental Car Service Facility and Storage Lot

As the rental car service facility has fulfilled its useful and economical life, a new, modern, and larger facility is needed to provide more service space, and to accommodate the parking of vehicles queued for service, and those which have been serviced and await rental. The current 116 service/storage stalls at the existing facility are expected to need to be increased to 280. This increase of 164 cannot be accommodated at the existing site without sacrificing passenger automobile parking and the ability to expand the same.

As giving priority to passenger automobile parking enhances customer service and passenger convenience, the rental car service facility and storage lot (which are not required, by function, to be in such close proximity to the terminal building) will require relocation. Rental car service/storage operations are proposed to be relocated to the south airfield. This rental car service facility will likely see increased activity as passenger enplanements increase at EUG. The proposed south airfield site accommodates the future expansion of this facility, which could not be accommodated in the existing location.

As the rental car service/storage lot is relocated, this site can be converted for temporary uses until long-term improvements are implemented. Cell phone waiting lot, taxicab queue lot, rental car ready/return parking, and passenger automobile parking are all suitable uses for this site, until improvements for each of these additional facilities are developed, and the existing configuration is redeveloped for expansion of rental car ready/return and public parking.

Public Transportation and Taxicab Area

The Eugene metro area benefits from an expansive public transportation network, and as passenger movements at EUG increase, it is expected that the use of public transportation will also increase. As the primary EUG destination would likely be the main passenger terminal building, direct terminal access should be provided for public transportation.

As the main parking lot is expanded to the existing rental car service/storage area, there is expected to be space for additional taxicab parking/waiting, as an extension to the existing taxicab parking/waiting area, located between the terminal building and the main parking lot. The current taxicab area, and the expanded taxicab area, can also be used for public transportation transfer, between the buses and the terminal building. However, as the proposed taxicab queue lot is introduced as part of the realigned



Douglas Drive, it may be better and desirable to convert the existing taxicab parking/waiting to serve primarily public transportation loading and pedestrian movement, and shift taxicab queuing to the new lot.

Considerations

As the main automobile parking lot is expanded, it will approach Douglas Drive. In order to prevent passenger foot traffic from having to cross active roadways to access the passenger terminal, it is necessary to keep parking areas contiguous to each other and to the passenger terminal, and within the boundary roadway. Passenger foot traffic does cross the active roadway at the terminal building entrance/exit area, but the automobile traffic at this location is slowed to accommodate pedestrian loading and crossing.

Introducing a pedestrian overpass or underpass is one way to move passenger foot traffic across an active roadway. Such structures, often having extensive stairways, are generally perceived by the traveling public as lengthy and difficult, especially to travelers who are hurried and carrying luggage. Such a structure may also require an elevator on each side of the road, a feature that would increase cost and maintenance. The perception of the traveling public is more user-friendly if parking stalls provide access to the passenger terminal by way of a direct walk. As it is beneficial for EUG to be welcoming and user-friendly, pedestrian travel routes beside those provided at-grade are not otherwise considered at this time.

To keep the automobile parking within the loop access road (Douglas Drive), and to also add the required parking stalls, requires a relocation of Douglas Drive. The space exists to relocate Douglas Drive to accommodate the expanded parking, and the existing intersections can be adjusted to provide a safe and continuous traffic circulation pattern.

This realignment of Douglas Drive will shift access to the main lot from the existing eastern entrance to the northern side of the lot. This improvement will remove the need for passenger automobile traffic to make a left turn across oncoming traffic to enter the lot, which is required by the current road configuration. The realignment of Douglas Drive will introduce one way traffic (west of Northrop Drive), so the only traffic movement requiring left turns will be by automobiles from southbound Northrop Drive turning onto southbound Douglas Drive. As passenger automobile traffic is not expected to use Northrop Drive, left turn movements across oncoming traffic should be reduced.

Introducing an elevated, underground, or multi-story parking facility is one way to provide increased parking. Such structures are generally best suited for airports with constrained space, and with multi-story terminal access, and such a structure would likely increase cost and maintenance. As EUG is not in this situation, has available land, and does not desire such complication and extra cost, parking facilities besides those located on the surface are not otherwise considered at this time.

Land between existing Douglas Drive and Taxiway B which would otherwise be available for airside development is instead restricted in use by the visibility requirements of the Airport Traffic Control Tower (ATCT). As surface automobile parking does not affect ATCT visibility to the extent of hangars and terminal structures, automobile parking is expected to be a good use for this land. This compatibility was considered in the siting of the existing overflow lot, and gives support to the proposed locations of automobile parking and circulation improvements.



Additional parking in the main lot should be phased as needed. Initial additions will likely be able to occur without the relocation of Douglas Drive. Relocating the rental car service facility and storage lot to the south airfield area will make space available for additional parking without having to relocate Douglas Drive.

As Douglas Drive is relocated, there is expected to be space for a cell phone waiting lot and a taxicab queue lot. A cell phone waiting lot prevents automobiles from having to continually travel the airport loop road to await their arriving passengers by providing a lot for the automobile to park until the arriving party calls to notify they are ready to be met at the terminal. As opposed to short-term and long-term lots, cell phone waiting lots generally charge no fee to the automobile, and unattended parking is not permitted. A taxicab queue lot prevents an excessive number of cars for hire from congregating near the high-traffic terminal building exit as passengers emerge to request transportation; by providing a lot for the automobile to park until there is sufficient space in the terminal area for the cab to make itself available for hire. Taxicab procedures for entering the airport and soliciting fares would have to be established between airport management and taxicab operators. The cell phone waiting lot and taxicab queue lot should be implemented as the opportunity and need is presented.

Convenient automobile access and parking encourages use of the Airport by the local community. For EUG, that means ease of access to the Airport, ease of access from Airport roads to the parking lot, and ease of foot access from the parked automobile to the terminal building. In addition to providing an increase in automobile parking stalls, these improvements are also expected to provide an increase in customer service, which is a major goal of the Airport.

Other Areas

The new developments associated with the non-main passenger terminal areas (North Ramp, South Ramp, EGAR, and Hollis Area), as well as new services and businesses around the airfield, are expected to have their own parking developments adjacent to their facility, and do not create a demand on the main passenger terminal automobile parking lot. Parking for these facilities is not otherwise considered at this time.

Wetland Impact

Proposed automobile parking improvements, shown Exhibit 4-14, may have the single largest impact on wetlands. A wetland delineation (2007 Concurrence) by Coyote Creek identifies approximately 3.5 acres that would be impacted from this design. Overflow stalls are shown with very little impact incurred. The expansion of the parking facilities and waiting lot could initiate regulatory mitigation requirements beyond the actual footprint of the paved areas to include the area in between the waiting lot and the expanded parking (Increasing impact beyond 3.5 acres). Of all the wetland impacts reviewed, both potential and realized, proposed automobile parking improvements demand the most attention for potential wetland avoidance.



6. Airport Property

EUG has approximately 2,340 acres of land. Most of the Airport's property is required for the accommodation of the facilities, and for the associated buffer and safety areas. This land has been acquired over the years to meet the functional and operational requirements of the Airport, for safe navigation of aircraft, and for protection of people on the ground. Preserving land for this core function is one of the highest priorities of the Airport. Some parcels not required to support the core aviation function in the long-term may be available for airport compatible development, for the purpose of generating revenues which will enhance the long-term viability of the Airport. There are several land areas on the Airport that can accommodate different types and levels of development. Following is a discussion on some of those areas that, on a preliminary basis, appear to hold potential for such development. Following review of the alternative plan concepts presented in this element of the Master Plan Update, and subsequent recommendations on the preferred alternatives, this section will be revised accordingly.

As development opportunities are presented to the Airport and community, available land should be reviewed to determine the most suitable site. Depending on the nature of the development and the desired site, the property will likely require environmental review, and possibly mitigation, to allow for the new improvements. The area on and around the Airport is home to drainage, wetlands, and similar features. The Airport should continue coordination with governing agencies for the protection and monitoring of environmentally sensitive areas.



NOTE: Due to material changes in the economy in 2008 and 2009, as well as changed in the aviation industry, a Supplemental Financial Analysis was prepared. It is presented in Appendix B and supersedes portions of this chapter.

Financial Feasibility Analysis

This chapter, which presents the results of the feasibility analysis conducted, is organized as follows:

1. Airport Financial Structure
2. Capital Improvement Plan
3. Funding for the Program
4. Historical and Projected Airport Revenues
5. Historical and Projected Airport Operating Expenses
6. Historical and Scheduled Debt Service
7. Cash Flow Analysis and Overall Feasibility
8. Sensitivity Analyses



This chapter analyzes the capacity of the City of Eugene to undertake the recommended capital improvement plan (CIP) developed as part of this Master Plan Update. As presented herein, an investment totaling approximately \$119.38 million¹ is required between fiscal years 2008 and 2028 to complete the recommended aviation safety, preservation, security, and capacity enhancement projects included in this plan. As further described in this chapter, the following funding sources are anticipated to be available and utilized to complete the projects contained in this program:

Funding Source	Amount	Percent (%) of Total
FAA Entitlement	\$ 58,061,908	48.6%
FAA Discretionary	\$ 5,535,719	4.6%
Passenger Facility Charges	\$ 32,271,873	27.0%
Local (Capital/Operating Reserve)	\$ 15,901,500	13.3%
Customer Facility Charge Revenues	\$ 3,000,000	2.5%
Other Funding	\$ 4,610,000	3.9%
	\$ 119,380,000	100%

Of equal importance to the Airport's ability to garner sufficient funding to complete this capital plan is the need to understand the capability of the Airport to generate sufficient revenues to fund all anticipated operating expenses, contributions to reserve funds, and payment of debt service. To this end, this chapter includes an analysis of forecasted Airport operating revenues and expenditures, including annual contributions to said reserve funds.

¹ Total cost of the capital projects includes a 4% annual inflation factor.
 Eugene Airport Master Plan Update
 (February 2010)



The techniques utilized in this analysis are consistent with industry practices for similar studies which are used to evaluate the feasibility of large-scale airport capital improvement plans. While it is believed that the approach and assumptions are reasonable, it should be recognized that some assumptions regarding future trends and events might not materialize. Achievements of the proposed capital improvement plan as well as the operating results described herein are dependent upon the occurrences of future events and variations may be material.

In the context of examining both the capital improvement plan and operating revenues/expenditures, this financial feasibility analysis is based upon the following:

- The Airport's existing financial structure, airline agreements, and agreements with other major tenants.
- The historical financial performance of the Airport including its existing debt obligations.
- A schedule for the implementation of proposed capital projects for the entire 20-year planning period.
- Projections of enplaned passengers as presented in Chapter Two to derive Federal Aviation Administration (FAA) Airport Improvement Program (AIP) entitlements and Passenger Facility Charge (PFC) revenues.
- A funding plan for the capital improvement plan utilizing AIP entitlement and discretionary funds, PFC revenues, the Airport's Operating and Capital Reserve, Customer Facility Charge revenues and other funding.
- Historic revenues, expenses, and debt service for the Airport for the period FY 2003 through FY 2007.
- Budgeted revenues, expenses, and debt service for the Airport for fiscal years 2008 and 2009.
- Projections of revenues, expenses, and net cash flows from the operation of the Airport over the planning period of FY 2010 through FY 2016 based on historical actual (FY 2003-2007) and budgeted (FY 2008-2009) financial activity at the Airport.
- A detailed cash flow analysis for the planning period FY 2010 through FY 2016 identifying the sources and uses of funds applied to the CIP.²

Detailed financial projections of revenues and expenses included in this analysis focus on the more immediate years of the plan rather than the entire 20-year planning period; however, a detailed analysis of the availability of AIP and PFC funds to finance this period of the program are presented in order to provide the reader with an understanding of the feasibility of all elements of the plan.

1. Airport Financial Structure

The Airport is operated as the Airport Division of the Department of Public Works of the City of Eugene and its financial results are reported within the composite financial statements of the City. The City maintains discrete accounting records to account for the itemized revenues, expenses, and segregated funds of the Airport. The City of Eugene, and therefore the Airport, operates on a modified accrual basis for financial reporting based on a July 1 to June 30 fiscal year (FY). Accordingly, all information

² This represents the maximum time period considered reasonable.



contained in this analysis is presented in terms of the Airport's fiscal year detail as opposed to a calendar year basis. Because the Airport operates under a modified accrual based accounting system, revenues are recorded when they are earned and expenses are recognized when they are incurred. For purposes of considering the historical revenues and expenditures presented in this analysis, all functional categories and financial results parallel Exhibit 7, "Statement of Revenues, Expenses, and Changes in Fund Net Assets" contained in the City of Eugene's *Comprehensive Annual Financial Accounting Reports (CAFR) for Fiscal Years 2003-2007*. Moreover, all ensuing fiscal years projecting anticipated operating results align with these functional categories.

The City has established six broad functional areas for tracking Airport revenues, including the Airfield, Terminal Area, Common Use Area, Parking Area, Administration, and Other Areas while it reports Airport expenses in the following 10 functional areas:

1. Salaries and Labor
2. Employee Benefits
3. Maintenance & Repairs
4. Materials and Supplies
5. Rent
6. Taxes
7. Utilities
8. Contractual Services
9. Insurance
10. Central Services Administration

For the purposes of this analysis, these categories are maintained for ease of comparison. It should be noted that both the City and Airport Division track each area in much greater detail through an established financial reporting system; however, such detail is not required for purposes of this analysis.

The Airport has in effect an airline lease and use agreement (Use Agreement) with the scheduled airlines serving the Airport. The agreement establishes landing fees, terminal building rentals, and terminal building joint use and common use fees and is currently in effect through June 30, 2010. Under the terms of the Use Agreement, the signatory airlines serving the Airport pay a landing fee calculated at a rate per thousand pounds of landed weight, terminal building rental rates for areas for exclusive and preferential use, joint use fees for baggage and security areas used by all airlines, and common use fees for the use of, and services provided to, public use areas in the terminal building. The Airport collects 10 percent of the total rental requirement for joint use areas on a pro-rata basis from each of the signatory airlines. The remaining 90 percent of the requirement for joint use areas is collected from the airlines based on their respective share of passenger enplanements. The total common use fee requirement for the terminal building is collected from the airlines based on their respective share of passenger enplanements. For FY 2009, the landing fee is \$2.20 per thousand pounds of landed weight, the rental rate for exclusive and preferential space is \$29.86 per square foot per year, while joint use and customer use space are assessed \$0.58 and \$1.45 per passenger, respectively. The non-signatory airline landing fee charge is currently established at \$2.75 per thousand pounds of landed weight and non-signatory airline terminal rental fees are \$37.33 per square foot per year. These fees are incorporated into an Airport Fee Schedule



together with fees for non-signatory airlines and other Airport users. The City of Eugene City Council formally reviews, revises, and adopts this fee schedule annually.

This analysis assumes that the Airport will renew its Use Agreement with scheduled airlines for like rate periods and will assess airline rates and charges that will, at a minimum, cover the airlines' respective shares of airfield and terminal area expenses over the entire planning period.

2. Capital Improvement Plan

All airports receiving federal AIP funding are required to maintain a current CIP with the FAA which identifies projects to be undertaken at an airport over a specified period of time. This plan further estimates the order of implementation as well as calculates total project costs and funding sources.

The CIP presented herein incorporates all projects recommended as part of this Master Plan Update and is based on the near-term (FY 2008 through FY 2012), mid-term (FY 2013 through FY 2016), and long-term (FY 2016 through FY 2028) planning periods (and shown on **Exhibit 5-1**). The near-term period includes projects currently addressed in the Airport's existing CIP on file with the FAA, approved PFC applications 06-08-C-00-EUG and 08-09-C-00-EUG, the Airport's Customer Facility Charge (CFC) program, and the adopted City of Eugene Capital Improvement Plan. For the period FY 2013-2016, the most critical airport capacity and safety needs are programmed while the long-term period (FY 2016 through FY 2028) projects correspond to those facility requirements identified in previous chapters.

The CIP and its corresponding cost estimates are presented in **Table 5-1**. Cost estimates depicted in this table are based on a planning level of detail. While accurate for master planning purposes, actual project costs will likely vary from these planning estimates once project design and engineering estimates are developed. Costs as shown in Table 5-1 have been escalated for inflation (4% annually) to more accurately reflect anticipated construction-year dollar amounts. These costs also include contingencies and design and construction management costs. Each project was analyzed for AIP and PFC funding eligibility and a preliminary funding scenario was developed for each project from AIP, PFC, local, and private funding sources. As stated previously, the total cost of the CIP is estimated to be approximately \$119.4million.





Eugene Airport
Master Plan Update

Timeframe: Through 2011 (Green) 2012-2016 (Orange) 2017-2026 (Yellow) Private (Blue)

Capital Improvement Plan

Exhibit 5-1



Table 5-1
Eugene Airport
Master Plan Update
CAPITAL IMPROVEMENT PLAN
(page 1 of 4)

Year	Project	Total Cost	FAA Entitlement	Ent. Carryover	Project Funding Sources			
					Discretionary	PFC	Local	Other
2008	South Ramp Rehabilitation - Phase II - Mid-Section	\$550,000	\$522,500		\$0	\$0	\$27,500	\$0
	Terminal Ramp Rehabilitation - Phase I	\$1,200,000	\$0		\$0	\$1,200,000	\$0	\$0
	Air Cargo Expansion - Phase II	\$2,200,000	\$2,090,000		0	\$0	\$0	\$110,000
	Year 2008 Total Project Costs	\$3,950,000	\$2,612,500		\$0	\$1,200,000	\$27,500	\$110,000
	PROJECTED AVAILABLE FUNDING		\$2,653,342	\$40,842		\$1,506,532		
2009	Rental Car Service & Storage Facility	\$3,000,000	\$0		\$0	\$0	\$0	\$3,000,000
	Mitigation - Open Water - West of Runway End 34L	\$600,000	\$0		\$0	\$0	\$600,000	\$0
	ARFF Facility	\$4,400,000	\$0		\$4,180,000	\$0	\$220,000	\$0
	Taxiway Rehabilitation - A6 & F	\$840,000	\$798,000		\$0	\$0	\$42,000	\$0
	North Ramp Rehabilitation - Phase I - Far North	\$340,000	\$323,000		\$0	\$0	\$17,000	\$0
	Taxilene Rehabilitation - Hangar Access	\$200,000	\$190,000		\$0	\$0	\$10,000	\$0
	Terminal Ramp Rehabilitation - Phase II	\$1,400,000	\$1,330,000		\$0	\$0	\$70,000	\$0
	Year 2009 Total Project Costs	\$10,780,000	\$2,641,000		\$4,180,000	\$0	\$959,000	\$3,000,000
	PROJECTED AVAILABLE FUNDING		\$2,708,061	\$67,061		\$1,548,108		
2010	Passenger Parking - Phase I	\$2,200,000	\$0		\$0	\$0	\$2,200,000	\$0
	Terminal - Phase I - Baggage Screening	\$3,250,000	\$0		\$0	\$3,250,000	\$0	\$0
	South Ramp Rehabilitation - South Section	\$600,000	\$570,000		\$0	\$30,000	\$0	\$0
	North Ramp Rehabilitation - Middle Section	\$500,000	\$475,000		\$0	\$25,000	\$0	\$0
	Runway 34L/16R Overlay - Lights & Connecting Taxiway	\$3,000,000	\$1,717,781	\$0	\$1,132,219	\$150,000	\$0	\$0
	Year 2010 Total Project Costs	\$9,550,000	\$2,762,781	\$0	\$1,132,219	\$3,455,000	\$2,200,000	\$0
	PROJECTED AVAILABLE FUNDING		\$2,762,781	\$0		\$1,589,685		



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Year	Project	Total Cost	Project Funding Sources					
			FAA/AIP	Ent. Carryover	Discretionary	PFC	Local	Other
2011	Aircraft De-icing Facility	\$2,100,000	\$1,772,500		\$222,500	\$105,000	\$0	\$0
	Taxiway A Rehabilitation - Phase I (A7-A4)	\$1,100,000	\$1,045,000		\$0	\$55,000	\$0	\$0
	Terminal - Phase II - Airport Administration & Baggage	\$12,000,000	\$0		\$0	\$9,600,000	\$2,400,000	\$0
	Year 2011 Total Project Costs	\$15,200,000	\$2,817,500		\$222,500	\$9,760,000	\$2,400,000	\$0
	PROJECTED AVAILABLE FUNDING		\$2,817,500	\$0		\$1,631,261		
2012	Concourse B - One Gate & Ramp	\$1,900,000	\$0		\$0	\$1,900,000	\$0	\$0
	Airport Access Road Improvements	\$2,700,000	\$1,080,000		\$0	\$1,620,000	\$0	\$0
	Taxiway A Rehabilitation - Phase II	\$1,600,000	\$1,520,000		\$0	\$80,000	\$0	\$0
	Year 2012 Total Project Costs	\$6,200,000	\$2,600,000		\$0	\$3,600,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,872,220	\$272,220		\$1,657,117		
2013	Taxiway K Widening	\$1,300,000	\$1,235,000		\$0	\$65,000	\$0	\$0
	Taxilane - Non-Movement Area - EGAR to North Ramp	\$700,000	\$665,000		\$0	\$35,000	\$0	\$0
	Year 2013 Total Project Costs	\$2,000,000	\$1,900,000		\$0	\$100,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,926,940	\$1,026,940		\$1,682,972		
2014	Concourse C - Phase I - Two Gates & Ramp	\$11,000,000	\$2,960,968	\$1,299,160	\$0	\$6,739,872	\$0	\$0
	Year 2014 Total Project Costs	\$11,000,000	\$2,960,968		\$0	\$6,739,872	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,960,968	\$0		\$1,708,827		
2015	Hollis Taxilane - Short	\$800,000	\$760,000		\$0	\$40,000	\$0	\$0
	Master Plan Update	\$700,000	\$665,000		\$0	\$35,000	\$0	\$0
	Year 2015 Total Project Costs	\$1,500,000	\$1,425,000		\$0	\$75,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,994,997	\$1,569,997		\$1,734,683		



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Year	Project	Total Cost	Project Funding Sources					
			FAA/AIP	Ent. Carryover	Discretionary	PFC	Local	Other
2016	South Landside Access Road	\$500,000	\$0		\$0	\$0	\$500,000	\$0
	Environmental Assessment - Runway 34R Extension	\$300,000	\$285,000		\$0	\$15,000	\$0	\$0
	Year 2016 Total Project Costs	\$800,000	\$285,000		\$0	\$15,000	\$500,000	\$0
	PROJECTED AVAILABLE FUNDING		\$3,029,026	\$2,744,026		\$1,760,538		
2017	Mitigation/Drainage - Runway 34R Extension	\$1,000,000	\$950,000		\$0	\$50,000	\$0	\$0
	Year 2017 Total Project Costs	\$1,000,000	\$950,000		\$0	\$50,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,063,055	\$2,113,055		\$1,804,844		
2018	Runway 34R Extension	\$4,200,000	\$3,097,084	\$892,916	\$0	\$210,000	\$0	\$0
	Year 2018 Total Project Costs	\$4,200,000	\$3,097,084	\$892,916	\$0	\$210,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,097,084	\$0		\$1,849,151		
2019	Fuel Farm	\$5,200,000	\$2,600,000		\$0	\$0	\$2,600,000	\$0
	Year 2019 Total Project Costs	\$5,200,000	\$2,600,000		\$0	\$0	\$2,600,000	\$0
	PROJECTED AVAILABLE FUNDING		\$3,155,396	\$555,396		\$1,893,457		
2020	Terminal - Phase III - Airline Ticketing	\$8,600,000	\$3,213,709	\$4,526,291	\$0	\$860,000	\$0	\$0
	Year 2020 Total Project Costs	\$8,600,000	\$3,213,709	\$4,526,291	\$0	\$860,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,213,709	\$0		\$1,937,764		
2021	FAA Facility	\$4,500,000	\$0		\$0	\$0	\$0	\$4,500,000
	Year 2021 Total Project Costs	\$4,500,000	\$0		\$0	\$0	\$0	\$4,500,000
	PROJECTED AVAILABLE FUNDING		\$3,272,022	\$2,292,235		\$1,982,071		
2022	Passenger Parking - Phase II - Expand Overflow Lot	\$1,800,000	\$0		\$0	\$0	\$1,800,000	\$0
	Year 2022 Total Project Costs	\$1,800,000	\$0		\$0	\$0	\$1,800,000	\$0
	PROJECTED AVAILABLE FUNDING		\$3,330,335	\$3,330,335		\$2,026,377		



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Year	Project	Total Cost	Project Funding Sources					
			FAA/AIP	Ent. Carryover	Discretionary	PFC	Local	Other
2023	Concourse C - Phase II - Two Gates & Ramp	\$16,000,000	\$3,382,162	\$6,710,837	\$0	\$5,907,001	\$0	\$0
	Year 2023 Total Project Costs	\$16,000,000	\$3,382,162		\$0	\$5,907,001	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,382,162			\$2,070,684		
2024	Environmental Assessment - Passenger Parking - Phase III	\$300,000	\$295,000		\$0	\$0	\$15,000	\$0
	Year 2024 Total Project Costs	\$300,000	\$295,000		\$0	\$0	\$15,000	\$0
	PROJECTED AVAILABLE FUNDING		\$3,386,740	\$3,111,740		\$2,114,990		
2025	Passenger Parking - Phase III - Expand Main Lot/Relocate Douglas Driv	\$10,800,000	\$3,411,318	\$1,988,682		\$0	\$5,400,000	\$0
	Year 2025 Total Project Costs	\$10,800,000	\$3,411,318	\$1,988,682		\$0	\$5,400,000	\$0
	PROJECTED AVAILABLE FUNDING		\$3,411,318	\$0		\$2,159,297		
2026	Master Plan Update	\$800,000	\$760,000		\$0	\$40,000	\$0	\$0
	Year 2026 Total Project Costs	\$800,000	\$760,000		\$0	\$40,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,425,897	\$2,665,897		\$2,203,615		
2027	ARFF Access Road - Txy C to Txy A	\$200,000	\$190,000		\$0	\$10,000	\$0	\$0
	Year 2027 Total Project Costs	\$200,000	\$190,000		\$0	\$10,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,440,475	\$3,250,475		\$2,247,921		
2028	Airfield Maintenance Facility	\$5,000,000	\$3,455,057	\$1,294,943	\$0	\$250,000	\$0	\$0
	Year 2028 Total Project Costs	\$5,000,000	\$3,455,057	\$1,294,943	\$0	\$250,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$3,455,057			\$2,292,228		
TOTAL PROJECT COSTS FY 2008 - FY 2028		\$119,380,000	\$41,349,079	\$16,712,829	\$5,534,719	\$32,271,873	\$15,901,500	\$7,610,000

Note: Project costs reflect a 4% inflation factor, using 2008 as the baseline year.

Sources: City of Eugene, Department of Public Works
Mead & Hunt, Inc.

As shown in Table 5-1, the CIP is projected to be funded by outlays from the following sources: \$58,061,908 from AIP entitlement funds, \$5,534,719 from AIP discretionary funds, \$32,271,873 from PFC revenue (not inclusive of debt service on bonds issued for terminal and access road improvements), \$15,901,500 from local sources (the Airport's Operating and Capital Reserve and Depreciation Reserve Funds), \$3,000,000 from Customer Facility Charge revenues, and \$4,610,000 from other funding sources including a \$110,000 grant from "Connect Oregon" in FY 2008 for the Phase II Air Cargo Ramp Expansion Project, as well as a \$4.5 million allocation from the FAA's Facilities and Equipment Program in FY 2021 for a new FAA air traffic control facility.

The CIP presented in Table 5-1 does not include certain projects, such as general aviation hangars and private business developments, which may be funded by other private sources. For purposes of this analysis, it was assumed that tenant-financed projects would not be constructed until demand warrants (i.e., demand and unit user revenues make it feasible to develop and finance additional hangar facilities).

3. Funding for the Program

Based on the descriptions of the capital improvement projects presented in Table 5-1, the phasing of these projects, their associated costs, and eligible funding amounts as identified in the previous sections, a proposed funding plan for the Airport's CIP was developed. Federal participation in Airport capital development is based on the Airport Improvement Program as re-authorized in 2003. This analysis assumes continuance of AIP and PFC funding through the planning period without major changes. However, in the past, these programs have experienced fluctuations in levels of funding and interruptions in funding availability; therefore, it is imperative for Airport management to consider maintaining reserve funds to support Airport activities should such fluctuations and interruptions occur in the future. It is further recommended that since a host of the projects described in this plan are contingent upon sufficient aviation demand to support their ongoing operations upon completion, Airport management should closely examine the true need for their implementation prior to committing to undertaking project design and/or construction. In developing the funding plan for capital improvements, the controlling objectives were to maximize the use of resources from AIP and PFC funds and to minimize Airport/local funding requirements.

It is assumed that costs for the CIP will be generated from a combination of the following potential funding sources:

- Federal AIP Grants
- Passenger Facility Charges
- Airport Operating and Capital Reserves
- Customer Facility Charges
- Private Funding

These funding sources are discussed in further detail below.



3.1 Federal AIP Grants

Federal grants for the FY 2008 – 2028 Eugene Airport capital improvement plan are anticipated to be made available through the FAA's AIP program. The current AIP legislation provides both entitlement funds (based on annual enplaned passenger levels) and discretionary funds for eligible projects undertaken by an Airport sponsor. Projects that are eligible for FAA AIP funding were determined based on guidelines contained in FAA Order 5100.38A, *Airport Improvement Handbook*. As a general rule, only those Airport projects that are related to non-revenue producing facilities, such as airfield construction, public areas of a terminal, and land acquisition, are eligible for federal funding. Under most circumstances, projects that qualify for AIP funding are eligible for up to 95 percent of total project costs. Terminal development is eligible in non-revenue producing space for airports categorized as small hubs and non-hubs at 95 percent of eligible costs.

Under the AIP program, each primary airport is apportioned no less than \$650,000 per year; an airport's annual entitlement funds under the current program are determined according to the following formula:

- \$7.80 for each passenger boarding up to 50,000 passengers
- \$5.20 for each additional passenger boarding up to 100,000 passengers
- \$2.60 for each additional passenger boarding up to 500,000 passengers
- \$0.65 for each additional passenger boarding up to 1,000,000 passengers
- \$0.50 for each additional passenger boarding from 1,000,001 passengers and up

Based on recent historical and projected annual enplanement levels at the Airport, estimates of the Airport's federal entitlements for the period FY 2008 through FY 2028 are presented in **Table 5-2**. The projected entitlement funds presented in this table for each year are based on total enplanements at the Airport from the calendar year two years prior (i.e., entitlements for FY 2008 are based on enplanements from FY 2006).

As shown in **Table 5-2**, the Airport is projected to be eligible for a total of \$65,369,084 in AIP entitlement funds over the planning period. As shown in **Table 5-3**, a total of \$41 million of entitlement funding is to be used for the projects included in the CIP. Since the availability of AIP funding is expected to exceed the use of such aid, it is assumed that there will likely be adequate AIP entitlement funds to implement all anticipated projects presented in this CIP.

The AIP program also allows for discretionary funding to be made available from the FAA to provide financial support for major capacity or safety-related projects. The CIP, as presented in **Table 5-1**, anticipates FAA discretionary funds totaling approximately \$5,534,719 being made available for the Aircraft Rescue and Firefighting (ARFF) Facility, Runway 34L/16R Overlay and airfield lighting upgrades, and the Aircraft Deicing Facility. The likelihood of receiving the required level of discretionary funding is considered extremely high given the importance of these projects, in terms of improved safety and preservation of existing airfield infrastructure. In fact, the FAA has already programmed funding into its overall system for this work.



Table 5-2
Eugene Airport
Master Plan Update

**PROJECTED AIRPORT ENTITLEMENT FUNDS
AND PASSENGER FACILITY CHARGE REVENUE**

Fiscal Year	Projected Enplanements 1/	Projected Enplanements (2 yrs. Prior)	Entitlement Funds	Passenger Facility Charges 2/	Total Funds
2008	381,304	360,258	\$2,653,342	\$1,506,532	\$4,159,874
2009	391,827	370,781	\$2,708,061	\$1,548,108	\$4,256,170
2010	402,350	381,304	\$2,762,781	\$1,589,685	\$4,352,466
2011	412,873	391,827	\$2,817,500	\$1,631,261	\$4,448,762
2012	419,417	402,350	\$2,872,220	\$1,657,117	\$4,529,337
2013	425,961	412,873	\$2,926,940	\$1,682,972	\$4,609,912
2014	432,505	419,417	\$2,960,968	\$1,708,827	\$4,669,796
2015	439,049	425,961	\$2,994,997	\$1,734,683	\$4,729,680
2016	445,593	432,505	\$3,029,026	\$1,760,538	\$4,789,564
2017	456,807	439,049	\$3,063,055	\$1,804,844	\$4,867,899
2018	468,021	445,593	\$3,097,084	\$1,849,151	\$4,946,235
2019	479,235	456,807	\$3,155,396	\$1,893,457	\$5,048,854
2020	490,449	468,021	\$3,213,709	\$1,937,764	\$5,151,473
2021	501,663	479,235	\$3,272,022	\$1,982,071	\$5,254,093
2022	512,877	490,449	\$3,330,335	\$2,026,377	\$5,356,712
2023	524,091	501,663	\$3,382,162	\$2,070,684	\$5,452,846
2024	535,305	512,877	\$3,396,740	\$2,114,990	\$5,511,730
2025	546,519	524,091	\$3,411,318	\$2,159,297	\$5,570,615
2026	557,736	535,305	\$3,425,897	\$2,203,615	\$5,629,512
2027	568,950	546,519	\$3,440,475	\$2,247,921	\$5,688,396
2028	580,164	557,736	\$3,455,057	\$2,292,228	\$5,747,285
TOTAL PROJECTED REVENUE			\$65,369,084	\$39,402,122	\$104,771,206

Source: Mead & Hunt, Inc.

Note: 1/ Includes charters.

2/ Assumes a net collection of \$4.39 per eligible enplaned passenger.

Assumes 90 percent of the Airport's enplanements are eligible for PFC collection.



Table 5-3

Eugene Airport
Master Plan Update

CAPITAL IMPROVEMENT PLAN FUNDING ANALYSIS

Year	Capital Improvement Costs	Required FAA Entitlements	Cumulative Entitlement Funding Surplus (Shortfall)	Anticipated FAA Discretionary 1/	Passenger Facility Charges 2/	Required PFC Funds	Cumulative PFC Funding Surplus (Shortfall)	Required Local Funds 2/	Anticipated Other Funds 1/
2008	\$3,950,000	\$2,612,500	\$40,842	\$0	\$1,506,532	\$1,200,000	\$3,028,382	\$27,500	\$110,000
2009	\$10,780,000	\$2,641,000	\$107,903	\$4,180,000	\$4,576,490	\$0	\$4,576,490	\$959,000	\$3,000,000
2010	\$9,550,000	\$2,762,781	\$0	\$1,132,219	\$6,166,175	\$3,455,000	\$2,711,175	\$0	\$0
2011	\$15,200,000	\$2,817,500	\$0	\$222,500	\$4,342,437	\$1,177,420	\$3,165,017	\$0	\$0
2012	\$6,200,000	\$2,600,000	\$272,220	\$0	\$4,822,133	\$1,097,420	\$3,724,713	\$0	\$0
2013	\$2,000,000	\$1,900,000	\$1,299,160	\$0	\$5,407,685	\$1,117,420	\$4,290,265	\$0	\$0
2014	\$11,000,000	\$2,960,968	\$0	\$0	\$5,999,092	\$1,540,092	\$4,459,000	\$0	\$0
2015	\$1,500,000	\$1,425,000	\$1,569,997	\$0	\$6,193,683	\$1,615,092	\$4,578,591	\$0	\$0
2016	\$800,000	\$285,000	\$4,314,023	\$0	\$6,339,129	\$1,555,092	\$4,784,037	\$500,000	\$0
2017	\$1,000,000	\$950,000	\$6,427,078	\$0	\$6,588,881	\$1,590,092	\$4,998,789	\$0	\$0
2018	\$4,200,000	\$3,097,084	\$5,534,162	\$0	\$6,847,940	\$1,750,092	\$5,097,848	\$0	\$0
2019	\$5,200,000	\$2,600,000	\$6,089,558	\$0	\$6,991,306	\$1,540,092	\$5,451,214	\$2,600,000	\$0
2020	\$8,600,000	\$3,213,709	\$1,563,267	\$0	\$7,388,978	\$2,400,092	\$4,988,886	\$0	\$0
2021	\$4,500,000	\$0	\$3,855,502	\$0	\$6,970,956	\$1,540,092	\$5,430,864	\$0	\$4,500,000
2022	\$1,800,000	\$0	\$7,185,837	\$0	\$7,457,241	\$1,540,092	\$5,917,149	\$1,800,000	\$0
2023	\$16,000,000	\$3,382,162	\$0	\$0	\$7,987,833	\$2,137,093	\$5,850,740	\$0	\$0
2024	\$300,000	\$285,000	\$3,111,740	\$0	\$7,965,730	\$2,137,092	\$5,828,638	\$15,000	\$0
2025	\$10,800,000	\$3,411,318	\$1,123,058	\$0	\$7,987,934	\$2,137,092	\$5,850,842	\$5,400,000	\$0
2026	\$800,000	\$760,000	\$3,788,955	\$0	\$8,054,457	\$2,177,092	\$5,877,365	\$0	\$0
2027	\$200,000	\$190,000	\$7,039,429	\$0	\$8,125,287	\$2,147,092	\$5,978,195	\$0	\$0
2028	\$5,000,000	\$3,455,057	\$5,744,486	\$0	\$8,270,423	\$2,387,092	\$5,883,331	\$0	\$0
CIP TOTAL	\$119,380,000	\$41,349,079	\$16,712,829	\$5,534,719		\$36,240,641		\$11,301,500	\$7,610,000

Sources: City of Eugene, Department of Public Works
Mead & Hunt, Inc.Notes: 1/ It is anticipated that no surplus/shortfall will be experienced in these revenue sources over the planning period.
2/ A detailed cash-flow analysis that examines the Airport's ability to fund the required local share of project costs from the Operating and Capital and Depreciation Reserve Funds that the Airport maintains will be presented later in this analysis.

While such action is considered favorable, there is no guarantee that this aid will be made available until such time as the FAA releases grants for these respective projects. In addition, it should be noted that the FAA may require the Airport to fully obligate its entitlement funds prior to receipt of any AIP discretionary funding.

3.2 Passenger Facility Charges

In addition to AIP funding, the Airport has the ability to levy an Airport Passenger Facility Charge (PFC) to provide locally generated funds for implementation of its capital plan. PFC collection is authorized under the Aviation Safety and Capacity Expansion Act of 1990 and Part 158 of the Federal Aviation Regulations, the Passenger Facility Charge Program (14 CFR, Part 158). PFCs are collected for enplaning passengers at an airport and these funds are used to finance all or portions of capital improvements that are identified by the Airport Sponsor and approved by the FAA. To be eligible for PFC funding, a project must preserve or enhance safety, security, or capacity of the national air transportation system; reduce or mitigate airport noise from an airport; or provide opportunities for enhanced competition between or among air carriers.

The Airport began collecting PFCs in 1993. Since that time, the Airport has completed nine PFC applications with a total value of \$21.2 million and is currently levying and collecting a \$4.50 PFC. It is assumed that for purposes of this analysis the Airport will continue to collect a \$4.50 PFC over the entire planning period and will use revenues to implement eligible Airport improvement projects through FY 2028.³ The Airport's existing authority to impose a PFC expires in December 2011. Moreover, the Terminal Ramp Rehabilitation Project (Phase I) as well as the Relocate Baggage Screening Area project are currently included in an approved PFC application and are slated to be undertaken in Fiscal Years 2009 and 2010 respectively.

Table 5-2 indicates that PFC collections for the Airport are projected to total \$39.4 million over the planning period while Table 5-3 reveals that \$36.2 million in PFC revenue, including anticipated debt service payments, is anticipated to be used to fund portions of the projects identified in this CIP. Given the scope and magnitude of the Terminal – Phase II – Airport Administration & Baggage project (\$9.6 million PFC revenues), the Concourse B Expansion (\$1.9 million PFC revenues), the Concourse C – Phase I Expansion (\$6.7 million PFC revenues), and improvements to the Airport Access Road (\$1.6 million PFC revenues), it is proposed that the Airport consider issuing bonds backed by its future stream of PFC revenues to retire this debt and complete this work in a timely fashion. Table 5-8 in Section 6. Debt Service provides a debt service schedule for bonds issued in FY 2010 for the Terminal Phase II project, Concourse B expansion and Access Road improvements projects. In addition, this table assumes that in FY 2014 additional bonds will be issued for the Concourse C – Phase I expansion. These debt service assumptions are tracked in Table 5-3 in the annual "Required PFC Fund" calculations along with projects scheduled to be completed on a pay-as-you-go basis. Of the \$36.2 million in PFC revenue slated for use, approximately \$19.8 million is to be utilized to back the issuance of bonds for improvements to the air carrier access road as well as terminal building. As noted on Table 5-3, the Airport is expected to generate sufficient PFC revenues to retire all debt issued for this work and complete other pay-as-you-go projects as previously delineated in Table 5-1 provided airport

³ A separate financing scenario will be completed assuming a \$7.00 PFC, based on the likelihood Congress will ultimately allow this higher collection amount.



enplanements attain the growth projected in this plan. Finally, it will be necessary for the Airport to maintain its authority to impose a PFC for at least another five (5) years beyond the planning period since approximately \$21.0 million in outstanding payments will remain on these debt instruments at the close of Fiscal Year 2028. At that time, the Airport is forecasted to have a balance of approximately \$4.7 million in PFC revenues to utilize toward retiring these bonds.

3.3 Airport Operating and Capital Reserves

The Airport currently maintains an Operating and Capital Reserves Fund, which is utilized to underwrite the local share requirements of Airport projects, not funded with PFC or private capital. This fund is also used to address unexpected operating expenses. For purposes of this analysis, it is assumed that this fund is used to meet the local obligation for AIP and PFC eligible projects as well as for work deemed ineligible for AIP and PFC funding. Based upon information obtained from Airport management, it is assumed that a balance of \$3.3 million exists in this fund as of July 1, 2008.

A cash flow analysis (see Table 5-10 presented in Section 7. Cash Flow Analysis and Overall Feasibility) was performed to identify the likely impact that local share funding requirements of the recommended CIP from the Airport's Operating and Capital Reserves would have on the cumulative balance of that fund. In this cash flow analysis, the annual beginning balance of the Airport's Operating and Capital Reserve Fund was reduced by the amount required to fund the local requirements of the Airport's CIP projects for that year. The Airport's projected net revenue was then added to the Airport's Operating and Capital Reserve Fund to estimate the year-end balance of that fund. The year-end balance of the fund was then carried over to the succeeding fiscal year and the same process was followed. The results of this analysis are presented and examined in Section 7. Cash Flow Analysis and Overall Feasibility.

3.4 Customer Facility Charge

In 2006, the City authorized establishing a Customer Facility Charge (CFC) for all rental car transactions occurring at the Airport. Rental car companies collect the fees on behalf of the City and remit them to the Airport for use on capital expenditures and/or to fund operating expenditures associated with facilities constructed for the sole benefit of rental car customers. The Airport's CFC is currently set at \$2 per transaction day and the Airport collects approximately \$300,000/year from this dedicated revenue source. Funds accruing to the Airport as the result of this assessment are earmarked for the construction of a consolidated Rental Car Service and Storage Facility in FY 2009. Upon completion of construction, the Airport intends to continue to impose this fee in order to provide sufficient revenues for the operation, maintenance, and reserve funds required for this facility. It is anticipated that upon occupancy of the facility, the Airport may reassess the level of CFC and adjust it accordingly to ensure that the revenue generated each year does not exceed authorized uses.

3.5 Other Funding

Besides the sources of revenue identified to support the Capital Improvement Plan, other non-traditional means may be available, and should be explored. The FAA's Facilities & Equipment division has contributed to navigational aids at Eugene, and is expected to continue to be a funding partner for such improvements. The State of Oregon's *ConnectOregon* program, which recently funded the airport cargo facility, is expected to be renewed on an approximate biannual basis, and many of Eugene's projects could be candidates for *ConnectOregon* funds. And although relatively new to the airport environment,



the Transportation Security Administration may also become a financial source for airport improvements. Other public entities may be interested in partnering with the Eugene Airport for joint-use improvements. As developments are proposed, these and other local, state, and national funding sources should be evaluated.

3.6 Private Funding

In addition to projects listed in the Capital Improvement Plan, privately-funded improvements are also expected at the Airport. Aviation-related business, aircraft maintenance and manufacturing, flight training and education, museums, and hangars for FBO's, general aviation, and corporate aircraft are all welcome privately-funded developments. It is estimated that \$200 million of these types of projects could occur at Eugene over the next 20 years. These improvements would allow the Eugene Airport to continue its support of aviation activity, expand its service to the community, and increase its contribution to economic development.

4. Historical and Projected Airport Revenues

Table 5-4 depicts the Airport's historical revenues from FY 2003 through FY 2009. As shown in Table 4, the major source of non-airline revenue for the Airport during this period has been the public parking facility while rental auto concession fees have also represented relatively significant portions of the Airport's revenue base in these years. Collectively, these sources of revenue are anticipated to account for approximately 72 percent of non-airline fees during fiscal year 2009.

It is noteworthy that between FY 2003 and FY 2009, the Airport reduced its reliance on airline rents and fees resulting in a more diverse mix of overall revenue. In FY 2003, total airline revenues, including landing fees, Terminal Building Common Use/Preferential/Exclusive rents totaled \$3,141,524 representing 47.5 percent of all revenue collected by the Airport in that year. In 2009, airline revenue is expected to total \$2,591,611, comprising only 35.5 percent of total airport revenues. This decrease in reliance on airline fees and rents created a decrease in a key efficiency benchmark for airlines; the airline cost per enplaned passenger. This indicator is utilized to convey the relative "cost of doing business" for an airline at an airport as reflected in its ability to spread its expense associated with renting and utilizing airport facilities among its passengers.

For Eugene, this indicator dropped from \$7.21 per enplaned passenger in FY 2004 to \$6.46 per enplaned passenger in FY 2009 (budgeted). Finally, it should also be noted that because of the growth in airport parking revenue and rental car concession fees, the Airport's overall revenue base expanded 10.3 percent or approximately 2 percent per year during this period.

Estimates of the Airport's future revenues were developed based on historical trends from FY 2003 through FY 2008, the terms of the Airport's Use Agreement with the signatory airlines; the Airport's FY 2009 adopted budget, as well as an analysis of future revenue potential of the Airport. **Table 5-5** presents budgeted revenues for FY 2009 and projected revenues for the period from FY 2010 through FY 2016, the end of the mid-term planning period for the Airport's CIP.



Table 5-4
Eugene Airport
Master Plan Update
HISTORICAL AIRPORT REVENUES

	Historical					Budget 2008	Proposed 2009
	2003	2004	2005	2006	2007		
AIRLINE REVENUES							
LANDING AREA							
Airline Landing Fees - Scheduled	967,084	1,133,779	1,119,703	1,138,042	970,393	976,516	1,086,733
COMMON USE AREAS							
Airline Common Use Fee	524,756	492,486	515,709	605,576	671,876	704,633	710,686
Airline Security Charges	523,962	110,837	215,492	133,134	114,774	123,254	162,084
TERMINAL AREA							
Airline Leased & Joint Use Areas	754,601	738,000	835,190	926,170	678,011	708,426	632,108
PREVIOUS YEAR AIRLINE ADJUSTMENTS	371,121	(144,963)	(91,535)	(67,982)	(258,977)	0	0
Total Airline Revenue	\$3,141,524	\$2,331,139	\$2,594,559	\$2,734,940	\$2,176,077	\$2,512,829	\$2,591,611
NON-AIRLINE REVENUES							
AIRFIELD AREA							
Hangar Rentals	180,820	174,168	128,166	152,146	230,439	178,175	180,367
Fuel Flow Fees	53,487	49,871	54,242	51,653	49,534	53,169	63,000
Tie-Down Fees	10,942	10,784	10,649	10,281	10,220	10,635	10,335
Fixed Based Operators	57,268	60,237	60,215	63,594	61,444	63,408	56,135
Ground Fuel	1,511	1,886	13,094	8,393	2,206	2,015	2,310
Non-Airline Landing Fees	128,111	107,045	85,675	102,423	81,298	106,000	106,000
TERMINAL AREA							
Rental Auto Concessions	656,899	679,118	773,335	803,351	813,260	857,480	857,876
Food and Beverage Services	142,483	118,737	53,281	62,082	56,176	64,000	64,000
Miscellaneous Terminal Facilities	205,324	187,232	196,573	226,375	229,060	287,457	266,457
Security-LEO Reimbursement/Fingerprints	338,865	324,806	323,578	278,178	318,524	302,679	210,108
PARKING AREA							
Public Parking Facility	1,579,986	1,754,845	2,126,543	2,308,328	2,378,751	2,307,408	2,525,206
ADMINISTRATION							
Administrative Revenue (Interest)					269,233	21,606	
OTHER AREAS							
Other Building Rentals	142,057	240,865	215,439	228,917	236,530	219,618	220,905
Other Land Rentals	94,774	100,836	93,897	83,807	78,128	78,891	90,559
Miscellaneous Revenue	(119,201)	13,431	119,143	(64,759)	155,474	68,640	51,392
Total Non-Airline Revenue	\$3,473,326	\$3,823,661	\$4,253,629	\$4,314,789	\$4,970,276	\$4,621,181	\$4,704,650
TOTAL AIRPORT REVENUE	\$6,614,850	\$6,154,800	\$6,848,388	\$7,049,709	\$7,146,353	\$7,134,010	\$7,296,261
AIRLINE COST PER ENPLANEMENT	303,864	323,244	361,272	356,830	363,785	381,974	401,073
	\$10.34	\$7.21	\$7.18	\$7.66	\$5.98	\$6.58	\$6.46

Source: City of Eugene, Department of Public Works
CAGR = Compounded annual growth rate.





Table 5-5
Eugene Airport
Master Plan Update
PROJECTED AIRPORT REVENUES

	FY 2007 Actual	Budget 2008	Proposed 2009	Projected						
				2010	2011	2012	2013	2014	2015	2016
AIRLINE REVENUES										
LANDING AREA										
Airline Landing Fees - Scheduled	\$970,393	\$976,516	\$1,086,733	\$1,108,468	\$1,130,637	\$1,153,250	\$1,176,315	\$1,199,841	\$1,223,838	\$1,248,315
COMMON USE AREAS										
Airline Common Use Fee	671,876	704,633	710,686	\$748,220	\$783,531	\$822,708	\$863,843	\$907,035	\$952,387	\$1,000,007
Airline Security Charges	114,774	123,254	162,084	165,328	168,632	172,005	175,445	178,954	182,533	186,184
TERMINAL AREA										
Airline Leased Areas	678,011	708,426	632,108	644,750	657,645	772,798	788,254	804,019	820,099	836,501
PREVIOUS YEAR AIRLINE ADJUSTMENTS	(258,977)	-	-	-	-	-	-	-	-	-
Total Airline Revenue	\$2,176,077	\$2,512,829	\$2,591,611	\$2,664,764	\$2,740,446	\$2,920,761	\$3,003,857	\$3,089,849	\$3,178,857	\$3,271,006
NON-AIRLINE REVENUES										
AIRFIELD AREA										
Hangar Rentals	\$230,439	\$178,175	\$180,367	\$ 183,974	\$ 187,654	\$ 191,407	\$ 195,235	\$ 199,140	\$ 203,123	\$ 207,185
Fuel Flow Fees	49,534	53,169	63,000	64,890	66,837	68,842	70,907	73,034	75,225	77,482
Tie-Down Fees	10,220	10,635	10,335	10,438	10,543	10,648	10,755	10,862	10,971	11,081
Fixed Based Operators	61,444	63,408	56,135	56,696	57,263	57,836	58,414	58,998	59,588	60,184
Ground Fuel	2,206	2,015	2,310	2,472	2,645	2,830	3,028	3,240	3,467	3,709
Non-Airline Landing Fees	81,298	106,000	106,000	109,180	112,455	115,829	119,304	122,883	126,570	130,367
TERMINAL AREA										
Rental Auto Concessions	\$813,260	\$857,480	\$857,876	\$ 900,770	\$ 945,808	\$ 993,099	\$ 1,042,754	\$ 1,094,891	\$ 1,149,836	\$ 1,207,118
Food and Beverage Services	56,176	64,000	64,000	67,200	70,560	74,088	77,792	81,682	85,766	90,054
Miscellaneous Terminal Facilities	229,060	287,457	266,457	277,115	288,200	299,728	311,717	324,186	337,153	350,639
Security-LEO Reimbursement/Fingerprints	318,524	302,679	210,108	210,108	210,108	210,108	210,108	6,000	6,180	6,365
PARKING AREA										
Public Parking Facility	\$2,378,751	\$2,307,408	\$2,525,206	\$2,676,718	\$2,837,321	\$3,007,561	\$3,188,014	\$3,379,295	\$3,582,053	\$3,796,976
ADMINISTRATION										
Administrative Revenue (Interest)	\$269,233	\$21,606	\$0							
OTHER AREAS										
Other Building Rentals	\$236,530	\$219,618	\$220,905	\$227,532	\$234,358	\$241,389	\$248,631	\$256,089	\$263,772	\$271,685
Other Land Rentals	\$78,128	\$78,891	\$90,559	\$1,465	\$2,379	\$3,303	\$4,236	\$5,178	\$6,130	\$7,092
Miscellaneous Revenue	\$155,474	\$68,640	\$51,392	\$1,906	\$2,425	\$2,949	\$3,479	\$4,014	\$4,554	\$5,099
Total Non-Airline Revenue	\$4,970,276	\$4,621,181	\$4,704,650	\$4,930,465	\$5,168,557	\$5,419,616	\$5,684,374	\$5,759,493	\$6,054,187	\$6,365,037
TOTAL AIRPORT REVENUE	\$7,146,353	\$7,134,010	\$7,296,261	\$7,595,229	\$7,909,002	\$8,340,377	\$8,688,231	\$8,849,343	\$9,233,045	\$9,636,043

Sources: Actual, budget and proposed - City of Eugene, Department of Public Works.
Projected - Mead & Hunt, Inc., and Airport Management.

Revenue at the Airport consists of both operating revenue generated through the operating cycle of the Airport and non-operating revenue generated through such sources as investment income and other non-aviation related rentals and fees. For purposes of this analysis, Airport revenues have been classified as airline revenue and non-airline revenue, with projections made by major source of revenue within each of the following classifications:

- Airline Landing Fees
- Airline Common Use Fees
- Airline Lease and Joint Use Fees
- Airfield Area Revenue
- Rental Auto Concession Fees
- Food and Beverage Revenue
- Miscellaneous Terminal Facility Revenue
- Public Parking Facility Revenue
- Other Revenue

4.1 Airline Landing Fees

Scheduled commercial airlines operating at the Airport are currently charged a landing fee of \$2.20 per thousand pounds of landed weight. Pursuant to the provisions of the current Airport and airline use agreement, the airfield cost center ratemaking methodology is based upon a residual approach which is calculated by dividing estimated annual landed weight of signatory aircraft arrivals by the net airfield cost allocated to the airlines (both direct and indirect costs of the Airfield less other Airfield Revenues). Total airline landing fee revenue for FY 2009 is budgeted to be \$1,086,733. Projections of future airline landing fee revenues are based on projected net costs allocated to the signatory airlines each fiscal year. As shown in Table 5-5, landing fee revenues for scheduled airline activity at the Airport are projected to increase from \$1,086,733 in FY 2009 to \$1,248,315 in FY 2016, representing a compounded annual increase of approximately 2.0 percent.

4.2 Airline Common Use Fees

Common use fees represent charges to airlines for a portion of the total expense required to maintain public areas in the terminal building. The total common use fee requirement for the terminal building is collected from the airlines based on their respective share of passenger enplanements. The collection of an airline common use fee was initiated in FY 1997 under the terms of the Use Agreement with the airlines. Airline common use fee revenue has increased from \$524,756 in FY 2003 to \$710,686 in FY 2009 and as shown in Table 5-5, this source of revenue is projected to increase from \$710,686 in FY 2009 to \$1,000,007 in FY 2016.

4.3 Airline Lease and Joint Use Fees

Rentals and fees from airline leased areas and joint use area fees represent Airport revenue from areas used exclusively, preferentially, or jointly by airlines operating at the Airport. Airport terminal building rental rates, which represent annual fees applied for areas rented by a tenant for exclusive and preferential use, are currently set at \$29.86 per square foot. Airlines are also charged for their joint use of other areas and facilities in the terminal building. Airline joint use fees are paid to cover the cost of



operating baggage and security areas used by all airlines. The Airport allocates 10 percent of the total rental requirement for these joint use areas equally among the airlines, and the remaining 90 percent of the requirement to the airlines based on their respective share of passenger enplanements at the Airport. Airline lease and joint use fees fluctuated between \$756,601 in FY 2003 to \$632,108 in FY 2009 and as shown in Table 5-5, this category of Airport revenue is projected to increase to \$836,501 in FY 2016. For purposes of this analysis, it is assumed that the airlines are charged for the cost of two (2) additional Airport employees associated with the Phase II Terminal Building Expansion Project in FY 2012. Accordingly, a compounded annual increase of 2.0 percent was applied to revenue estimates for each year between 2009 and 2016, while an additional \$100,000 in airline lease and joint use fees is expected to be collected starting in FY 2012 to recoup the Airport's costs for personnel associated with this project.

4.4 Airfield Area Revenue

For purposes of this analysis, airfield area revenue includes the following: revenues collected from non-airline (charter and air cargo carriers) landing fees, the rental of conventional and T-hangar lease sites and facilities from private and corporate lessees, revenues from fixed base operators (FBOs) leases, site and facility fees, revenues from per gallon fuel flowage fees on all aircraft fuel sold at the Airport, and revenues from the rental of aircraft tie-down facilities. Total airfield area revenues decreased from \$432,139 in FY 2003 to \$418,147 in FY 2009, primarily due to a decrease in non-airline landing fees. Total airfield area revenues are projected to increase from \$418,147 in FY 2009 to \$490,008 in FY 2016, representing a compounded annual growth rate of approximately 2.8 percent and spurred by increases in hangar rental revenue and collection of non-airline landing fees during this period.

4.5 Rental Auto Concession Revenue

Rental auto concession revenue includes all fees associated with rental auto agency operations at the Airport including terminal area counter space, percentage of sales fees, and ready/return and service/storage area parking spaces. Rental auto concession revenues have increased from \$656,899 in FY 2003 to \$857,876 in FY 2009. Projections of future rental auto concession revenues were developed based on projected passenger activity levels and assumptions regarding the service/storage area expansions identified in the CIP. As shown in Table 5-5, rental auto concession revenue is projected to increase from \$857,876 in FY 2009 to \$1,207,118 FY 2016, representing a compounded annual growth rate of approximately 5.0 percent.

4.6 Food and Beverage Service Revenue

Food and beverage service revenue represents minimum rental charges and percentage fees collected from restaurants located in the terminal building. This source of revenue decreased significantly between FY 2003 and FY 2009 due to the impacts of September 11, 2001 and decreased flow of customers available to concessionaires beyond the security checkpoint since this area was restricted to ticketed-only passengers. During the past six years, the Airport completed modifications to its food and beverage concession space to allow for increased retail offerings prior to passenger security screening. While food and beverage service revenue dropped sharply between FY 2003 and FY 2005, some modest increases have occurred since that time. It is expected that this source of revenue will increase from a proposed FY 2009 level of \$64,000 to \$90,054 in 2016; representing a compounded annual growth rate of approximately 5 percent.



4.7 Miscellaneous Terminal Facility Revenue

This revenue category includes rent receipts for the gift shop as well as advertising space in the Airport's terminal building and revenue from services made available to passengers in the terminal including automatic teller machines and baggage cart rentals. Revenues from these sources have increased from \$205,324 in FY 2003 to \$266,457 in FY 2009. As shown on Table 5-5, it is anticipated that these revenue streams will increase from a proposed level of \$266,457 in FY 2009 to \$350,639 in FY 2016 assuming continuation of a 4 percent annual growth rate in this category of revenue.

4.8 Public Parking Facility Revenue

Public parking facility revenues represent the Airport's share of fees collected for all public parking facilities. Under a contractual agreement with Standard Parking Company, the Airport pays a certain percentage of total parking revenue to this private concessionaire for management of its public parking operations. This concession agreement is scheduled to expire in June 2010 and the Airport currently pays 8.74 percent of total parking revenue to Standard Parking Company under this agreement. Airport parking revenues from this contractual arrangement increased from \$1,579,986 in FY 2003 to an expected level of \$2,525,206 in FY 2009; translating to a compound annual growth rate of 8 percent during this period. It should be noted that between FY 2003 and FY 2009, the Airport constructed an additional 300 stalls. Future projections of public parking revenue are based on projections of passenger activity. As shown in Table 5-5, public parking revenue is projected to increase from an expected level of \$2,525,206 in FY 2009 to \$3,796,976 in FY 2016.

4.9 Other Revenue

The other revenue category is comprised mostly of revenues collected from the rental of Airport owned lands to area farmers and building office space to businesses. This category of revenue increased from \$236,831 in FY 2003 to \$362,856 in FY 2009. Future levels of other revenue were projected individually based on various factors including Airport expansion plans, tenant lease agreements, and projected changes in passenger activity levels at the Airport. This source of revenue is projected to reach \$423,876 in FY 2016.

4.10 Summary of Airport Revenue

As shown in Table 5-5, total revenues at Eugene Airport are projected to increase from \$7,296,261 in FY 2009 to \$9,636,043 in FY 2016; representing a compounded annual growth rate of approximately 4.0 percent. These projections were developed by examining several key business factors that have an impact on major elements of Airport revenue; therefore, actual levels of future revenue may differ from these projections. Examples of some factors that could impact future levels of Airport revenue include changes in the level of passenger activity at the Airport and the entry of another airline.

Additional revenue opportunities, generated through the lease of land not needed for aviation purposes, are presented in Section 8.3.



5. Historical and Projected Airport Operating Expenses

The Airport's historical operating expenses for FY 2003 through FY 2009 are presented in **Table 5-6**. As shown in this table, personnel expenses (including salaries, labor, and employee benefits) have consistently represented the largest category of Airport expenditures over these years. It is expected that during FY 2009 personnel costs will total \$3,680,839 and represent approximately 56 percent of all operating expenses of the Airport. The next largest components of total Airport operating expenditures are materials and supplies (\$817,951), contractual services (\$519,040), utilities (\$415,329), maintenance and repair (\$308,233), and rent (\$224,500).

Estimates of the Airport's future operating expenses were developed based on a review of historical trends, the Airport's FY 2009 expenses, and incremental adjustments that might occur due to facility expansions planned at the Airport over the projection period. **Table 5-7** presents actual FY 2007 expenses, budgeted expenses for fiscal years 2008-2009, and projected operating expenses for the period FY 2010 through FY 2016. For purposes of this analysis, expenses at the Airport are examined in the following classifications:

- Salaries and Labor
- Employee Benefits
- Maintenance and Repairs
- Utilities
- Contractual Services
- Insurance
- Summary of Projected Total Airport Expense

These operating expense categories represent all expenses associated with the day-to-day operations of the Airport. Each expense category, and the assumptions used to project expenses for each, is discussed in the following sections.

5.1 Salaries and Labor

Salaries and labor represent personnel expenditures for Airport management, administrative, fire department, and operations and maintenance employee salaries and wages. Between FY 2003 and FY 2009, these costs increased from \$1,946,366 to \$2,379,173. As shown in **Table 5-7**, future salaries and labor expenses are projected to increase from \$2,379,173 in FY 2009 to \$3,000,276 in FY 2016, representing a compounded annual increase of approximately 3.0 percent. These projections were developed based on an estimated rate of inflation as well as the need to hire two (2) additional Airport Maintenance Workers in FY 2012 to support the expanded terminal building.

5.2 Employee Benefits

Employee benefits expenses include fringe benefit costs, such as employee wage-related taxes, health care, and employee pension. Employee benefits increased from \$899,385 in FY 2003 to \$1,301,666 in FY 2009. This category of Airport operating expense is projected to increase approximately 6.0 percent per year from FY 2009 to FY 2016 from \$1,301,666 in FY 2009 to \$2,005,401 in FY 2016.





Table 5-6
Eugene Airport
Master Plan Update
HISTORICAL AIRPORT OPERATING EXPENSES

	2003	2004	Historical 2005	2006	2007	Budget 2008	Proposed 2009
OPERATING EXPENSES							
Salaries and Labor	\$ 1,946,366	\$ 1,813,682	\$ 1,761,833	\$ 1,872,203	\$ 1,979,789	\$ 2,336,643	\$ 2,379,173
Employee Benefits	899,385	1,033,431	1,013,243	1,107,381	1,127,680	1,197,122	1,301,666
Maintenance and Repairs	179,876	238,953	253,252	306,889	269,160	279,860	308,233
Materials & Supplies	690,488	607,061	671,473	595,738	919,936	829,123	817,951
Rent	179,648	151,133	210,616	237,899	224,772	220,500	224,500
Taxes	106						
Utilities	329,045	369,676	390,028	372,140	377,433	415,018	415,329
Contractual Services	629,518	343,784	457,213	581,464	503,845	566,917	519,040
Insurance	122,609	127,916	122,529	201,301	151,233	138,564	131,047
Total Operating Expenses	\$ 4,976,935	\$ 4,685,636	\$ 4,880,187	\$ 5,275,015	\$ 5,553,848	\$ 5,983,747	\$ 6,096,939
NON-OPERATING EXPENSES							
Central Services Allocation	360,000	326,000	364,000	265,000	297,000	364,000	503,000
Total Non-Operating Expenses	\$360,000	\$326,000	\$364,000	\$265,000	\$297,000	\$364,000	\$503,000
TOTAL AIRPORT EXPENSES	\$5,336,935	\$5,011,636	\$5,244,187	\$5,540,015	\$5,850,848	\$6,347,747	\$6,599,939

Source: City of Eugene, Department of Public Works



Table 5-7

Eugene Airport
Master Plan Update

PROJECTED AIRPORT EXPENSES

	FY 2007 Actual	Budget 2008	Proposed 2009	Projected						
				2010	2011	2012	2013	2014	2015	2016
OPERATING EXPENSES										
Salaries and Labor	\$1,979,789	\$2,336,643	\$2,379,173	\$2,450,548	\$2,524,065	\$2,665,707	\$2,745,678	\$2,828,048	\$2,912,890	\$3,000,276
Employee Benefits	1,127,880	1,197,122	1,301,666	1,379,766	1,462,552	1,588,465	1,683,773	1,784,799	1,891,887	2,005,401
Maintenance and Repairs	269,160	279,860	408,233	440,892	476,163	514,256	605,396	653,828	706,134	762,625
Materials & Supplies	919,936	829,123	817,951	850,669	884,696	920,084	956,887	995,162	1,034,969	1,076,368
Rent	224,772	220,500	224,500	233,480	242,819	252,532	262,633	273,139	284,064	295,427
Taxes										
Utilities	\$377,433	\$415,018	\$415,329	431,942	449,220	467,189	485,876	505,311	525,524	546,545
Contractual Services	\$503,845	\$566,917	\$519,040	542,397	566,805	592,311	618,965	646,818	675,925	706,342
Insurance	\$151,233	\$138,564	\$131,047	132,357	133,681	135,018	136,368	137,732	139,109	140,500
Total Operating Expenses	\$5,553,848	\$5,983,747	\$5,196,939	\$6,462,051	\$6,740,000	\$7,135,561	\$7,495,576	\$7,824,838	\$8,170,502	\$8,533,483
NON-OPERATING EXPENSES										
Central Services Allocation	\$297,000	\$364,000	\$503,000	518,090	533,633	549,642	566,131	583,115	600,608	618,627
Total Non-Operating Expenses	\$297,000	\$364,000	\$503,000	\$518,090	\$533,633	\$549,642	\$566,131	\$583,115	\$600,608	\$618,627
TOTAL AIRPORT EXPENSES	\$5,850,848	\$6,347,747	\$5,699,939	\$6,980,141	\$7,273,633	\$7,685,202	\$8,061,707	\$8,407,953	\$8,771,110	\$9,152,109

Sources: Historic, budget, and proposed - City of Eugene, Department of Public Works.
Projected - Mead & Hunt, Inc., and Airport Management.

5.3 Maintenance and Repairs

Maintenance and repairs expenses represent the cost of materials and supplies needed for maintaining and repairing all of the Airport's grounds and facilities as well as charges for minor equipment outlays. Maintenance and repairs expenses grew at an annual rate of 9.0 percent between the years of FY 2003 and FY 2009 increasing from \$179,876 to \$308,233. As shown in Table 5-7, this category of expense is projected to increase from \$308,233 in FY 2009 to \$762,625 in FY 2016. This growth includes a \$100,000 increase in FY 2009 to account for the steep rise in gas prices and further anticipates additional expenditures following the construction of the first portion of the terminal expansion (\$50,000 in FY 2014).

5.4 Utilities

Expenditures captured in the "Utilities" category include charges for electricity for terminal and airfield facilities, natural gas for heating, and water and sewage services. These expenditures have ranged from a low of \$329,045 in FY 2003 to a high of \$415,329 in FY 2009, resulting in a compounded annual increase of approximately 4.0 percent. As shown in Table 5-7, utilities are projected to increase from \$415,329 in FY 2009 to \$546,545 in FY 2016, representing a compounded annual increase of approximately 4.0 percent. Future utilities expenses were projected based on historical actual costs and the anticipated costs associated with proposed expansion of airfield and terminal facilities.

5.5 Contractual Services

Contractual services expenses represent the annual costs of providing contract services to aid in the efficient operation of the Airport. This expense has fluctuated over the last seven fiscal years, ranging from a low of \$343,784 in FY 2004 to high of \$629,518 in FY 2003. For purposes of this analysis, future contractual service expense is projected based on the total expense for this category anticipated to occur in FY 2009. As shown in Table 5-7, contractual services expenses are projected to increase from \$519,040 in FY 2009 to \$706,342 in FY 2016, representing a compounded annual increase of approximately 5.0 percent.

5.6 Insurance

Insurance expenses are comprised of the costs of providing liability, property, and other insurance coverage to account for the risks associated with the operation of and damage to Airport facilities. Insurance expenses have increased from \$122,609 in FY 2003 to \$131,047 in FY 2009. Based on discussion with Airport management, FY 2009 insurance expenses were used as the base for future projections of this category of expense and as shown in Table 5-7, thus, this category of expense is projected to increase from \$131,047 in FY 2009 to \$140,500 in FY 2016.

5.7 Summary of Projected Total Airport Expense

In addition to the previously described operating expenses, the Airport incurs expenses that are considered non-operational in nature. These expenses are presented in Table 5-6 and Table 5-7 as "Central Services Allocation" and represents indirect costs allocated to the Airport by the City of Eugene for support services, such as Information Technology. The City, through the preparation of a cost allocation plan, estimates these annual costs for the Airport and as shown in Table 5-6, these



expenditures increased from \$360,000 in FY 2003 to \$503,000 in FY 2009. Based upon discussions with Airport Management, Central Service Allocation costs are projected to increase more modestly between FY2009 and FY 2016, increasing from \$503,000 to approximately \$618,627 or by 3.0 percent per year during this period.

Aggregating operating expenses with non-operating expenses yields total annual expenditures incurred by the Airport. As shown in Table 5-6, total Airport Operating Expenses increased from \$5,336,935 in FY 2003 to \$6,599,939 in FY 2009. Projected increases in the Airport's total expenses are presented in Table 5-7, which forecasts expenditure levels increasing from \$6,699,939 in FY 2009 to approximately \$9,152,109 in FY 2016.

6. Debt Service

Given the magnitude and scope of the projects contained in the recommended CIP, the issuance of new debt will be necessary to underwrite the following elements of this work:

- Terminal, Phase II – Airport Administration and Baggage project (\$9.6 million PFC eligible as well as \$2.4 million for non AIP and PFC project components)
- Concourse B Expansion (\$1.9 million PFC revenues)
- Concourse C – Phase I Expansion (\$6.7 million PFC revenues)
- Airport Access Road Improvements (\$1.6 million PFC revenues)
- Phase I – Passenger Parking Expansion Project (\$2.2 million)

Since portions of the terminal construction projects are eligible for funding through the PFC program, it is proposed that the Airport weigh the feasibility of pursuing debt financing backed by its future stream of PFC revenues to retire this debt and complete this work in a timely fashion. Since the Airport successfully retired all outstanding debt as of June 30, 2008 the Airport will be in an opportune position to issue new debt to undertake these projects assuming passenger activity and operating financial results are achieved and are reasonably expected to continue for the duration of the debt payment period. Several options exist for the Airport to pursue debt financing for these projects including:

- General Obligation Bonds issued by the City on behalf of the Airport with PFC revenue and general airport revenue pledged to support payment of debt service
- General Airport Revenue Bonds secured by a pledge of general airport and PFC revenue to retire debt service
- Stand-Alone PFC Bonds backed solely by PFC revenues

Each of the above options have unique advantages and disadvantages which the Airport should more thoroughly and thoughtfully weigh prior to proceeding with issuing bonds for these projects. In terms of the Passenger Parking Expansion and Airport Administration Projects, it is recommended that the Airport issue either General Obligation Bonds or General Airport Revenue Bonds secured by a pledge of general airport revenues for retirement of this debt.



Table 5-8 provides a debt service schedule for bonds issued in FY 2010 for the Terminal Phase II project, Concourse B expansion, and Access Road improvements projects. In addition, this table assumes that in FY 2014 additional bonds will be issued for the Concourse C – Phase I expansion. These debt service assumptions are tracked in Table 5-3 in the annual "Required PFC Fund" calculations along with projects scheduled to be completed on a pay-as-you-go basis. For purposes of this analysis, it is assumed that an overall interest rate of 4.75 percent is obtained for these borrowings and a payback period of 20 years is utilized. Collectively, these bond packages will entail the issuance of approximately \$19.8 million and will require the use of PFC revenues totaling approximately \$1.02 million in Fiscal Years 2011-2013 and \$1.54 million per year thereafter to achieve retirement. As noted on Table 5-3 and **Table 5-9**, the Airport is expected to generate sufficient PFC revenues to retire both this debt as well as fund other PFC pay-as-you-go projects anticipated for construction during this plan.

Table 5-8 also proposes that bonds for the Phase I Passenger Parking Expansion and construction of the Airport administration space be issued in FY 2010 resulting in debt of approximately \$357,000 per year to be paid from general Airport revenues. With the issuance of these bonds, the aggregate annual debt service required for these Airport projects will range from \$357,000 to \$1.9 million per year during the planning period. As depicted in Table 5-9, it is expected that sufficient revenue will be generated to support these borrowings and provide annual deposits to the Airport's Operating and Capital Reserve Fund.

7. Cash Flow Analysis and Overall Feasibility

This section sets forth a discussion of the Airport's projected cash flow from Operating Activities (Table 5-9) and its proposed Capital Improvement Plan (**Table 5-10**) for the period FY 2009 through FY 2016. The purpose of presenting these cash flow analyses is to demonstrate the Airport's ability to generate revenue sufficient to cover operating expenses and produce net revenue from operating activities through FY 2016. It further demonstrates that sufficient AIP funds, PFC revenues, and local Operating and Capital Reserves will be available to implement the recommended CIP through FY 2016.

In Table 5-9, projected Airport expenses are subtracted from projected Airport revenues, including transfers of sufficient PFC revenue for eligible debt service, on an annual basis through 2016 to estimate the Airport's net revenue in each of these years. From this net revenue, the Airport is required to make debt service payments and deposits to its Operating and Maintenance (O&M) Reserve Fund. This fund is required by the City and is to hold a balance equal to two months of the Airport's projected operating expenses in each year. Since the Airport is expected to hold approximately \$1.047 million in this fund as of FY 2009, additional deposits are not required to meet this two-month requirement until FY 2012, assuming the attainment of the projected Airport operating expenditure levels presented in Table 5-7. Total projected annual debt service payments on the proposed FY 2010 and FY 2014 borrowings are subtracted from the Airport's net revenue to calculate the Airport's Net Remaining Revenue Available for deposit. Once these obligations are accounted for, all remaining net income is available for deposit in the Airport's Operating and Capital Reserve Fund.





Table 5-8
Eugene Airport
Master Plan Update
SCHEDULE OF FUTURE DEBT SERVICE

	2008	2009	2010	2011	2012	Projected		2014	2015	2016
						2013				
DEBT SERVICE										
Parking & Admin. Space Bonds	\$0	\$0	\$356,715	\$356,715	\$356,715	\$356,715	\$356,715	\$356,715	\$356,715	\$356,715
Terminal Phase II & Access Road Bonds	\$0	\$0	\$0	\$1,017,420	\$1,017,420	\$1,017,420	\$1,017,420	\$1,017,420	\$1,017,420	\$1,017,420
Concourse C - Phase I Bonds	\$0	\$0	\$0	\$0	\$0	\$0	\$522,672	\$522,672	\$522,672	\$522,672
Total Debt Service	\$0	\$0	\$356,715	\$1,374,135	\$1,374,135	\$1,374,135	\$1,896,807	\$1,896,807	\$1,896,807	\$1,896,807

Note: Assumes the City issues bonds for the construction of the Phase I Passenger Parking Expansion & Non-PFC eligible costs associated with the Terminal Phase II project in 2010(\$4.6M), bonds in 2011 for PFC eligible portions of Phase II work & Access Road (\$13.1M) and bonds in 2014 for Concourse C PFC eligible work (\$5.7M).
Source: Mead & Hunt, Inc.



Table 5-9
Eugene Airport
Master Plan Update

PROJECTED AIRPORT CASH FLOW FROM OPERATING ACTIVITIES

	Proposed 2008	2009	2010	2011	2012	Projected 2013	2014	2015	2016
CASH FLOW - OPERATING ACTIVITIES									
Airport Revenue	\$7,134,010	\$7,296,261	\$7,595,229	\$7,909,002	\$8,340,377	\$8,688,231	\$8,849,343	\$9,233,045	\$9,636,043
PFC Revenue for Debt Service	\$0	\$0	\$0	\$1,017,420	\$1,017,420	\$1,017,420	\$1,540,092	\$1,540,092	\$1,540,092
Operating Expense	\$6,347,747	\$6,699,939	\$6,980,141	\$7,273,633	\$7,685,202	\$8,061,707	\$8,407,953	\$8,771,110	\$9,152,109
Net Revenue	\$786,263	\$596,322	\$615,087	\$1,652,790	\$1,672,594	\$1,643,943	\$1,981,482	\$2,002,026	\$2,024,026
Debt Service Payment	\$0	\$0	(\$356,715)	(\$1,374,135)	(\$1,374,135)	(\$1,374,135)	(\$1,896,807)	(\$1,896,807)	(\$1,896,807)
Net Remaining Revenue Available for Deposit	\$786,263	\$596,322	\$258,372	\$278,655	\$298,459	\$269,808	\$84,675	\$105,219	\$127,219
Deposit to O&M Reserve Fund	\$0	\$0	\$0	\$0	(\$63,604)	(\$60,003)	(\$54,877)	(\$57,611)	(\$60,497)
Deposit to Operating and Capital Reserve Fund	\$786,263	\$596,322	\$258,372	\$278,655	\$234,855	\$209,806	\$29,798	\$47,609	\$66,722

Source: Mead & Hunt, Inc.



Table 5-10
Eugene Airport
Master Plan Update
PROJECTED AIRPORT CASH FLOW - CAPITAL IMPROVEMENT PLAN

	Proposed 2008	2009	2010	2011	2012	Projected			
						2013	2014	2015	2016
CASH FLOW - CAPITAL IMPROVEMENT PROGRAM									
SOURCES OF FUNDS - CUMULATIVE BALANCE (Current contribution plus previous year-end balance)									
Federal AIP Entitlement Funds	\$2,653,342	\$2,708,061	\$2,762,781	\$2,817,500	\$2,872,220	\$2,926,940	\$2,980,968	\$2,994,997	\$3,029,026
Federal AIP Discretionary Funds	\$0	\$4,180,000	\$1,132,219	\$222,500	\$0	\$0	\$0	\$0	\$0
Passenger Facility Charges	\$1,506,532	\$1,548,108	\$1,589,685	\$1,631,261	\$1,657,117	\$1,682,972	\$1,708,827	\$1,734,683	\$1,760,538
Customer Facility Charge Revenues	\$0	\$3,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating and Capital Reserves	\$3,300,000	\$3,868,822	\$3,168,194	\$3,446,849	\$3,681,704	\$3,891,510	\$3,921,308	\$3,968,917	\$4,035,638
Other Funds	\$110,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Sources of Funds	\$7,569,874	\$15,304,991	\$8,652,879	\$8,118,111	\$8,211,041	\$8,501,421	\$8,591,104	\$8,698,596	\$8,825,202
USES OF FUNDS									
Federal AIP Entitlement Funds	\$2,612,500	\$2,641,000	\$2,762,781	\$2,817,500	\$2,800,000	\$1,900,000	\$2,960,968	\$1,425,000	\$285,000
Federal AIP Entitlement Carryover Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$1,299,160	\$0	\$0
Federal AIP Discretionary Funds	\$0	\$4,180,000	\$1,132,219	\$222,500	\$0	\$0	\$0	\$0	\$0
Passenger Facility Charges	\$0	\$0	\$3,455,000	\$1,177,420	\$1,097,420	\$1,117,420	\$1,540,092	\$1,615,092	\$1,555,092
Customer Facility Charge Revenues	\$0	\$3,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Operating and Capital Reserves	\$27,500	\$959,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Funds	\$110,000	\$3,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Uses of Funds	\$2,750,000	\$13,780,000	\$7,350,000	\$4,217,420	\$3,697,420	\$3,017,420	\$5,800,220	\$3,040,092	\$1,840,092
BALANCE OF GRANTS AND OTHER FUNDS AT YEAR END									
Federal AIP Entitlement Funds 1/	\$40,842	\$67,061	\$0	\$0	\$272,220	\$1,026,940	\$0	\$1,569,997	\$2,744,026
Federal AIP Discretionary Funds	\$0	\$4,180,000	\$1,132,219	\$0	\$0	\$0	\$0	\$0	\$0
Passenger Facility Charges	\$3,028,382	\$4,576,490	\$2,711,175	\$3,165,017	\$3,724,713	\$4,290,265	\$4,459,000	\$4,578,591	\$4,784,037
Operating and Capital Reserves	\$3,272,500	\$2,909,822	\$3,168,194	\$3,446,849	\$3,681,704	\$3,891,510	\$3,921,308	\$3,968,917	\$4,035,638
Other Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Source: Mead & Hunt, Inc.
Note: 1/ Entitlements not used in year received can be carried over for three years.

As shown in Table 5-9, the Airport is projected to produce net revenues adequate to cover all projected debt service payments and required reserve fund deposits as well as provide for significant deposits to the Airport Operating and Capital Reserve Fund on an annual basis through FY 2016. Although a detailed analysis of the Airport operating performance from FY 2017 through FY 2028 was not conducted, it is anticipated that similar financial results will continue through the end of the planning period.

Table 5-10 presents an analysis of the anticipated sources, uses, and balances of funds for the recommended CIP through FY 2016. The first section of Table 5-10 presents *Sources of Funds* that the Airport anticipates will be available to fund the CIP. As shown in Table 5-10, it is funding for the recommended CIP will come from AIP entitlement, AIP discretionary, PFC revenue, and the Airport's Operating and Capital Reserves and Depreciation Reserve Funds. The Operating and Capital Reserve Fund is a fund maintained by the Airport which holds the cumulative balance of net revenues from the Airport's operating activities. It is forecasted that a balance of approximately \$3.3 million will be on hand as of June 30, 2008. For purposes of this analysis, it is assumed that portions of future net revenues from operating activities will be transferred to this account, a portion of the fund will be used to fund the local share of recommended CIP projects, and a balance of \$3.5 million will exist as of June 30, 2016 assuming the Airport achieves the operating financial results projected herein.

The anticipated CIP funding plan (USES OF FUNDS) is also presented in Table 5-10. The preliminary CIP funding plan was developed and discussed earlier in this analysis. The controlling objectives in developing the CIP funding plan were to maximize the use of resources from AIP and PFC funds and to minimize Airport/local funding requirements. The Total Uses of Funds depicted in Table 5-10 corresponds to the total estimated project cost for the recommended CIP projects in each of the planning years FY 2008 through FY 2016.

The final section of Table 5-10 presents the annual balance projected for each of the funding sources anticipated for use in the recommended CIP. AIP discretionary funds and private funds will maintain a zero balance through FY 2016, as it is assumed that these funds will be received when needed to fund specific components of the recommended CIP. A balance of \$2.7 million in AIP entitlement funds is expected in FY 2016; however, these funds are programmed for use in Fiscal Year 2018 for the Runway 34R Extension Project. A balance of approximately \$4.7 million in PFC revenues is also forecast; yet, these resources are pledged to pay debt service as well as other pay-as-you-go eligible projects in future years. Finally, as noted previously, the Airport's Operating and Capital Reserve Fund is expected to continue a positive balance through FY 2016.

Conclusion

As shown in Tables 5-9 and 5-10, the Airport is projected to produce positive net operating revenues through FY 2016. Furthermore, the deposit of a portion of these net operating revenues into the Airport's Operating and Capital Reserve Fund will allow the Airport, based on the CIP funding plan developed in this analysis, to have adequate amounts of AIP, PFC, and Operating and Capital Reserve Funds necessary to fund the CIP through 2016.

Based on the foregoing analysis, including the underlying assumptions under which it was made, the CIP recommended for the Airport is expected to be both feasible and implementable.



8. Sensitivity Analyses

This section of the financial feasibility analysis considers the impact of alternative financial assumptions on the capital plan contemplated herein.

A scan of the aviation industry as of the date of publication of this study reveals that The United States Congress has yet to enact legislation to reauthorize "Vision 100 – Century of Aviation Reauthorization Act"; therefore, FAA's ability to issue AIP grants to airport sponsors is limited. Moreover, the price of crude oil has reached unprecedented levels creating economic uncertainty and further pressuring both the commercial airline industry as well as general aviation providers/aircraft owners to keep aviation a viable and solvent industry. As the result of the mounting pressure the cost of fuel is placing on the commercial aviation industry, additional consolidation is anticipated which could affect the ability of the Airport to complete the capital plan as presented. Despite these concerns, several potential indicators and policy changes could bolster the airport's ability to sustain momentum and accomplish the recommended projects contained in this plan. The first is a change in the PFC program; the second includes reductions in airport activity; and the third explores the Airport's ability to generate additional revenue using surplus properties.

8.1 Changes in PFC Program

Although Congress has yet to finalize action on FAA AIP Reauthorization legislation, it is generally believed that when it does the current PFC level of \$4.50 per passenger will be increased to \$7.00 per passenger. Such a measure would prove invaluable to the Airport, as this action would translate into the ability to undertake key terminal expansion and renovation projects based more on a pay-as-you-go basis rather than rely solely on PFC-backed debt financing. **Table 5-11** provides a summary of estimated PFC collections with a \$7.00 per passenger fee along with anticipated PFC expenditures. With the higher PFC in place, the Airport could reduce the amount of debt it would need to issue for the Terminal Phase II – Airport Administration/Baggage project by \$6.0 million and fund from cash both phases of the Concourse C expansion projects scheduled for 2014 and 2023 respectively. Finally, with a \$7.00 PFC, the Airport could cease collections for all projects contained in this plan in FY 2020.

8.2 Changes in Airport Activity

In terms of the impact of a decline in aviation activity occurring as the result of current economic conditions, the Airport is poised to be rather resilient and capable of absorbing these impacts. A broad sensitivity analysis was applied to the passenger forecast contained in this plan whereby a 10 percent decrease in passenger enplanements occurs in FY 2009 followed by an additional 5 percent reduction in FY 2010. Thereafter, a compounded annual growth rate of 2 percent was applied for the remainder of the forecast. **Table 5-12** depicts the impact of such a reduction in passenger activity on forecasted FAA entitlement and PFC funds for the period FY 2009-2016.



Table 5-11

Eugene Airport
Master Plan UpdatePROJECTED PASSENGER FACILITY CHARGE
CASH FLOW ANALYSIS - \$7.00 PFC

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Projected Enplanements		391,827	402,350	412,873	419,417	425,961	432,505	439,049	445,593
Net PFC Amount		\$6.89	\$6.89	\$6.89	\$6.89	\$6.89	\$6.89	\$6.89	\$6.89
Estimated PFC Revenue		\$2,429,719	\$2,494,972	\$2,560,225	\$2,600,805	\$2,641,384	\$2,681,964	\$2,722,543	\$2,763,122
PFC Expenditures									
Terminal Ramp Rehabilitation - Phase I	\$1,200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Terminal - Phase I - Baggage Screening	\$0	\$0	\$3,250,000	\$0	\$0	\$0	\$0	\$0	\$0
South Ramp Rehabilitation - South Section	\$0	\$0	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0
North Ramp Rehabilitation - Middle Section	\$0	\$0	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0
Runway 34L/16R Overlay - Lights & Connecting Taxiway	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0
Terminal Phase II - Airport Administration/Baggage				\$6,000,000					
PFC Debt Service - Concourse B/C, Baggage, Access Roa	\$0	\$0	\$0	\$552,132	\$552,132	\$552,132	\$552,132	\$552,132	\$552,132
Concourse C - Phase II - Two Gates & Ramp							\$6,740,000		
Aircraft De-Icing Facility	\$0	\$0	\$0	\$105,000	\$0	\$0	\$0	\$0	\$0
Taxiway A Rehabilitation - Phase I (A7-A4)	\$0	\$0	\$0	\$55,000	\$0	\$0	\$0	\$0	\$0
Taxiway A Rehabilitation - Phase II	\$0	\$0	\$0	\$0	\$80,000	\$0	\$0	\$0	\$0
Taxiway K Widening	\$0	\$0	\$0	\$0	\$0	\$65,000	\$0	\$0	\$0
Taxilan Non-Movement Area - EGAR to North Ramp	\$0	\$0	\$0	\$0	\$0	\$35,000	\$0	\$0	\$0
Hollis Taxilane - Short	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000	\$0
Master Plan Update	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,000	\$0
Environmental Assessment - Runway 34R Extension	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,000
Mitigation/Drainage - Runway 34R Extension	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Runway 34R Extension	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Terminal - Phase III - Airline Ticketing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Concourse C - Phase II - Two Gates & Ramp									
Master Plan Update	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ARFF Access Road - Txy C to Txy A	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Airfield Maintenance Facility	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total PFC Expenditures	\$1,200,000	\$0	\$3,455,000	\$6,712,132	\$632,132	\$652,132	\$7,292,132	\$627,132	\$567,132
Cumulative PFC Funding Balance	\$3,028,382	\$5,458,101	\$4,498,074	\$346,167	\$2,314,840	\$4,304,092	-\$306,076	\$1,789,334	\$3,985,325

Source: Mead & Hunt, Inc.

Note: Assumes an increase to a \$7.00 PFC with airline processing cost remaining at \$0.11 per PFC.





Table 5-12
Eugene Airport
Master Plan Update
PROJECTED AIRPORT CASH FLOW - CAPITAL IMPROVEMENT PROGRAM
SENSITIVITY ANALYSIS

	2008	2009	2010	2011	Projected					
					2012	2013	2014	2015	2016	
Projected Enplanements	381,304	343,204	326,204	332,748	339,292	345,836	352,380	358,924	365,468	
Projected FAA Entitlement Funds	\$2,653,342	\$2,708,061	\$2,762,781	\$2,564,661	\$2,476,261	\$2,510,290	\$2,544,318	\$2,578,347	\$2,612,376	
Projected Passenger Facility Charge Funds	\$1,506,532	\$1,355,999	\$1,288,832	\$1,314,687	\$1,340,543	\$1,366,398	\$1,392,253	\$1,418,109	\$1,443,964	
BALANCE OF GRANTS AND OTHER FUNDS AT YEAR END										
Federal AIP Entitlement Funds 1/	\$40,842	\$67,061	\$0	-\$144,936	-\$123,739	\$610,290	-\$416,650	\$1,153,347	\$2,327,376	
Federal AIP Discretionary Funds	\$0	\$4,180,000	\$1,132,219	\$222,500	\$0	\$0	\$0	\$0	\$0	
Passenger Facility Charges	\$3,028,382	\$4,384,381	\$2,218,213	\$2,355,480	\$2,598,603	\$2,847,581	\$2,699,742	\$2,502,759	\$2,391,631	
Operating and Capital Reserves	\$3,272,500	\$2,909,822	\$3,168,194	\$3,446,849	\$3,681,704	\$3,949,843	\$4,034,308	\$4,140,957	\$4,271,442	

Source: Mead & Hunt, Inc.
Note: 1/ Entitlements not used in year received can be carried over for three years.

As noted, sufficient PFC revenues should exist to fund the proposed plan even with this reduced passenger level; however, it will be necessary for the Airport to "multi-year" its FAA grant program in Fiscal Years 2011, 2012 and 2014 in order to garner sufficient federal funding. Since the Airport intends to construct an Aircraft Deicing Facility in 2011, and this project already has FAA Discretionary funding tentatively earmarked for it, it is likely that the FAA would allocate the additional resources to complete this project. If additional discretionary funding is provided, the Airport would only be required to multi-year entitlement funds in FY 2012 and 2014.

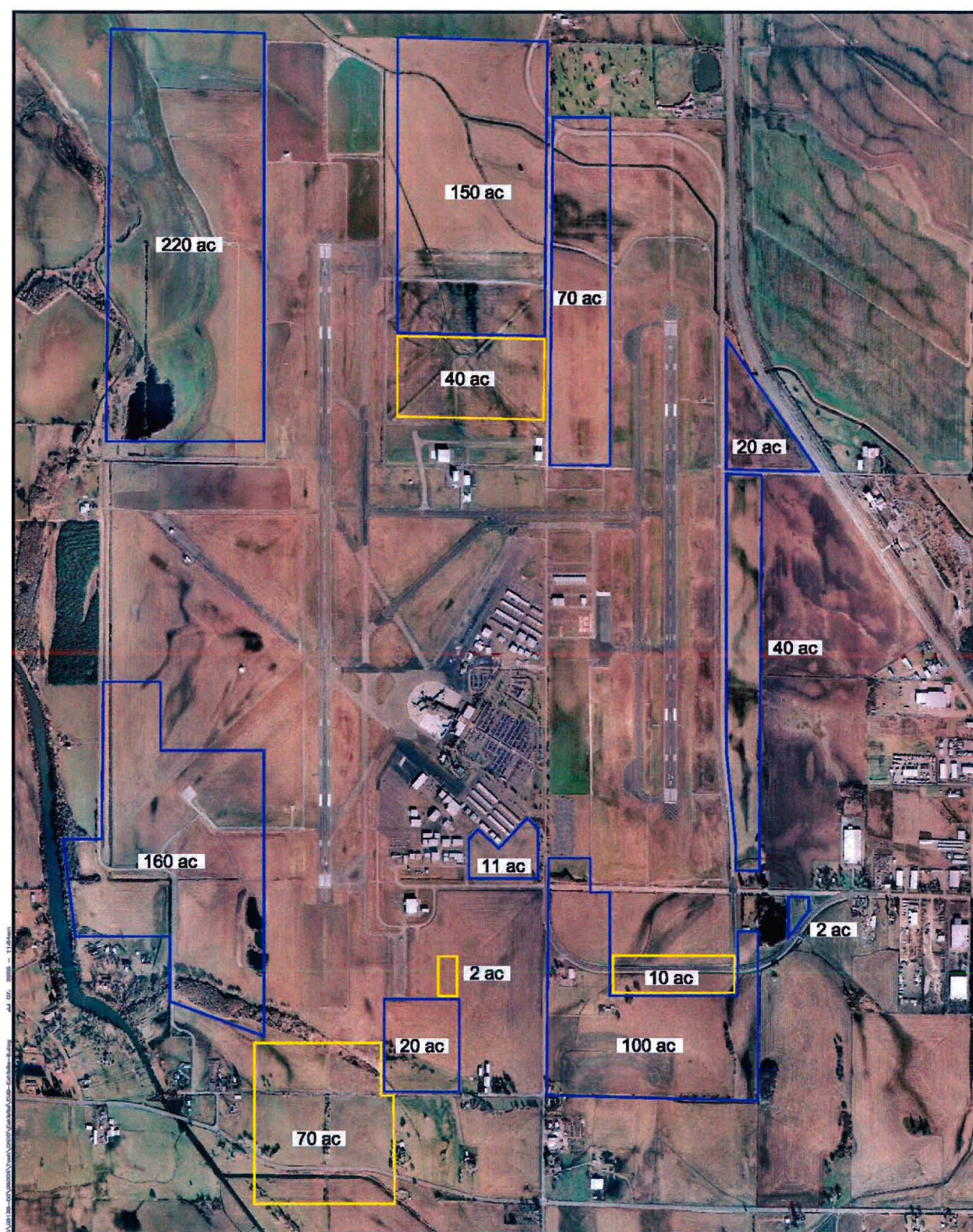
While Table 5-12 focuses on the short and mid-term planning horizon, extrapolation of the adjustments to enplanements described above for the entire master plan period indicates that aggregate FAA entitlements would total \$59.9 million while PFC collections would total \$33.2 million creating a shortfall of approximately \$4.3 million for the recommended capital program. To bridge the lack of PFC funds, the Airport should consider either allocating resources from its Operating and Capital Reserve Fund, earmark funds from the lease of land for construction, and/or increase airport fees and charges. Of course, such measures would need to be factored against an evaluation of the need to undertake capacity-driven projects such as passenger automobile parking expansions, terminal building projects, and fuel farm expansion work if such an economic/passenger downturn were to occur.

8.3 Additional Revenue Generation

It is recognized that the Airport currently maintains an inventory of property which it could lease to generate revenue to help pay for the CIP. The purpose of this review and subsequent analysis is to provide observations and recommendations on the physical, legal and economic aspects of those properties identified on the **Exhibit 5-2** as being available for consideration for revenue generation for the Eugene Airport. Following are items the City needs to consider in conjunction with determining if these properties are suitable for non-airport operations.

All identified properties are located outside of the Urban Growth Boundary of the City; therefore, urban services are not available including water and sanitary sewer service. Many of the parcels can be developed; however, without these services, their utility is limited since fire sprinklers are required in buildings over certain sizes. These parcels will be difficult to market as they cannot support fire suppression systems due to the lack of public water service. In addition, the lack of sanitary sewer service will also limit the development of most parcels, as the soils in the area are not conducive for traditional septic systems. A prime example of this is the States Veneer Facility at Hwy 99 and Enid, where it was necessary to have a very expensive sand filter system installed to accommodate their operations. If public services can be made available to any of the parcels being considered for revenue generation, this should be fully explored prior to marketing the properties. Additional consideration should be given to the method of taxation, as it is assumed that the properties will go onto the City's tax rolls if any property rights are conveyed to a private, for-profit entity. There is a provision that allows Airport property to remain tax exempt even when improved with private sector for-profit uses, so a determination of the applicability of this exemption should be explored in-depth by legal counsel prior to moving forward with implementation of any marketing activities.





Eugene Airport Master Plan Update
Scale: 0 400 800 1600
SCALE IN FEET
Reserved (Yellow)
Available (Blue)
Exhibit 5-2
Revenue Generation Property



- The decision as to whether to allow the properties to be marketed on a ground lease or for sale basis should be determined prior to offering the properties for alternative uses. There is reluctance in the marketplace to enter into ground leases as they are very difficult to finance. The Lessees typically request a subordination clause so financing can be obtained; however, this creates considerable risk for the Lessor as they become a second or third place lien holder if subordination is granted. In addition, what happens to the structural improvements at the end of the lease term also causes concern as most ground leases have a provision to allow the Lessee to purchase the site at the end of the lease term. A local example of how ground leases can adversely affect the marketing of properties is the example of the University of Oregon's Riverfront Research Park. This project only allows ground leases, (typically 99 years), yet, there has been very little activity and demand for these properties. There are other factors in the lack of market acceptance, but the ground lease situation is viewed by many in the real estate market as being one of the major impediments to market acceptance. If a sale is contemplated, then compatibility of uses becomes an issue as does the potential need for future Airport expansion. A sale can be consummated with a reservation for the City to have the first right of refusal on any future sale or if needed for tax purposes, the City could reserve an option to buy back the property for a specified price at a specified date.
- Wetland mitigation could be a factor for some properties. The current cost of mitigation, on a one-for-one basis, is approximately \$60,000 per acre, which is above the price the property could achieve in the market; therefore it is highly unlikely that any prospective user would undertake wetland mitigation.
- With regard to the potential use of the larger acreage parcels, the recommendation is to market these for agricultural uses. A ground lease for this type of use will not be difficult to achieve as many uses of this type do not require the construction of improvements. A use such as the raising of nursery stock, Christmas trees or the continuation of the raising of grass seed crops are a few of the recommended uses for these larger parcels which are all zoned for agricultural uses. Rates of return for these types of uses currently range from 4-6 % of the underlying land value. Annual increases tied to the Consumer Price Index are many times asked for, but in agricultural ground leases Lessees typically do not accept such rate increases. This range of uses would not produce a significant increase in the income currently being generated, assuming the current arrangements are at market rates.
- The 20-acre parcel located to the Northeast of the new runway could conceivably be used for a commercial range of uses. However, if utility services are not available, then the range of uses is severely limited. One consideration is that if a large user is contemplated, such as a hospitality (Motel/Hotel) facility, then a lagoon system may be necessary. The Airport overlay zone precludes any use/development that may attract waterfowl/ birds, and open lagoons are difficult to locate near runways. A closed system could be constructed; however, the costs may be prohibitive. The same situation goes for water service as any overnight lodging facility would require fire sprinklers and without gravity flow water service, it is not feasible to construct a reservoir system to accommodate this need. Stormwater runoff is required to be treated prior to entering the watershed, so to accommodate a large paved area it will be very difficult to make this accommodation and not have an open settling pond system. If utility services become available, then the range of uses and eventual prices will be greater than if not. The recent (2008) sales in the vicinity indicate unit prices in the \$2-\$3.50 per square foot of land area, and these sales have



a full level of services available. These unit prices are for industrially related uses, so if a commercial use could be placed on this site, an increase of almost twice the demonstrated unit price could be achieved. The eventual construction of the State Mental Hospital and Prison will enhance the demand for this site; however it may be several years before construction is started. Access to the state Highway will be highly scrutinized by ODOT (Oregon Department of Transportation).

- The 40-acre parcel that parallels the new runway would receive a reasonable level of market interest; however, public utility services will need to be provided because wells and septic tanks are not practical. There is a good level of market demand for smaller buildable industrially zoned sites; however, the recent substantial increase in fuel costs has created a perception that the outlying areas are now less desirable when compared to other sites due to the increases in transporting materials and personnel. When this property is divided into smaller parcels (recommended 3-5 acre parcels) then a unit price of \$2-\$3 per square foot is anticipated; however, the costs of making the property buildable will need to be deducted such as partitioning, fill material, services and/or approvals, and the extension of utilities such as electric, phone and other related costs.
- The smaller 2-acre parcel on Airport Road will be readily accepted if marketed for sale as it enjoys considerable traffic exposure. Assuming the sites' proximity to the pond does not render it unbuildable; a sale of the property for a light industrial type of use is anticipated.
- The 11-acre parcel at the northwest corner of Airport Road and Douglas Drive is the most viable for generating revenue in the short-term. In addition, the smaller parcel located at the northeast corner of the same intersection is also perceived as having good potential of being accepted by the marketplace for traditional airport related uses. Assuming a range of uses consistent with those permitted in the C-1 or C-2 zones, a range of market prices in the \$6-10 per sq ft range is anticipated for this property. The variance in price is dependent on the amount of fill that is needed to bring the site to a buildable condition as well as where access will be located. If there are restrictions on lighting and other elements of a traditional commercial use, then these could have a downward affect to the price, however it is not perceived as being substantial. This location is considered to have the greatest potential for generating revenue, both in amount per acre and timing.

Creation and implementation of an overall marketing plan is critical to achieving market participation beyond a few specific users. It is recommended that the city move forward with creating such a plan for any property it is contemplating leasing or selling. At a minimum, the plan should include a list of permitted uses and restrictions for the properties, a description of current utilities and how these services may be provided in the future, full disclosure of all wetlands the City's willingness to pay brokerage fees, and a complete description of the process to be utilized to obtain City approval for any lease or sale. Finally, it is recommended that pricing should be based on perceived unit prices considered comparable to the properties being conveyed, recognizing that many uses will be totally dependent on their proximity to the Airport. In undertaking its marketing plan, the City should remain cognizant of the fact that local market conditions are beginning to show signs of slowing. It is conceivable there will be a very limited demand for many of the properties being considered for revenue generation. The agricultural demand has remained relatively unchanged over the past decades and even if there is a recession, the income potential estimated for these properties is estimated to remain relatively unchanged. The demand for the



remaining parcels will be somewhat limited, dependent on the availability of services. If the parcels at Airport Road and Douglas Drive are served, they will demonstrate a relatively strong demand and airport related users will still be willing to enter into either ground leases or sales, dependent on the offering by the City.



This chapter provides details and analysis of government regulations and guidelines pertaining to airport design and operation. The effects of federal, state, and local regulations on Eugene Airport are presented. Items explored in greater detail are Federal Aviation Administration (FAA) design standards, Oregon Revised Statutes (ORS) and Administrative Rules (OAR), the Lane County Code, and the Eugene-Springfield Metropolitan Area General Plan (Metro Plan). In addition to land use, the effects of airport noise are discussed.

Land use compatibility planning in the vicinity of an airport provides safety for aircraft, and for people and property on the ground. In recent years, incompatible land uses and their impacts on airport operations and development have escalated nationwide. As incompatible land uses near airports threaten the nation's aviation system, implementation of land use controls have become an industry priority.



It is essential to maintain an obstruction-free airport and associated airspace. Planning to guard against incompatible land uses should be conducted for airport property, runway protection zones, approach areas, and the general vicinity of the airport. While some of these areas are owned by airports, land beyond airport boundaries is privately owned and needs to be managed by the airport's local jurisdictions to ensure safe airport operations. The primary tools available to local governments to prevent incompatible development are comprehensive plans, airport land use plans, development regulations, and airport overlay zoning ordinances.

1. Local, State, and Federal Land Use Regulations and Guidance

Airspace protection is vital to the safety and success of any airport. Although airports are accepted as essential public facilities, their relationship with surrounding land uses can often lead to conflict. In the interest of safety for aviation and citizens living and working in the area, there are regulations that define the types of land uses permitted around airports. These restrictions include height limits and land use prohibitions within a defined vicinity of an airport.

The Airport is owned by the City of Eugene but several other governments and agencies influence decision making. The Metro Plan, administered by the Lane Council of Governments, is an overarching planning document. The State of Oregon's Revised Statutes and Administrative Rules also impact the Airport, as does guidance from the FAA. The intention of these guidelines and regulations is to enable



the Airport to continue safe and efficient operations without detrimentally impacting the surrounding community.

1.1 Federal Regulations and Guidance

There are three FAA criteria that lay the foundation for airport land use compatibility planning: grant assurances, design standards, and Federal Aviation Regulations (FAR) Part 77 surfaces. These criteria are discussed in the following sections.

1.1.1 Grant Assurances

Airport sponsors agree to federal grant assurances as part of their project funding applications. Upon acceptance of grant money, these assurances are incorporated into and become part of the grant agreement, and the airport sponsor is obligated to comply with them. Grant Assurance 21, included in the September 1999 amendment to 49 USC 47107, requires all airports that accept federal money to take appropriate actions against incompatible land uses in the immediate vicinity of the airport. Such actions include adopting zoning laws, changing existing zoning, and purchasing neighboring land to protect federal investments through the maintenance of a safe operating environment.

1.1.2 Design Standards

Design standards, as defined by FAA AC 150/5300-13, *Airport Design*, are implemented for the safe operation of an airport. These standards fulfill safety-related functions for airports and aircraft, and have a role in land use. Design standards for Eugene Airport are shown on the Airport Layout Plan (ALP).

One design standard is the Runway Protection Zone (RPZ). An RPZ is an area beyond each runway end that protects against incompatible objects and land uses. It is desirable to clear all objects from the RPZ, although some objects and land uses are permitted, provided they do not attract wildlife and do not interfere with navigational aids. Land uses specifically prohibited from the RPZ include fuel storage facilities, residences, and places of public assembly (churches, schools, hospitals, office buildings, shopping centers, or other uses with similar concentrations of people). The RPZ is designed with the intent to protect people and property on the ground.

RPZs for Eugene's Runway Ends 16R and 16L extend beyond airport property. From an off-airport land use compatibility perspective, the RPZ is a critical FAA design standard. Control is preferably exercised by acquisition of sufficient property interest to achieve and maintain an area that is clear of all incompatible objects and land uses. Where acquisition is impractical, aviation easements are recommended to obtain the right to maintain the height of structures and vegetation within the RPZ.

1.1.3 FAR Part 77

Title 14 of the Code of Federal Regulations Part 77 (FAR Part 77), *Objects Affecting Navigable Airspace*, establishes standards for determining and defining objects as obstructions to air navigation. While design standards contained in FAA AC 150/5300-13 are intended to protect ground areas near airports, FAR Part 77 is intended to protect airspace near airports. Section 77.25, *Civil Airport Imaginary Surfaces*, establishes surfaces in relation to the airport and to each runway.



The FAA is authorized to undertake an aeronautical study to determine whether an object is a hazard to air navigation. However, the FAA is not authorized to regulate tall structures, limit structure heights, or determine which structures should be lighted or marked. As part of aeronautical study determinations, the FAA acknowledges that state or local authorities control the appropriate use of property beneath an airport's airspace. This reinforces the need for local land use controls to support the findings of the FAA. FAR Part 77.25 surfaces are explained below, and shown in Exhibits 6-1 and 6-2, and the ALP.

Horizontal Surface – The horizontal surface is a horizontal plane 150 feet above the established airport elevation. The perimeter is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway, and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is 5,000 feet for utility or visual runway ends, and 10,000 feet for precision and non-precision runway ends.

Conical Surface – The conical surface extends upward and outward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

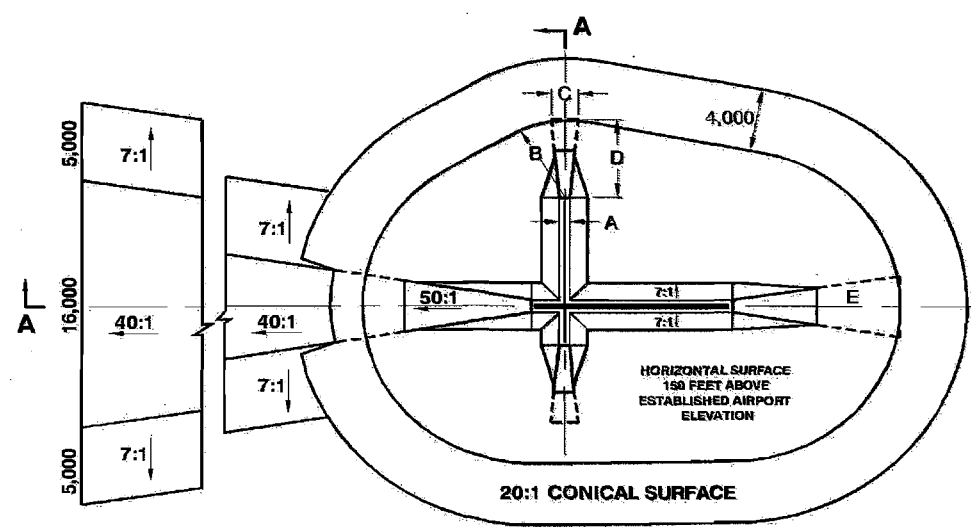
Primary Surface – The primary surface is longitudinally centered on a runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface is dependent on the most precise approach procedure existing or planned for either runway end.

Approach Surface – The approach surface is longitudinally centered on the extended runway centerline and extends outward and upward from each end of the primary surface. The surface length, outer width, and slope are dependent on the most precise approach procedure existing or planned for the runway end.

Transitional Surface – The transitional surfaces begin at the edges of the primary and approach surfaces, extend outward and upward at right angles to the runway centerline at 7 to 1 slope, and extend to the horizontal surface. For precision approach surfaces extending beyond the conical surface, the transitional surface extends 5,000 feet horizontally from the edge of the approach surface.

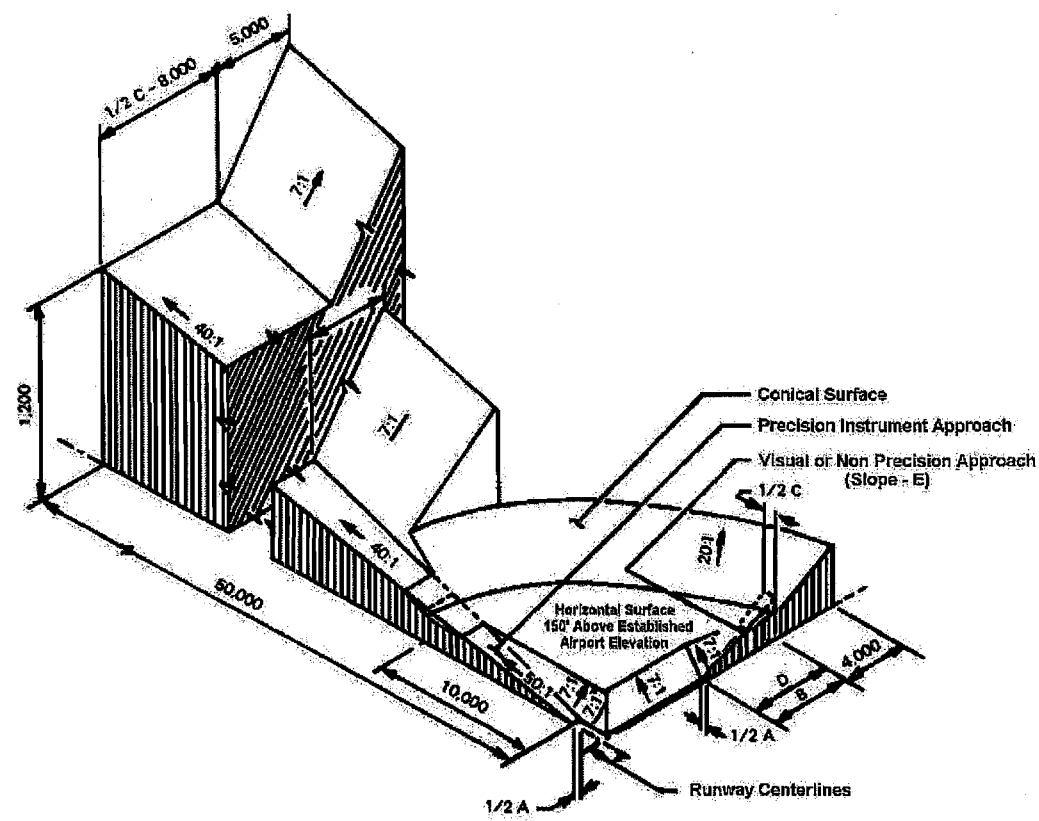


Exhibit 6-1: FAR Part 77.25 Surfaces – Plan View



Source: FAR Part 77 Objects Affecting Navigable Airspace. (Dimensions A-E are identified on the ALP.)

Exhibit 6-2: FAR Part 77 Surfaces – 3D Isometric View of Section A of Exhibit 6-1



Source: FAR Part 77 Objects Affecting Navigable Airspace



1.1.4 Wildlife Attractants

Wildlife-aircraft strikes have resulted in the loss of life, and billions of dollars in aircraft and property damage. Airports are often surrounded by open, undeveloped land intended to enhance safety and reduce noise impacts. These open areas can present potential hazards to aviation, especially if they attract wildlife. Constructed and natural areas, such as wetlands, detention/retention ponds, waste water treatment plans, and landfills, can provide ideal habitat for wildlife. These uses on and near airports can cause a hazard to safe air navigation, driving the need for proper land use planning.

FAA AC 150/5200-33N, *Hazardous Wildlife Attractant on or near Airports*, recommends airports used by jet aircraft (as opposed to piston) have a 10,000 foot separation between current and new development of wildlife attractants such as water impoundments. Recently, the City of Eugene has unveiled a plan to restore wetlands on the west side of town. Although wetlands are known attractants to wildlife, the project is over 10,000 feet away from the nearest airport development and therefore complies with FAA recommendations. Similar projects should be considered regarding their proximity to the Airport, and their potential to attract wildlife.

The Airport is taking steps at the local level to manage wildlife, by working with stakeholders to manage the hunting of waterfowl in the Airport vicinity. The goal is to not encourage waterfowl to travel toward the Airport as a result of hunting activities (for example, waterfowl seeking shelter from gunshot by flying to the Airport and in aircraft airspace).

1.2 State of Oregon Regulations and Guidance

The State of Oregon has identified the continued safe operation of aircraft as a state concern and has created statutes to guide local government planning around airports. ORS Chapter 836 addresses airport operations, and Sections 608, 610, 616, 619 and 623 of Chapter 836 pertain to land use around airports. While these statutes do not establish criteria or land use guidelines for land near airports, they do grant local governments the authority to create such laws tailored to local airport needs. Support in interpreting and applying the laws in these statutes is provided by the Airport Planning Rule, found in OAR Chapter 660, Division 13.

ORS 836.608 requires local governments to recognize airport locations in local planning documents, and to depict airport locations on local planning maps. This statute also establishes the process for airports to expand or add new land uses on their property. The continuation and expansion of land uses on airport property is protected by this statute, provided the use was in existence on or before 1996 and the use complies with state planning laws. The expansion of an existing land use which impacts off-airport property is subject to a public hearing.

ORS 836.610 requires local governments to amend their land use regulations and comprehensive plans to be consistent with 836.616 and 836.619. Sections 836.616 and 836.619 identify types of uses permitted on airport grounds, and require the government creating airport zoning to consult with the Oregon Land Conservation and Development Commission to meet standards for safe land uses near airports.



ORS 836.623 allows local governments to limit the size of water impoundments near airports to reduce the attraction of birds, thus reducing the risk of bird strikes, by requiring that no new water impoundments larger than one quarter of an acre shall be allowed on airport property, or within 5,000 feet of the runway ends. The Oregon Department of Aviation's Airport Land Use Compatibility Guidebook, section 5.3b.2, recommends that local governments create regulations to prohibit water impoundments within approach zones.

The Oregon Department of Environmental Quality's regulations for airport noise emissions, OAR 340-035-0045, are discussed in Section 2 of this chapter.

1.3 Lane County Regulations

Chapter 16 of the Lane Code pertains to land use and development. This chapter establishes the Commercial Airport Safety (CAS-RCP) Combining Zone and the Airport Operations Zone. Together, these Zones establish criteria and regulations for what can and cannot be built around the Airport in the interest of safety. Note that there is no overlap between the Lane County Comprehensive Plan and the Lane Council of Government's Metro Plan. Page I-6 of the 2004 Metro Plan indicates that "Lane Code Chapter 16 is applied in the area between the UGB and the Plan boundary to implement the Metro Plan."

1.3.1 Airport Operations Zone (Lane Code 16.247)

The intention of the Airport Operations Zone (AO-RCP) is "to recognize those areas devoted to or most suitable for the immediate operational facilities necessary for commercial and non-commercial aviation". The AO-RCP is also intended "to provide areas for certain open space uses for airfield grounds maintenance and as a buffer to minimize potential dangers from, and conflicts with, the use of aircraft."

Table 6-1 shows permitted buildings and uses in the AO-RCP.

Table 6-1. Permitted Buildings and Uses in an Airport Operations Zone	
<ul style="list-style-type: none"> • Expansions and alterations of essential airport facilities such as hangers and tie downs provided they do not allow a larger class of airplane • Game and fish preserves • Air cargo warehousing and distribution facilities • Aerial mapping and surveying • Retail sales and commercial services for passengers or flight connected activities • Aircraft related research and testing • Aviation clubs • Hotels and motels • Taxi, bus, and truck terminals • General farming • Aircraft or aircraft component manufacturing or assembly 	<ul style="list-style-type: none"> • Aircraft or air transportation business or professional uses • Environmental monitoring and enforcement agencies • Schools relating to aircraft operations • Public parking and/or auto storage • Accessory buildings normally required in connection with a use as specified in this table • Aircraft sales, repair, service and storage • Auto rental agencies • Restaurants • Forest or open land preserves • Pastures and grazing • Public and semi-public buildings, structures, and uses essential to the physical and economic welfare of an area

Source: Lane Code 16.247(2)



Lane Code 16.247(3) states that airport related uses not described in Table 6-1 are subject to approval by a hearing official. In general, these uses will be approved if their location near an airport is necessary for the airport to function, or if there are factors that make airport proximity advantageous. Lane Code 16.247(4) lists structure approval criteria, such as conformance to the Rural Comprehensive Plan of Lane County and compatibility with adjacent land uses. Lane Code 16.247(5) requires the height of proposed structures to not penetrate FAA Part 77 surfaces, as shown in Exhibit 6-1 and Exhibit 6-2.

1.3.2 Commercial Airport Safety Combining Zone (Lane Code 16.245)

The Commercial Airport Safety Combining Zone (CAS-RCP) is an overlay zone that exclusively affects land near Eugene Airport. The purpose of the CAS-RCP is to prevent land uses that are hazardous to airport operations and prevent the construction of obstructions to air navigation as defined in Lane Code 16.245(3). Hazardous uses include those that create significant dust, smoke, or glare; attract birds and other wildlife; or pose a threat due to their height. The CAS-RCP utilizes surfaces defined in FAR Part 77.25 to define allowable heights of structures. Objects and structures within the Zone are not permitted to penetrate the FAR Part 77.25 surfaces. CAS-RCP boundaries are shown in Exhibit 6-3. Height limitations of the CAS-RCP are illustrated on the ALP Part 77 Surface Plan Sheets.

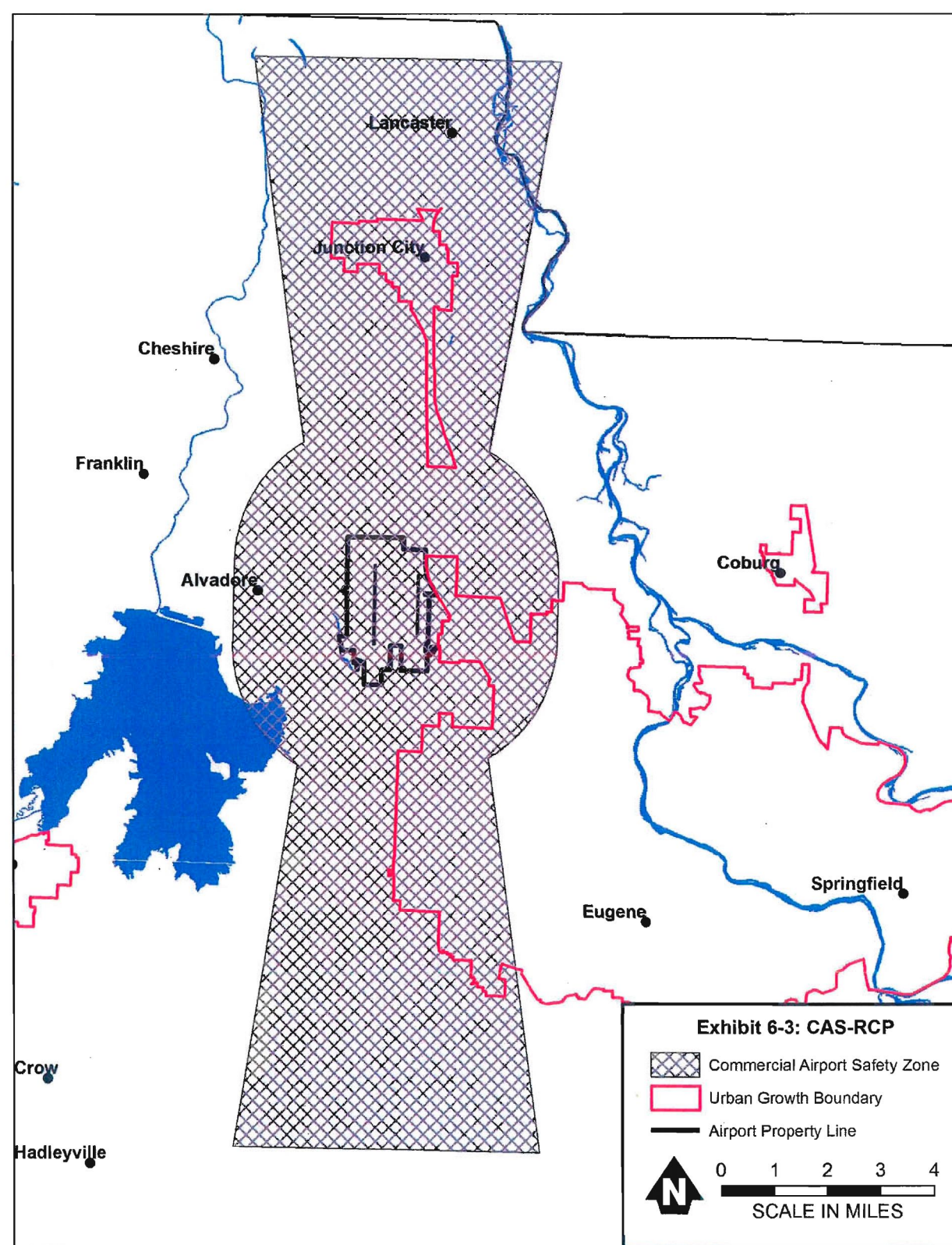
1.4 Metro Plan Guidance

In 2004, the City of Eugene, the City of Springfield, and Lane County adopted the latest update to the Metro Plan, which provides policy direction concerning the growth and development of the metropolitan area. Because the Airport's area of influence spans multiple jurisdictions, planned changes which impact the Airport must be coordinated with the Metro Plan.

The Metro Plan has been designed as a dynamic document that adapts to the changing needs of the metropolitan area. Metro Plan amendments may be initiated by the three participating governments, or by property owners if the amendment is site specific. The approval process for an amendment is decided by first classifying the amendment by the type of impact it will have on the plan, then using criteria outlined in Chapter IV of the Metro Plan. As the Metro Plan has defined the Airport as a regional facility, an amendment to the plan affecting the Airport may require the approval of all three governments. This Airport Master Plan Update presents changes to land use and the Airport Layout Plan, and may require future Metro Plan amendments.

According to the Metro Plan, Eugene Airport is located outside the UGB to "protect it from incompatible development as well as to reduce airport-related impacts on development within the UGB." The Airport is designated as "government/education" land use on the Metro Plan diagram, and receives emergency services and utilities from its owner, the City of Eugene. The land surrounding the Airport is designated "agricultural" according to the Metro Plan diagram. Metro Plan Policy F.30 is to "support public investment in the Eugene Airport as a regional facility and provide land use controls that limit incompatible development within the airport environs," and to "continue to use the *Eugene Airport Master Plan* as a guide for improvements of facilities and services at the airport."





Sources: Lane Code 16.245, Lane County GIS



The Metro Plan also establishes an area called the "Airport Reserve". The Airport Reserve is "land which may be acquired by the City of Eugene at some future time in connection with Eugene Airport, for which an exception to statewide planning goals must be taken, if the zoning is changed from Exclusive Farm Use/Commercial Airport Safety Combining (E-40/CAS zone)." This allows the City of Eugene to permit future airport growth and prevent the Airport from becoming constrained by future surrounding zoning. In effect, this policy allows the Airport to acquire and rezone land without such an action being confronted on the basis that it violates the Metro Plan or Oregon state policies. The Airport Reserve is designated on maps contained in Appendix C of the Metro Plan.

1.5 Recommendations

This Airport Master Plan Update recommends airside and landside improvements to accommodate future operations and development. The local, state, and federal policies that are in place today protect the Airport from encroaching development and obstructions, and protect the community from unsafe conditions on the ground. However, the proposed Airport improvements will require modifications to the zoning boundaries to ensure the Airport continues to be protected from incompatible development, and continues to operate safely.

It is recommended that Lane County, the City of Eugene and Eugene Airport conduct a detailed analysis of existing land use protection measures to determine necessary changes that will result from the implementation of the airport improvement projects outlined in this Airport Master Plan Update. The development of a property acquisition plan is also recommended to identify property that should be acquired to accommodate planned airport improvements. The following subsections highlight the areas that will need to be addressed.

1.5.1 Existing RPZs

The RPZ for Runway End 16R extends onto approximately 4.5 acres of land that is not owned by the Airport. The RPZ for Runway End 16L extends onto approximately 6.6 acres of land that is not owned by Airport, in addition to railroad and public road rights-of-way. The RPZs for Runway Ends 34R and 34L are located on Airport property.

The RPZs for Runway Ends 16R and 16L are expected to remain in their current location under this Airport Master Plan Update. It is recommended that the Airport acquire these properties to protect the runways from incompatible development. If this is not possible, the airport should pursue avigation easement for the properties.

1.5.2 Future RPZs

Proposed runway extension projects will require the relocation of the RPZs for Runway Ends 34R and 34L. Property within the future RPZs is on current Airport property, with the exception of public road right-of-way.

1.5.3 FAR Part 77 Surfaces

FAR Part 77 surfaces have been developed for the future runway extensions, and are shown in the Airport Layout Plan. FAR Part 77 surfaces are also used for Lane County's Commercial Airport Safety



(CAS-RCP) Combining Zone. It is recommended that the FAR Part 77 surfaces of the Airport Layout Plan be coordinated with Lane County's CAS-RCP Combining Zone, and that impacts to existing land use and future development patterns be evaluated. Changes to the CAS-RCP Combining Zone should be coordinated with the Metro Plan amendment procedures.

2. Aircraft Noise

While many land use regulations limit what can be done around airports, some regulations limit the impact airports can have on the neighboring population. Aircraft noise can be a nuisance to noise sensitive land uses surrounding an airport. Noise sensitive land uses can include residences, hotels, schools, churches, and office complexes. Noise can be a detrimental factor in the relationship between an airport and the surrounding community. Proper land use planning and protection are essential to mitigate the negative externality of airport noise, to keep the airport free of operational restrictions and incompatible land uses.

2.1 FAA Aircraft Noise Guidance

To evaluate potential noise impacts, an aircraft noise analysis was performed and is presented in this study. According to the FAA's *Environmental Desk Reference for Airport Actions*, a noise analysis, including noise contour maps, is required for airport projects that involve 90,000 annual piston-powered aircraft operations or 700 annual jet-powered aircraft operations, as well as projects that involve a new airport location, a new runway, a major runway extension, or runway strengthening.

To evaluate noise impacts, the FAA, the Environmental Protection Agency (EPA), and the Department of Housing and Urban Development (HUD) have established the 65 decibel day-night average sound level (65 DNL) as a threshold for determination of significant noise impacts. Areas experiencing aircraft noise levels at or above 65 DNL are considered to have significant noise impacts. The FAA's Integrated Noise Model (INM) is the accepted industry tool for evaluating aircraft noise impacts. The INM assists in analyzing changes in noise impacts resulting from new or extended runways or runway configurations; assessing new traffic demand, fleet mixes and alternative flight profiles; and evaluating modifications to operational procedures.

Oregon's Department of Environmental Quality (DEQ) establishes Noise Control Regulations for Airports in OAR 340-035-0045. Houses within the 55 DNL contour can require the airport to undertake a noise abatement program. The airport and local government should work together to reduce the effects of aircraft noise on neighboring land uses.

2.2 Aircraft Noise Analysis

This section compares noise exposure levels for 2006 with projected noise exposure levels for 2026. The following identifies land uses adversely affected by noise, and presents strategies to mitigate noise concerns.

2.2.1 Methodology

To prepare a noise exposure map, the INM requires information concerning the number of aircraft operations, the types of aircraft (fleet mix), the time of day (day or night) that activity occurs, runway



utilization patterns, and the typical flight tracks of aircraft. Coordination with Airport staff and the FAA, and evaluation of the aviation demand forecasts presented in Chapter 2, provided the necessary information to depict existing and future noise exposure levels at Eugene Airport.

Aircraft Fleet Mix

Eugene Airport has a diverse fleet mix. Aircraft range from small, single-engine general aviation aircraft such as the Cessna 172 to regional and narrow-body commercial service aircraft like the Canadair CRJ700 and the Boeing 737. The airport also receives a significant number of private corporate turboprop and jet aircraft. Other airport activity includes various military aircraft and general aviation helicopters. The Airport's fleet mix was provided by Airport staff and supplemented with data from the 2000 Master Plan.

Airport Operations

The frequency, or total number, of aircraft operations was based on the FAA-approved forecasts contained in Chapter 2 of this Master Plan Update. The total number of operations, with the exception of touch-and-go operations, was divided equally into approach and departure operations. According to Airport staff, touch-and-go operations account for approximately 60 percent of general aviation operations.

Daytime-Nighttime Operations

The INM assigns "penalties" to nighttime operations because aircraft noise is perceived to be louder at night when ambient sound levels are lower. The proportions of daytime and nighttime activity for commercial operations were based on published flight schedules, while proportions for general aviation and cargo operations were based on discussions with Airport staff.

Runway Utilization

Runway utilization includes the number, location, and orientation of the active runways, as well as the directions and types of operations that occur on each runway. Runway utilization depends primarily on wind direction and speed, but is also a function of Air Traffic Control (ATC) procedures and separation standards, terminal location, taxiing distances, and runway lengths. Runway utilization percentages were determined based on discussions with Airport staff and supplemented with data from the 2000 Master Plan.

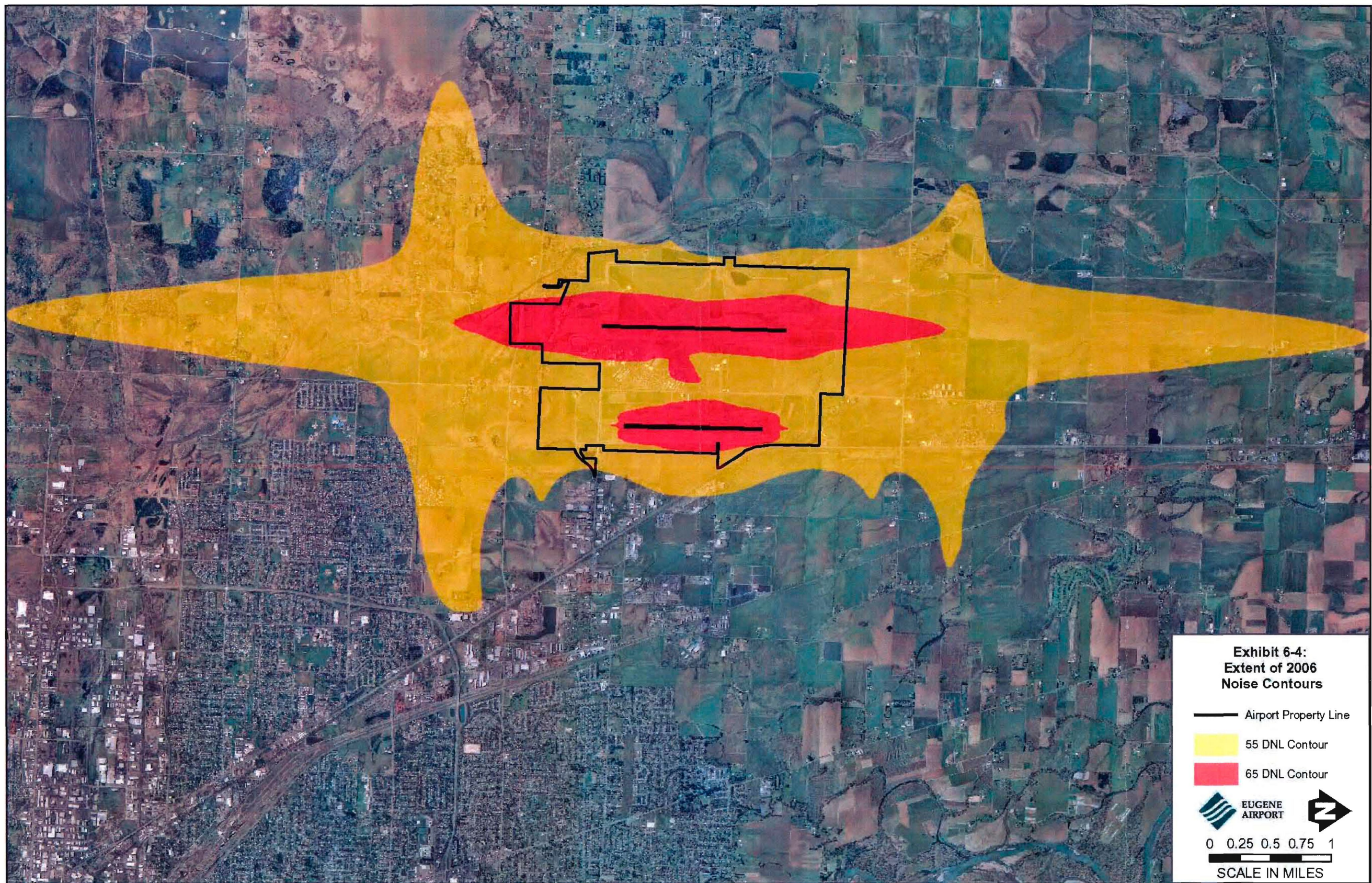
Flight Tracks

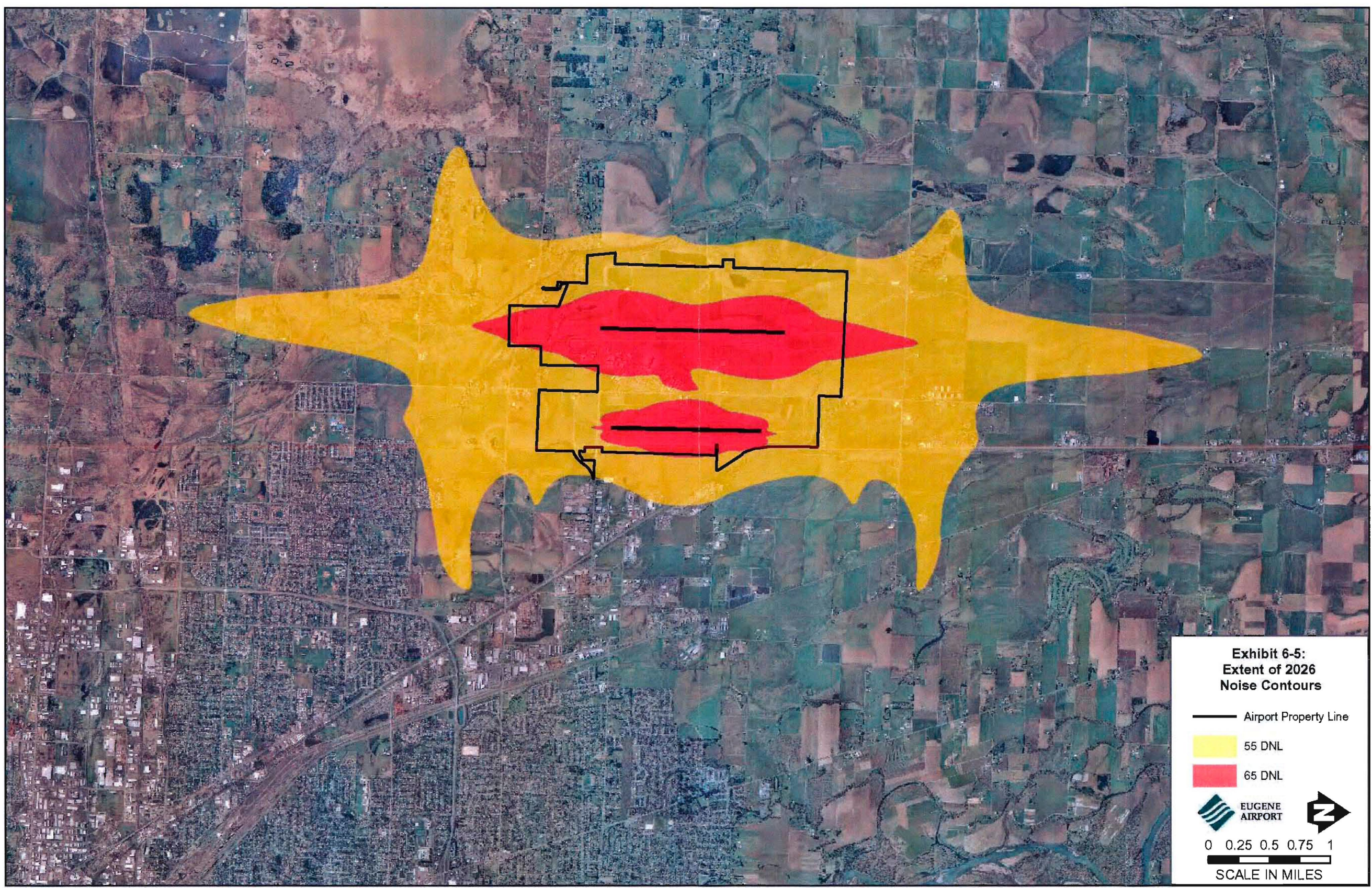
Flight track information represents the path over the ground followed by an aircraft. Because it is not possible to input all of the tracks followed by individual aircraft, the FAA suggests that tracks be consolidated to represent corridors consisting of estimated average flight tracks. Flight track use was determined based on discussions with Airport staff.

2.2.2 Analysis

The following exhibits show aircraft noise exposure contours at Eugene Airport, and their relation to the Airport and surrounding areas. **Exhibit 6-4** shows contours for 2006 while **Exhibit 6-5** shows projected contours for 2026. The noise exposure levels for 2026 include increased operations and proposed airfield improvements.







Comparison of the 2006 noise contours to the 2026 noise contours show the contours shrinking in size from north to south, and widening from east to west. This is because of an expected change in military aircraft type. The Navy is expected to replace the A-6 Intruder with the F-18 Hornet. As the F-18 has a quieter noise profile, the 2026 noise exposure contours are expected to affect fewer parcels.

Table 6-2 shows the reduction of affected parcels decreasing across all land use categories, with the exception of commercial, which has one more parcel impacted by the 2026 contours. Housing parcels affected by the 55 DNL or greater contours are expected decrease by 37% by 2026.

Year	Contour	Total	Agriculture	Housing	Transport.	Vacant	Commercial	Industrial	Gov./Rec.
2006	65 DNL	50	31	5	8	5	0	0	1
	55 DNL	729	221	349	21	92	9	13	24
	Total	779	252	354	29	97	9	13	25
2026	65 DNL	48	30	3	9	5	0	0	1
	55 DNL	503	167	218	9	71	10	15	14
	Total	651	197	221	18	76	10	15	15

Source: City of Eugene GIS "LandUse.shp" Shapefile

The housing category is especially sensitive to airport noise. Per OAR 340-035-0045, housing within the 55 DNL contour can require the Airport to undertake a noise abatement program. **Table 6-3** shows a breakdown of affected housing parcels by housing type. There is a reduction between 2006 and 2026 in the number of affected housing parcels of all types. There is a significant decrease in single family housing parcels within the 55 DNL contour in 2026, with 117 less affected parcels than in 2006.

Year	Contour	Housing Type	Total Parcels
2006	65 DNL	Duplex	0
		Mobile	1
		Single Family	4
	55 DNL	Single Family	290
2026	65 DNL	Duplex	0
		Mobile	0
		Single Family	3
	55 DNL	Single Family	174

Source: City of Eugene GIS "LandUse.shp" Shapefile

Understanding the types of homes within the contours allows for evaluation of mitigation techniques, which can include buying property, insulating homes, and limiting the hours of the day that aircraft

operate. As aircraft become quieter, the number of affected parcels will decrease, as will the need for noise abatement.

While the State of Oregon defines its Noise Impact Boundary at 55 DNL, many of the criteria requiring airport action correlate with the 65 DNL contour. OAR 340-035-0045 Part C recommends that the airport purchase land within the 65 DNL contour and mandates soundproofing within the 65 DNL contour. Within the 65 DNL contour for 2006, there are four single family home parcels and one mobile home parcel. This number decreases to three home parcels in 2026.

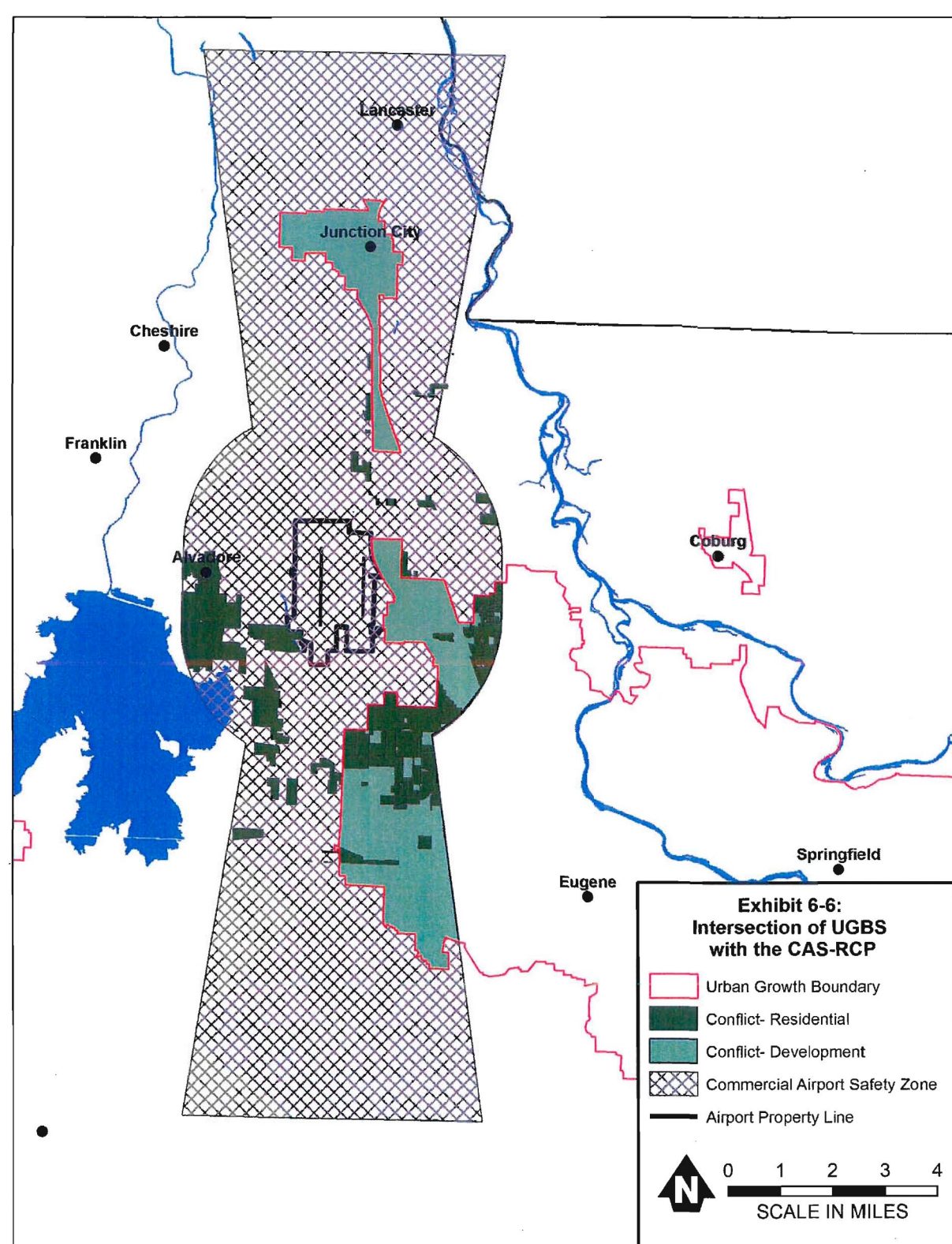
2.3 Recommendations

While the results of the noise analysis show the Airport's noise exposure contours shrinking between 2006 to 2026, the 2026 contours are based upon today's land uses. As the populations of City of Eugene, Junction City, and Lane County grow, there will likely be pressure to build and develop agricultural and vacant land surrounding Airport property. The Airport should continue to be protected from incompatible land uses through enforcement of Lane County and City of Eugene zoning regulations, and through the enforcement of the UGB as defined in the Metro Plan. It is recommended that the Airport consider acquiring land within the 55 DNL contour when feasible.

The Lane Code prevents tall structures from penetrating the FAR Part 77 surfaces, but does not prevent residential development within the 55 DNL contour. Approximately 375 acres of land in the CAS-RCP Combining Zone south of Runway End 34R is zoned for residential use, with housing already in place (see **Exhibit 6-6**). Some of these areas are partially impacted by the 55 DNL noise contours for 2006 and 2026. Although these parcels are not located within the 65 DNL contour, and not eligible for FAA noise mitigation, OAR 340-035-0045 states that airports must develop a noise abatement program to minimize the effects of aircraft noise on local residents, and that all levels of government should cooperate to prevent impacts by encouraging compatible land use. This can be interpreted as governments taking steps to minimizing the construction of noise sensitive parcels within the 55 DNL contours. OAR 340-035-0005(38) defines noise sensitive properties as "real property normally used for sleeping, or normally used as schools, churches, hospitals or public libraries". As shown in Exhibit 6-6, Eugene's UGB may present development pressure near the Airport, and proper planning between the Airport and the City will be necessary to address land use conflicts.

Under OAR 340-035-0045, air carrier airports such as Eugene Airport are required to submit their existing noise impact boundary to the Oregon Department of Environmental Quality, along with their projections for the next five, ten and twenty year periods, when they update their master plan. It is recommended that the Airport take steps to comply with this state requirement.





Sources: Lane County GIS, City of Eugene GIS



3. Land Acquisition

As properties around the Airport become available, and as the Airport's priorities are developed, consideration should be given to land acquisition. The RPZs for Runway Ends 16R and 16L extend to 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 operation and for people and property on the ground. Acquisition of RPZ parcels has generally been an FAA priority.

Consideration should be given to the total acquisition of a parcel, as compared to the acquisition of only a conditional use, restriction, or height protection, often in the form of an easement. The Airport may benefit from leasing interests in a parcel, as opposed to purchasing that parcel.

Parcels may also be acquired to allow the Airport to facilitate desired development, and to better control development around the Airport. The parcel located at the southwest corner of the intersection of Douglas Drive and Airport Road may be such a parcel. The Airport Layout Plan shows the Airport's existing property, as well as parcels to be considered for acquisition.

As a parcel is being evaluated by the Airport for acquisition, consideration should be given to the parcel's functional opportunity, revenue possibility, and environmental conditions. Consideration should also be given to the parcel's land use designation, including the designation's compatibility with the Airport's intended purpose for that parcel, and the possibility and impact of changing that designation, before or after acquisition.

4. Summary of Recommendations

Proper protection and use of off-airport properties are and will remain paramount in preserving the safety and operational utility of the Airport. Proper land use compatibility planning now will allow the Airport to continue to operate into the future, and to connect the City of Eugene and Lane County to the rest of the world.

- Conduct a detailed analysis of existing land use protection measures and what changes may be required to accommodate future airport improvements (Section 1.5).
- Prepare Property Acquisition Plan (Section 1.5).
- Acquire properties for RPZ protection (Section 1.5.1 and 3).
- Coordinate changes to Part 77 surfaces with Lane County's Commercial Airport Safety Combining Zone (Section 1.5.3).
- Acquire land within the 55 DNL noise contour where feasible (Section 2.3).
- Prevent land being from rezoned to residential, or being used for "noise sensitive" purposes within Lane County's Commercial Airport Safety Combining Zone (Section 2.3).
- Submit a noise impact boundary and protections for the next five, ten and twenty years to the Oregon Department of Environmental Quality.



Airport Layout Plan

This Master Plan Update includes revisions to the Eugene Airport ALP to reflect existing conditions and proposed improvements. This chapter describes the content of each sheet in the revised ALP.

An airport layout plan (ALP) is a set of drawings that graphically depict existing airport facilities and proposed improvements. An ALP has five primary functions.

- 1) A current, FAA-approved ALP is required to receive federal Airport Improvement Program (AIP) funding for proposed improvements.
- 2) An ALP is a blueprint for improvements that maintain airport design standards and safety requirements, and that are consistent with local land use plans.
- 3) An ALP is a useful reference in community deliberations regarding land use proposals, local government budgeting, and other planning-related issues.
- 4) An ALP enables an airport sponsor and FAA to plan for budgeting, procedural, and airspace implications of proposed improvements.
- 5) An ALP is a working tool for airport development and maintenance staff.

An ALP remains current for a five-year period or longer, unless major changes at the airport are made or planned. The minimum elements and required content for an ALP are defined in FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, Appendix F, *Airport Layout Plan*. Other FAA ALP funding and approval requirements are contained in FAA Order 5100.3B, *Airport Improvement Program Handbook*.

Sheet 1 – Cover Sheet

This sheet includes local maps, an ALP sheet index, and approval signature blocks for FAA and local officials.

Sheet 2 – Existing Airport Layout Plan

This sheet depicts existing airport facilities, design standards, and imaginary surfaces.

Sheet 3 – Future Airport Layout Plan

This sheet depicts proposed future facility improvements, design standards, and imaginary surfaces. Proposed improvements are based on aviation activity forecasts, facility requirements, and alternatives analysis contained in this Master Plan Update. These improvements are identified in the Airport's Capital Improvement Plan, and include future runway extensions, taxiways, approach lighting systems, aircraft hangars and ramps, deicing pads, aircraft rescue and firefighting (ARFF) facilities, automobile parking, and rental car facilities.

Sheet 4 – Airport Data Tables

This sheet presents information tables, including data on Airport location, weather characteristics, facilities, design standards, and imaginary surfaces.



Sheet 5 – Land Use/Vicinity Aerial

The sheet depicts the future airport layout plan superimposed on an aerial photograph of the airport and vicinity.

Sheet 6 – Existing Runway 16R/34L

This sheet presents plan and profile views of each existing end of Runway 16R/34L, including approach lighting, navigational aids, pavement/ground elevation, design standards, and imaginary surfaces.

Sheet 7 – Future Runway 34L

This sheet presents future Runway End 34L plan and profile views, including approach lighting, navigational aids, pavement/ground elevation, design standards, and imaginary surfaces.

Sheet 8 – Existing Runway 16L/34R

This sheet presents plan and profile views of each existing end of Runway 16L/34R, including approach lighting, navigational aids, pavement/ground elevation, design standards, and imaginary surfaces.

Sheet 9 – Future Runway 34R

This sheet presents future Runway End 34R plan and profile views, including approach lighting, navigational aids, pavement/ground elevation, design standards, and imaginary surfaces.

Sheets 10-13 – Appendix 2 Departure Surfaces

These sheets present plan and profile views of existing/future departure surfaces required by AC 150/5300-13, *Airport Design*, Appendix 2, and obstacle penetrations to these surfaces.

Sheets 14-15 – Runway Plans & Profiles

These sheets present plan and profile views of existing/future Runway 16R/34L and Runway 16L/34R, including runway ends, safety areas, and pavement/ground elevation profiles.

Sheet 16 – 2006 Noise Contour Plan

This sheet depicts 55 and 65 decibel day night average sound level (DNL) contours for Eugene Airport, superimposed on a U.S. Geological Survey (USGS) topographic map.

Sheets 17-19 – FAR Part 77 Surfaces

These sheets present plan and profile views of existing/future FAR Part 77 surfaces, superimposed on a USGS topographic map.

Sheets 20-21 – Terminal Plan

These sheets present large-scale plan views of areas with proposed terminal facility improvements.



AIRPORT LAYOUT PLAN

FOR THE

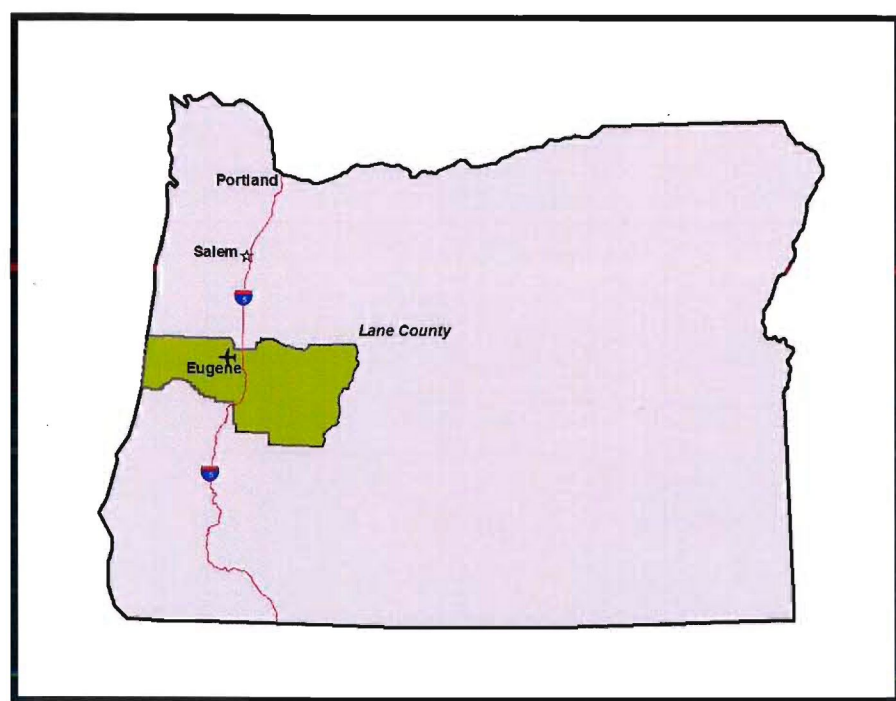
EUGENE AIRPORT

EUGENE, OREGON

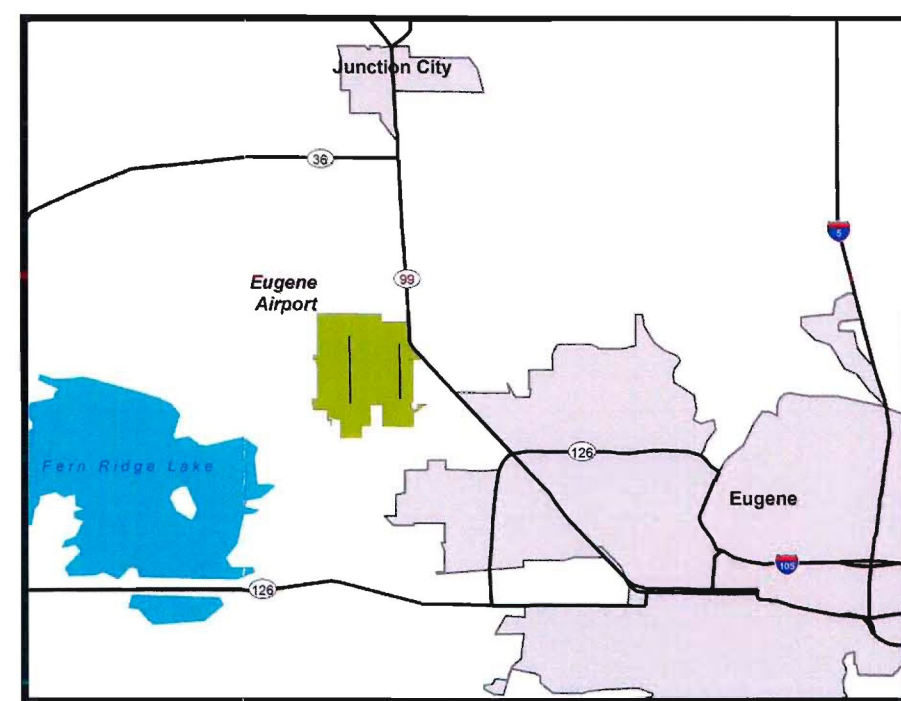
DECEMBER 10, 2009

INDEX TO SHEETS

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2. EXISTING AIRPORT LAYOUT PLAN
3. FUTURE AIRPORT LAYOUT PLAN
4. AIRPORT DATA TABLES
5. LAND USE/VICINITY AERIAL
6. EXISTING 16R/34L - INNER PORTION OF APPROACH SURFACE
7. FUTURE 34L - INNER PORTION OF APPROACH SURFACE
8. EXISTING 16L/34R - INNER PORTION OF APPROACH SURFACE
9. FUTURE 34R - INNER PORTION OF APPROACH SURFACE
10. RUNWAY 16R - APPENDIX 2 DEPARTURE SURFACES
11. RUNWAY 34L - APPENDIX 2 DEPARTURE SURFACES
12. RUNWAY 16L - APPENDIX 2 DEPARTURE SURFACES
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14. RUNWAY 16R/34L - PLAN AND PROFILE
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16. NOISE CONTOUR PLAN
17. FAR PART 77 SURFACES - SOUTH
18. FAR PART 77 SURFACES - MID
19. FAR PART 77 SURFACES - NORTH
20. TERMINAL PLAN - SOUTH
21. TERMINAL PLAN - NORTH





LOCATION MAP



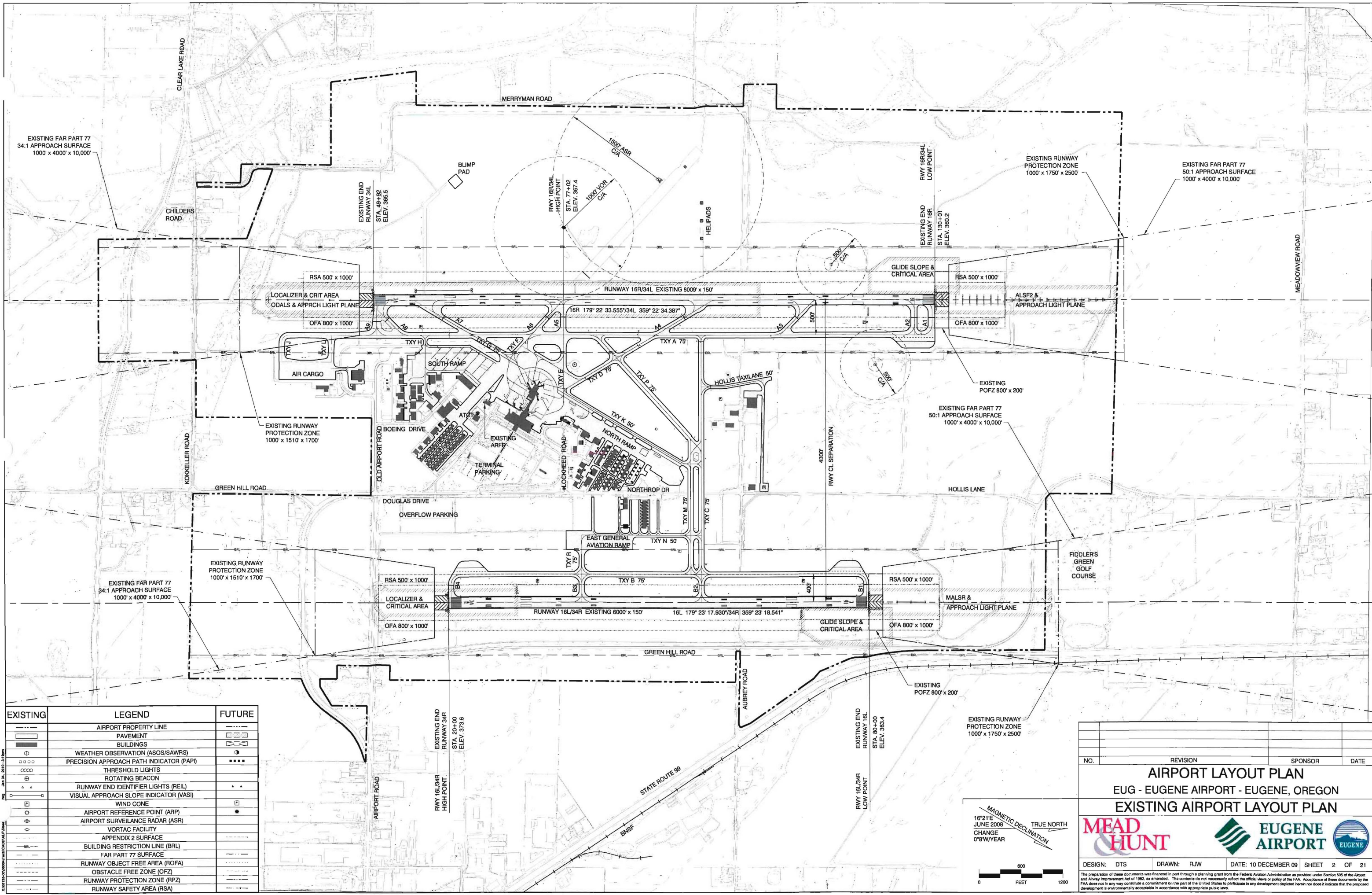
VICINITY MAP

FEDERAL AVIATION ADMINISTRATION NORTHWEST MOUNTAIN REGION SEATTLE AIRPORTS DISTRICT OFFICE	DATE
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 EUGENE AIRPORT 	
PUBLIC WORKS DIRECTOR CITY OF EUGENE	DATE
AIRPORT DIRECTOR CITY OF EUGENE	DATE

The preparation of these documents was financed in part through a planning grant from the Federal Aviation Administration as provided under Section 505 of the Airport and Airway Development Act of 1982, as amended. The grantee did not necessarily reflect the official views or policy of the FAA. Acceptance of these documents by the FAA does not constitute a certification of the data or the content thereof. The grantee is responsible for any development described herein but does not exclude the proposed development in an environmentally sensitive area in accordance with applicable public laws.





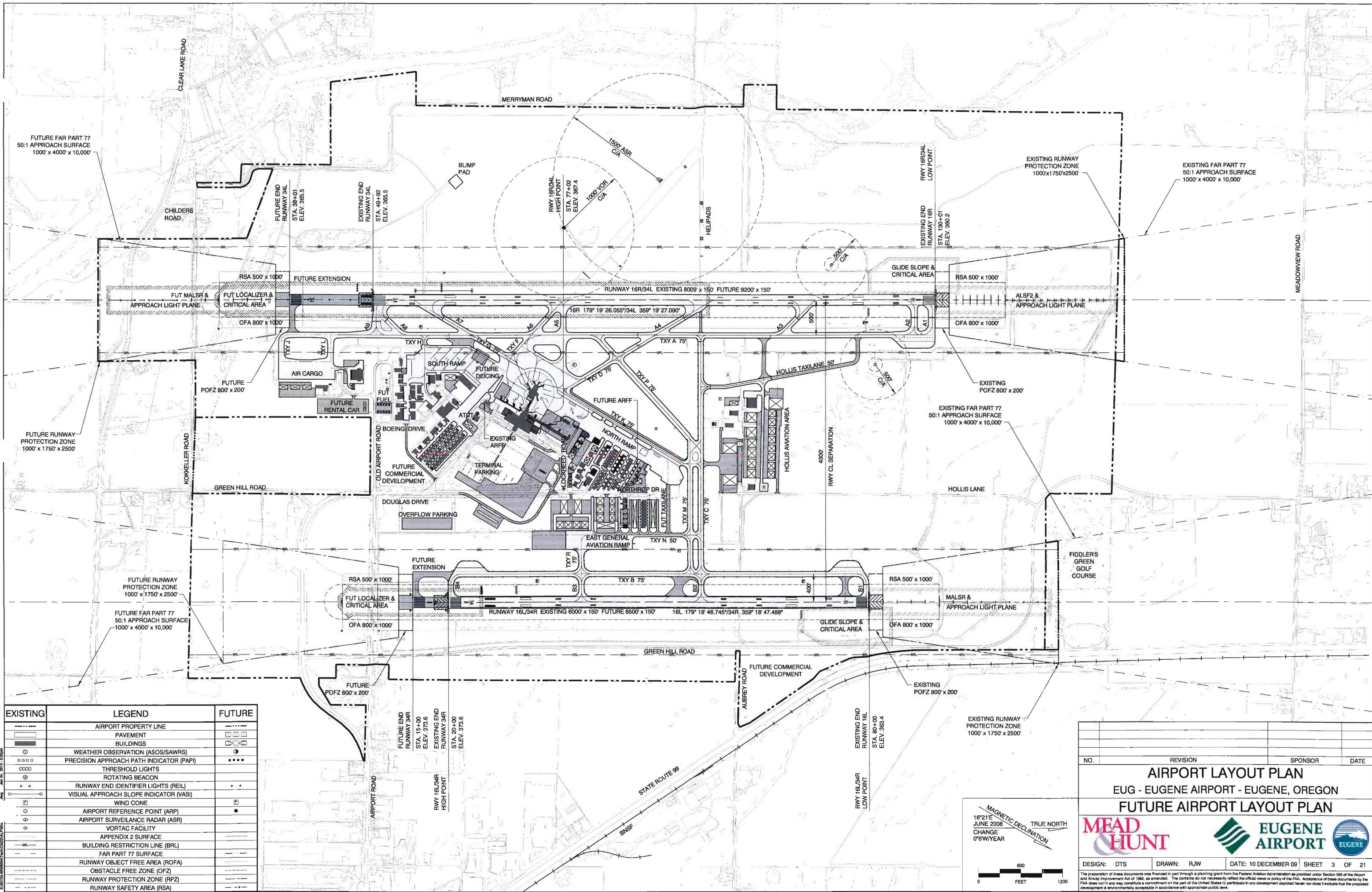
EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
○	WEATHER OBSERVATION (ASOS/SAWS)	○
○	PRECISION APPROACH PATH INDICATOR (PAPI)	○
○	THRESHOLD LIGHTS	○
○	ROTATING BEACON	○
○	RUNWAY END IDENTIFIER LIGHTS (REIL)	○
○	VISUAL APPROACH SLOPE INDICATOR (VASI)	○
○	WIND CONE	○
○	AIRPORT REFERENCE POINT (ARP)	○
○	AIRPORT SURVEILLANCE RADAR (ASR)	○
○	VORTAC FACILITY	○
○	APPENDIX C SURFACE	○
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAR PART 77 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
EXISTING AIRPORT LAYOUT PLAN

DESIGN: DTS DRAWN: RLW DATE: 10 DECEMBER 09 SHEET 2 OF 21


The information on these documents was prepared through a planning and design process. The information is provided as a guide only. The user is responsible for verifying the accuracy of the information. The user is also responsible for obtaining all necessary permits and approvals from the appropriate authorities. The user is also responsible for ensuring that the information is used in accordance with applicable laws and regulations.



EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VERTICALLY FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAR PART 77 SURFACE	---
---	RUNWAY OBSTACLE FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
FUTURE AIRPORT LAYOUT PLAN




DESIGN: DTS DRAWN: PLW DATE: 10 DECEMBER 00 SHEET 3 OF 21

This project or its contents have been prepared through a planning grant from the Federal Aviation Administration as provided under Section 105 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of these documents by the FAA does not constitute a commitment on the part of the United States to participate in any development depicted herein nor does it indicate that the proposed development is automatically eligible for assistance with appropriate public laws.

EXISTING AIRPORT LOCATION

AIRPORT REFERENCE POINT (ARP)	LATITUDE	44° 07' 28.50"
ESTABLISHED AIRPORT ELEVATION	LONGITUDE	123° 12' 43.81"
		374 FT MSL

1. ARP DETERMINED USING GEOS3 PROGRAM.

AIRPORT DATA

AIRPORT IDENTIFIER CODE	EUG
AIRPORT-OWNING MUNICIPALITY	CITY OF EUGENE
COUNTY	LANE
MEAN MAXIMUM TEMPERATURE OF THE HOTTEST MONTH (AUGUST)	82 °F
MAGNETIC DECLINATION	18° 31' EAST OF NORTH
RATE OF CHANGE	0" 8' WEST OF NORTH-YEAR
AIRFIELD NAVAIDS	ASR, VOR, ATCT, AWOS, WIND INDICATORS

1. TEMPERATURE FROM NOAA, AUGUST 2008
2. MAGNETIC DECLINATION FROM NOAA, AUGUST 2008

FUTURE AIRPORT LOCATION

AIRPORT REFERENCE POINT (ARP)	LATITUDE	44° 07' 24.00"
ESTABLISHED AIRPORT ELEVATION	LONGITUDE	123° 12' 43.81"
		374 FT MSL

1. ARP DETERMINED USING GEOS3 PROGRAM.

EXISTING RUNWAY END COORDINATES

RUNWAY END	LATITUDE	LONGITUDE	STATION	ELEVATION	TRUE BEARING
16R	44° 08' 07.810"	123° 13' 08.9357"	130+01	360.2	179° 22' 33.565"
34L	44° 06' 48.5240"	123° 12' 07.7401"	48+02	365.5	359° 22' 54.367"
16L	44° 07' 58.7050"	123° 12' 08.8273"	80+00	363.4	179° 23' 17.502"
34R	44° 06' 59.4580"	123° 12' 08.9493"	20+00	373.6	359° 23' 18.541"

- EXISTING RUNWAY LAT/LONGS & ELEVATIONS FROM FAA PUBLICATIONS AND SURVEY.
- TRUE BEARINGS DETERMINED USING GEOS3 PROGRAM.
- BASED ON RECORD DRAWINGS, HOLD THE FOLLOWING STATIONS. EXISTING RUNWAY END 34L = 48+00, INCREASE TO NORTH. EXISTING RUNWAY END 16L = 80+00, DECREASE TO SOUTH.

CRITICAL AIRCRAFT

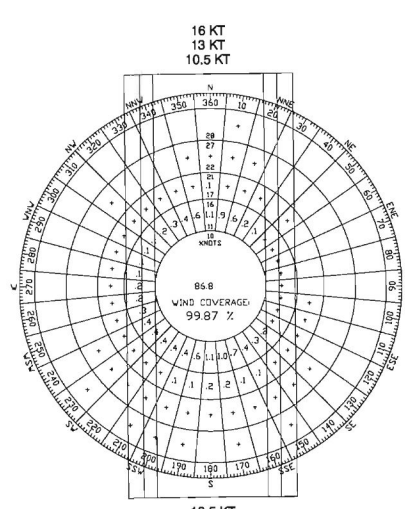
RUNWAY	ARC*	DESIGN AIRCRAFT	APRCH WING SPAN	LENGTH	HEIGHT	TAIL T/O WEIGHT	MAXIMUM
ALL	C-II	BOEING 737-300	137	94.8	109.6	36.5	135,000#

* ARC AIRPORT REFERENCE CODE. DESIGN AIRCRAFT DESIGNATED BY: APPROACH SPEED: C AT LEAST 121 KNOTS, LESS THAN 141 KNOTS. WINGSPAN: III AT LEAST 78 FEET, LESS THAN 116 FEET.

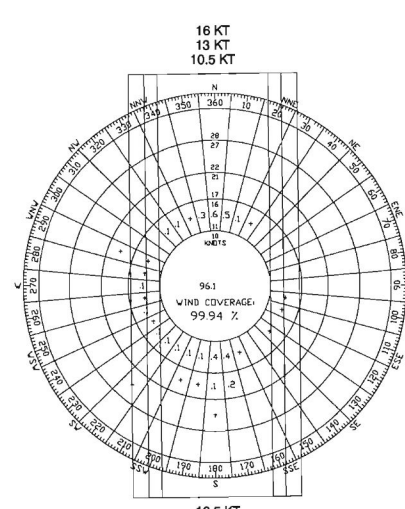
WIND COVERAGE

RUNWAY	ALL WEATHER				IFR			
	10.5KT	13KT	16KT	18KT	10.5KT	13KT	16KT	18KT
16/34R	98.0%	99.13%	99.87%	99.50%	99.73%	99.94%		

1. NOAA DATA FOR EUGENE AIRPORT, 1998-2007
2. IFR CONDITIONS: CEILING < 1000 AND/OR VISIBILITY < 3 MILE, BUT CEILING > 200 AND VISIBILITY > 0.5 MILE.
3. CROSSWIND COMPONENTS PER AC 150/5300-13, PAGE 10, PAR 203 B.



WIND ROSE ALL WEATHER CONDITIONS



WIND ROSE IFR CONDITIONS

FUTURE RUNWAY END COORDINATES

RUNWAY END	LATITUDE	LONGITUDE	STATION	ELEVATION	TRUE BEARING
16R	44° 08' 07.810"	123° 13' 08.9357"	130+01	360.2	179° 22' 33.565"
34L	44° 06' 48.5240"	123° 12' 07.7401"	38+01	365.5	359° 22' 54.367"
16L	44° 07' 58.7050"	123° 12' 08.8273"	80+00	363.4	179° 23' 17.502"
34R	44° 06' 54.54131"	123° 12' 08.78833"	15+00	373.6	359° 18' 47.468"

- EXISTING RUNWAY LAT/LONGS & ELEVATIONS FROM FAA PUBLICATIONS AND SURVEY. FUTURE RUNWAY LAT/LONGS CONVERTED FROM STATE PLANE COORDINATES PICKED FROM DRAWING.
- TRUE BEARINGS DETERMINED USING GEOS3 PROGRAM.
- BASED ON RECORD DRAWINGS, HOLD THE FOLLOWING STATIONS. EXISTING RUNWAY END 34L = 48+00, INCREASE TO NORTH. EXISTING RUNWAY END 16L = 80+00, DECREASE TO SOUTH.

EXISTING RUNWAY DATA

RUNWAY END	LENGTH	WIDTH	HIGH POINT STABELEV	LOW POINT STABELEV	EFF. GRAD.	SURFACE	STRENGTH
16R/34L	8000'	150'	77+02	130+01	0.13%	ASPHALT (GROOVED)	SINGLE 75,000# DUAL 200,000#
16L/34R	6000'	150'	20+00	80+00	0.17%	ASPHALT (GROOVED)	SINGLE 105,000# DUAL 175,000#

1. LENGTHS DETERMINED USING LAT/LONGS IN GEOS3 PROGRAM.

FUTURE RUNWAY DATA

RUNWAY END	LENGTH	WIDTH	HIGH POINT STABELEV	LOW POINT STABELEV	EFF. GRAD.	SURFACE	STRENGTH
16R/34L	8200'	150'	77+02	130+01	0.13%	ASPHALT (GROOVED)	SINGLE 75,000# DUAL 200,000#
16L/34R	6500'	150'	20+00	80+00	0.17%	ASPHALT (GROOVED)	SINGLE 105,000# DUAL 175,000#

1. LENGTHS DETERMINED USING LAT/LONGS IN GEOS3 PROGRAM.

EXISTING NAVIGATIONAL AIDS

RUNWAY END	MARKING	LIGHTING	VISUAL NAVAIDS	ELECTRONIC NAVAIDS
16R	PRECISION	HIRL, CL	ALSIF, TDZL, PAPI	ILS (CAT III)
34L	PRECISION	HIRL, CL	ODALS, WASI	ILS (CAT II)
16L	PRECISION	HIRL	MALS, PAPI	ILS (CAT I)
34R	PRECISION	HIRL	REIL, PAPI	

EXISTING RUNWAY DESIGN STANDARDS

RUNWAY END	RUNWAY PROTECTION ZONE	SAFETY AREA		OBJECT FREE AREA		OBSTACLE FREE ZONE	
		LENGTH*	WIDTH	LENGTH*	WIDTH	LENGTH*	WIDTH
16R	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'
34L	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'
16L	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'
34R	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'

* LENGTH BEYOND RUNWAY END. SURFACE EXTENDS FULL RUNWAY LENGTH.

FUTURE RUNWAY DESIGN STANDARDS

RUNWAY END	RUNWAY PROTECTION ZONE	SAFETY AREA		OBJECT FREE AREA		OBSTACLE FREE ZONE	
		LENGTH*	WIDTH	LENGTH*	WIDTH	LENGTH*	WIDTH
16R	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'
34L	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'
16L	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'
34R	1000x1750x2500'	1000'	500'	1000'	800'	200'	400'

* LENGTH BEYOND RUNWAY END. SURFACE EXTENDS FULL RUNWAY LENGTH.

FUTURE NAVIGATIONAL AIDS

RUNWAY END	MARKING	LIGHTING	VISUAL NAVAIDS	ELECTRONIC NAVAIDS
16R	PRECISION	HIRL, CL	ALSIF, TDZL, PAPI	ILS (CAT III)
34L	PRECISION	HIRL, CL	MALS, PAPI	ILS (CAT II)
16L	PRECISION	HIRL	MALS, PAPI	ILS (CAT I)
34R	PRECISION	HIRL	REIL, PAPI	

EXISTING INSTRUMENT APPROACH PROCEDURES

RUNWAY END	APPROACH	VISIBILITY MINIMUMS	INSTRUMENTATION	TOUCHDOWN ZONE ELEV
16R	PRECISION	CAT IIB, RVR50	ILS OR LOC Y, ILS OR LOC/DME Z, ILS CAT IIB, GPs, VOR/DME OR TACAN	363.8
34L	NON-PRECISION	3/4 MILE	RNAV(GPS), VOR/DME OR TACAN	367.6
16L	PRECISION	1/2 MILE	ILS OR LOC/DME, RNAV (GPS)	368.5
34R	NON-PRECISION	3/4 MILE	RNAV (GPS)	373.8

1. AIRPORT HAS VOR-A OR GPS-A APPROACH w/1 MILE VISIBILITY MINIMUM

EXISTING FAR PART 77 APPROACH SURFACES

RUNWAY END	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	1000x4000x10,000'	200'	50:1
34L	1000x4000x10,000'	200'	50:1
16L	1000x4000x10,000'	200'	50:1
34R	1000x4000x10,000'	200'	50:1

1. PRECISION APPROACH CONSISTS OF ADDITIONAL SURFACES. SEE PART 77 SHEET.

FUTURE FAR PART 77 APPROACH SURFACES

RUNWAY END	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	1000x4000x10,000'	200'	50:1
34L	1000x4000x10,000'	200'	50:1
16L	1000x4000x10,000'	200'	50:1
34R	1000x4000x10,000'	200'	50:1

1. PRECISION APPROACH CONSISTS OF ADDITIONAL SURFACES. SEE PART 77 SHEET.

FUTURE INSTRUMENT APPROACH PROCEDURES

RUNWAY END	APPROACH	VISIBILITY MINIMUMS	INSTRUMENTATION	TOUCHDOWN ZONE ELEV
16R	PRECISION	CAT IIB, RVR50	ILS OR LOC Y, ILS OR LOC/DME Z, ILS CAT IIB, GPs, VOR/DME OR TACAN	363.8
34L	PRECISION	1/2 MILE	RNAV(GPS), VOR/DME OR TACAN	367.6
16L	PRECISION	1/2 MILE	ILS OR LOC/DME, RNAV (GPS)	368.5
34R	PRECISION	1/2 MILE	RNAV (GPS)	373.8

1. PERFORMANCE BASED NAVIGATION (RNP/RNAV), WAAS, AND LAAS PROCEDURES ARE EXPECTED FOR ALL RUNWAY ENDS.

GENERAL NOTES

- ALL PREPARED USING DESIGN CRITERIA FROM FAA ADVISORY CIRCULAR 150/5300-13 "AIRPORT DESIGN CHANGE 14 AND FAR PART 77 OBJECTS AFFECTING NAVIGABLE AIRSPACE".
- ALL COMPARED TO FAA PUBLICATIONS AIRPORT FACILITY DIRECTORY, AND TERMINAL PROCEDURES, DATED 15 JAN 2008.
- AERIAL MAPPING AND IMAGES BY SDWEST, JANUARY 28, 2007.
- ELEVATIONS (NAVD8) AND DISTANCES IN FEET APPROXIMATE, FROM MAPPING.
- LATITUDES AND LONGITUDES (NAD83) CONVERTED TO STATE PLANE COORDINATES (OREGON SOUTH).
- FUTURE FENCING, AS PART OF FUTURE PROJECTS, OMITTED FOR CLARITY.
- FUTURE OBJECTS TO BE SITED AS PART OF FUTURE PROJECTS.
- THERE MAY EXIST OBJECTS NOT REPRESENTED.
- OBJECTS MAY BE REMOVED, RELOCATED, AND LIT, AS PART OF FUTURE PROJECTS, TO ACCOMMODATE AIRFIELD OPERATION AND DEVELOPMENT.

OBSTACLE FREE ZONE

RUNWAY END	INNER-APPROACH OFZ		INNER-TRANSITIONAL OFZ		PRECISION OFZ			
	LENGTH	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH		
16R	200' BEYOND LAST LIGHT	400'	50:1	1836'	1260'	200'	800'	
34L	200' BEYOND LAST LIGHT	400'	50:1	N/A	N/A	N/A	N/A	
16L	200' BEYOND LAST LIGHT	400'	50:1	1716'	1140'	51'	200'	800'
34R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

1. INNER-APPROACH OFZ APPLIES TO RUNWAY END WITH AN APPROACH LIGHT SYSTEM.
2. INNER-TRANSITIONAL OFZ AND PRECISION OFZ APPLY TO RUNWAY END WITH A PRECISION APPROACH.
3. DIMENSION REPRESENTS THE FAR END WIDTH OF THE INNER-TRANSITIONAL OFZ.

APPENDIX 2 SURFACES

RUNWAY END	CAT	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	10	SEE TERPS		
34L	8	800x3800x10,000'	200'	20:1
16L	8	800x3800x10,000'	200'	34:1
34R	8	800x3800x10,000'	200'	20:1
ALL	12	400x1,648x12,000', CONTINUE 21,648 TO 50,000'	0	62.5:1
ENDS*	11	1000x10,200x648'	0	40:1

* TERMINAL PROCEDURE 'EUGENE SEVEN DEPARTURE' APPLIES TO ALL RUNWAY ENDS.

NO.	REVISION	SPONSOR	DATE

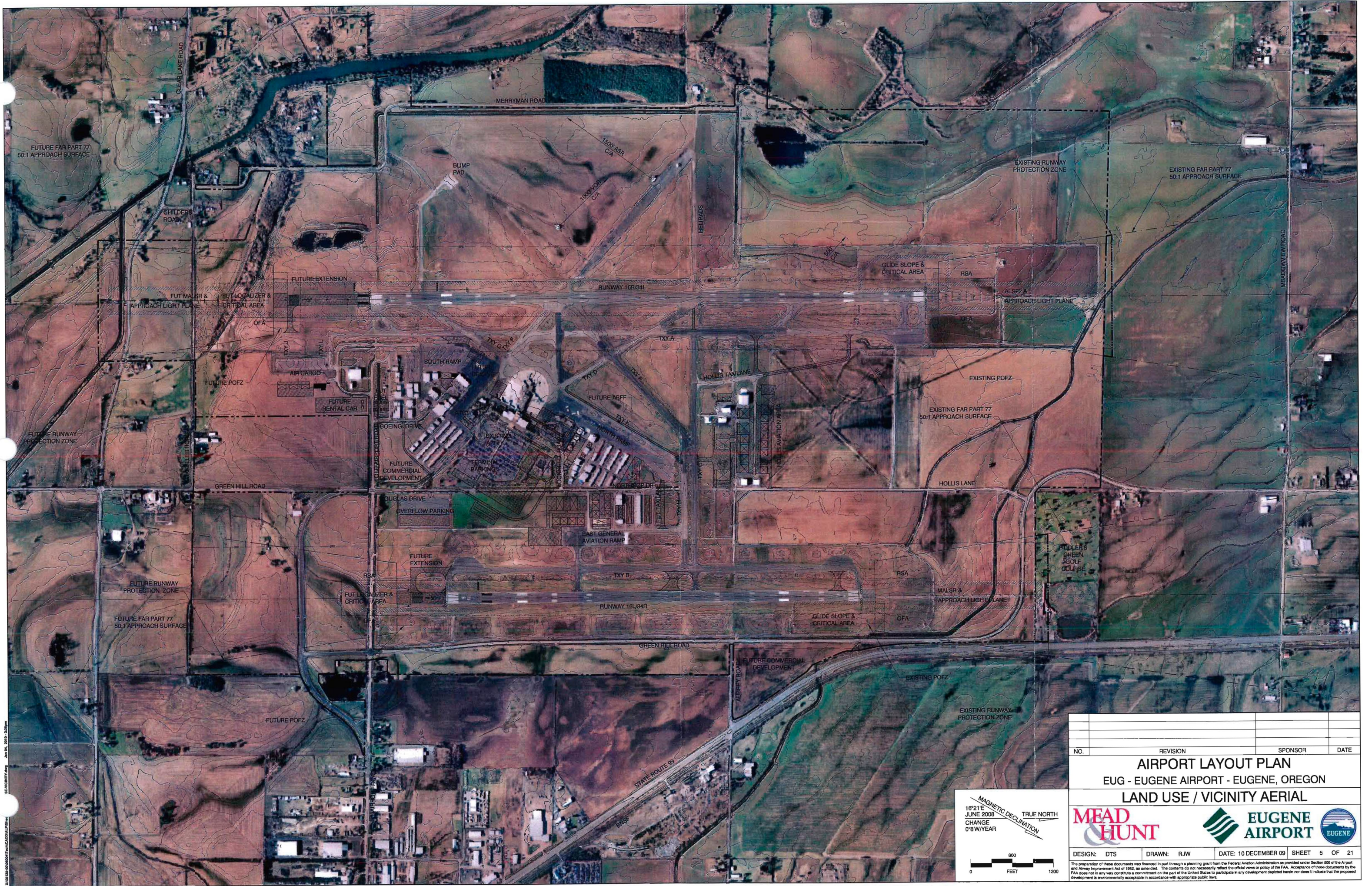
AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON

AIRPORT DATA TABLES

MEAD HUNT EUGENE AIRPORT

DESIGN: DTS DRAWN: RAW DATE: 10 DECEMBER 08 SHEET 4 OF 21

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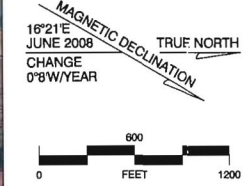


NO.	REVISION	SPONSOR	DATE

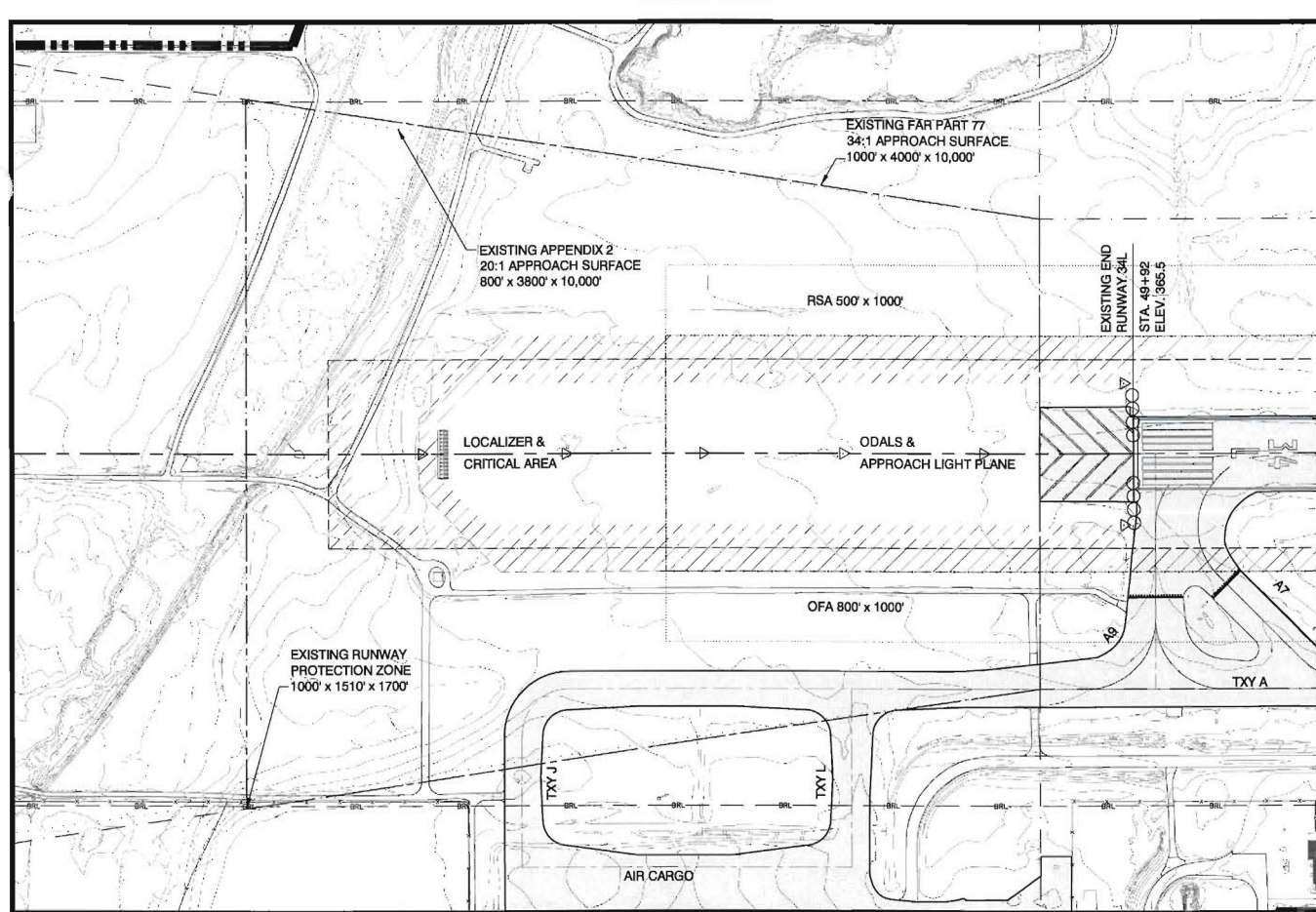
AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
LAND USE / VICINITY AERIAL



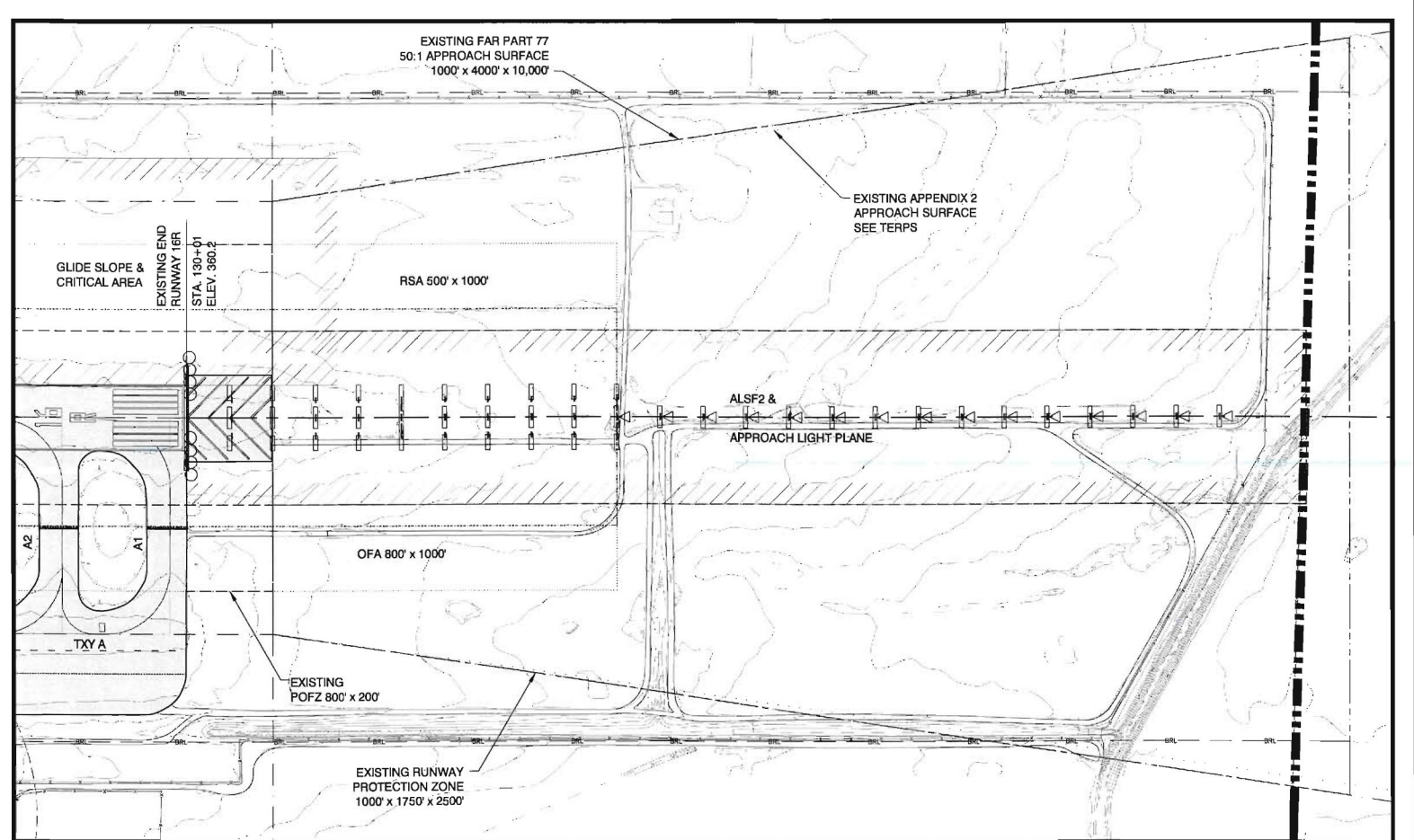

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 5 OF 21



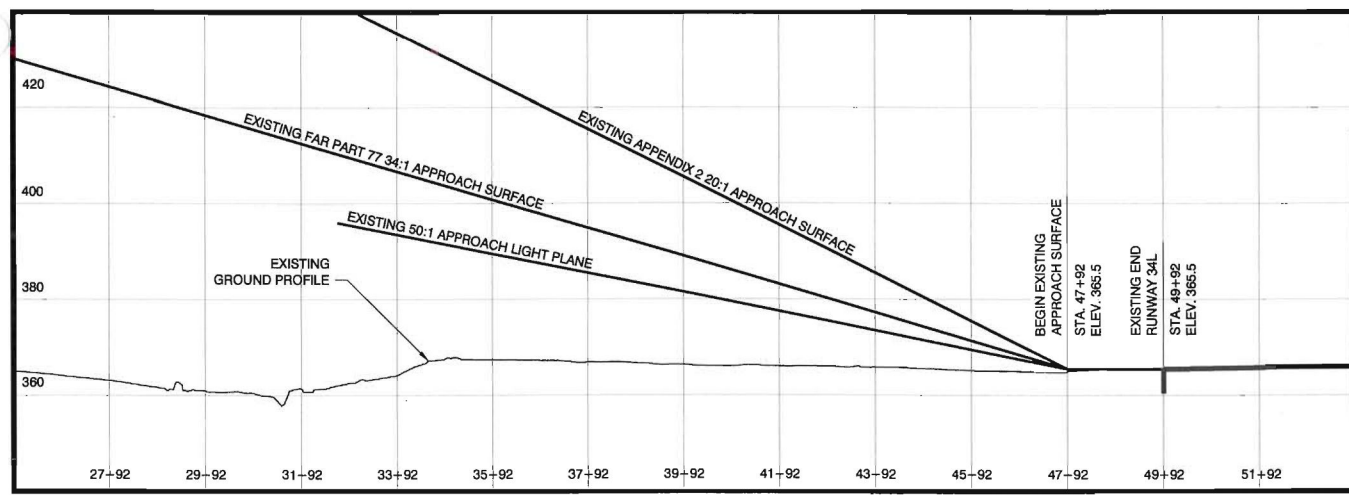
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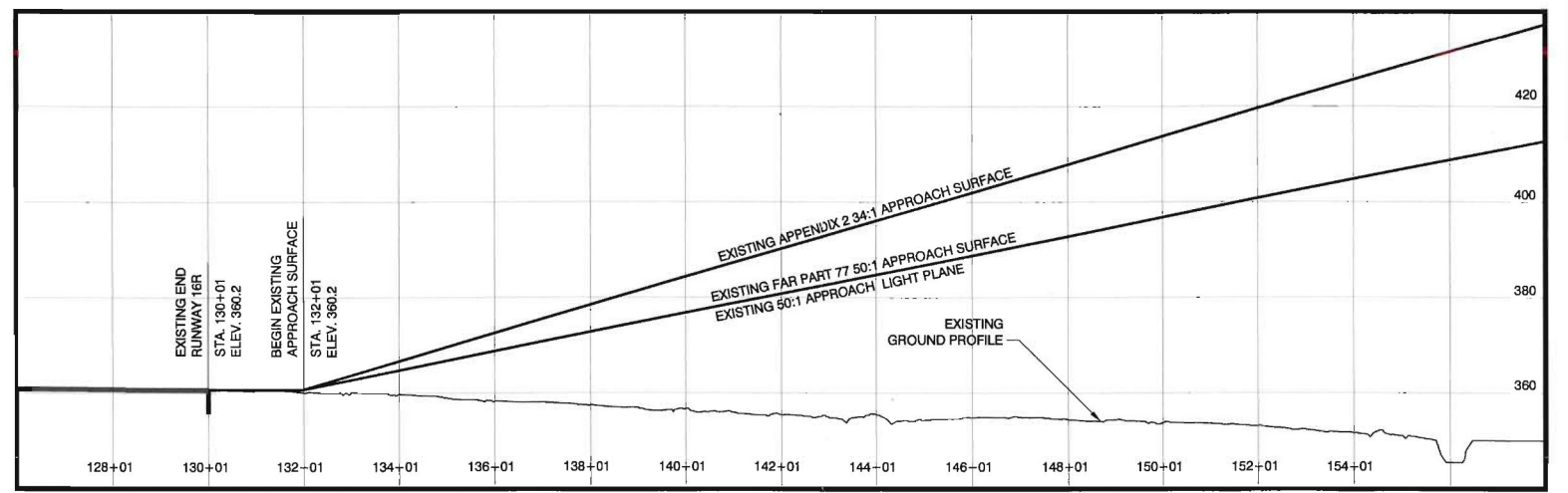
EXISTING RUNWAY END 34L - PLAN



EXISTING RUNWAY END 16R - PLAN



EXISTING RUNWAY END 34L - PROFILE



EXISTING RUNWAY END 16R - PROFILE

EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VORTAC FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAR PART 77 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

EXISTING FAR PART 77 APPROACH SURFACES

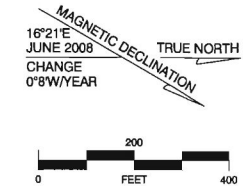
RUNWAY END	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	1000'x4000'x10,000'	200'	50:1
34L	1000'x4000'x10,000'	200'	34:1
16L	1000'x4000'x10,000'	200'	50:1
34R	1000'x4000'x10,000'	200'	34:1

1. PRECISION APPROACH CONSISTS OF ADDITIONAL SURFACES, SEE PART 77 SHEET.

APPENDIX 2 SURFACES

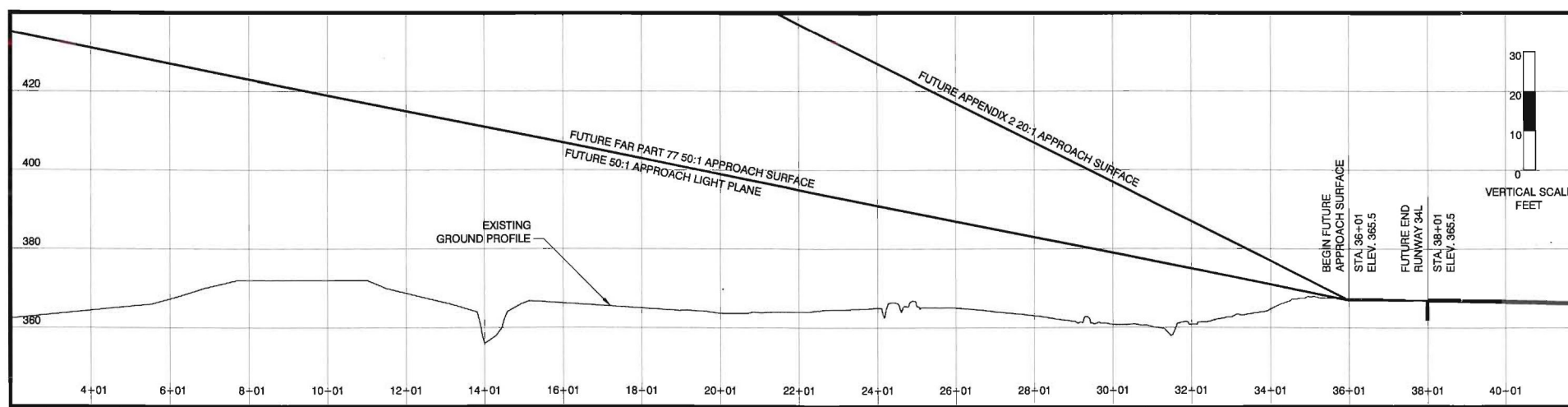
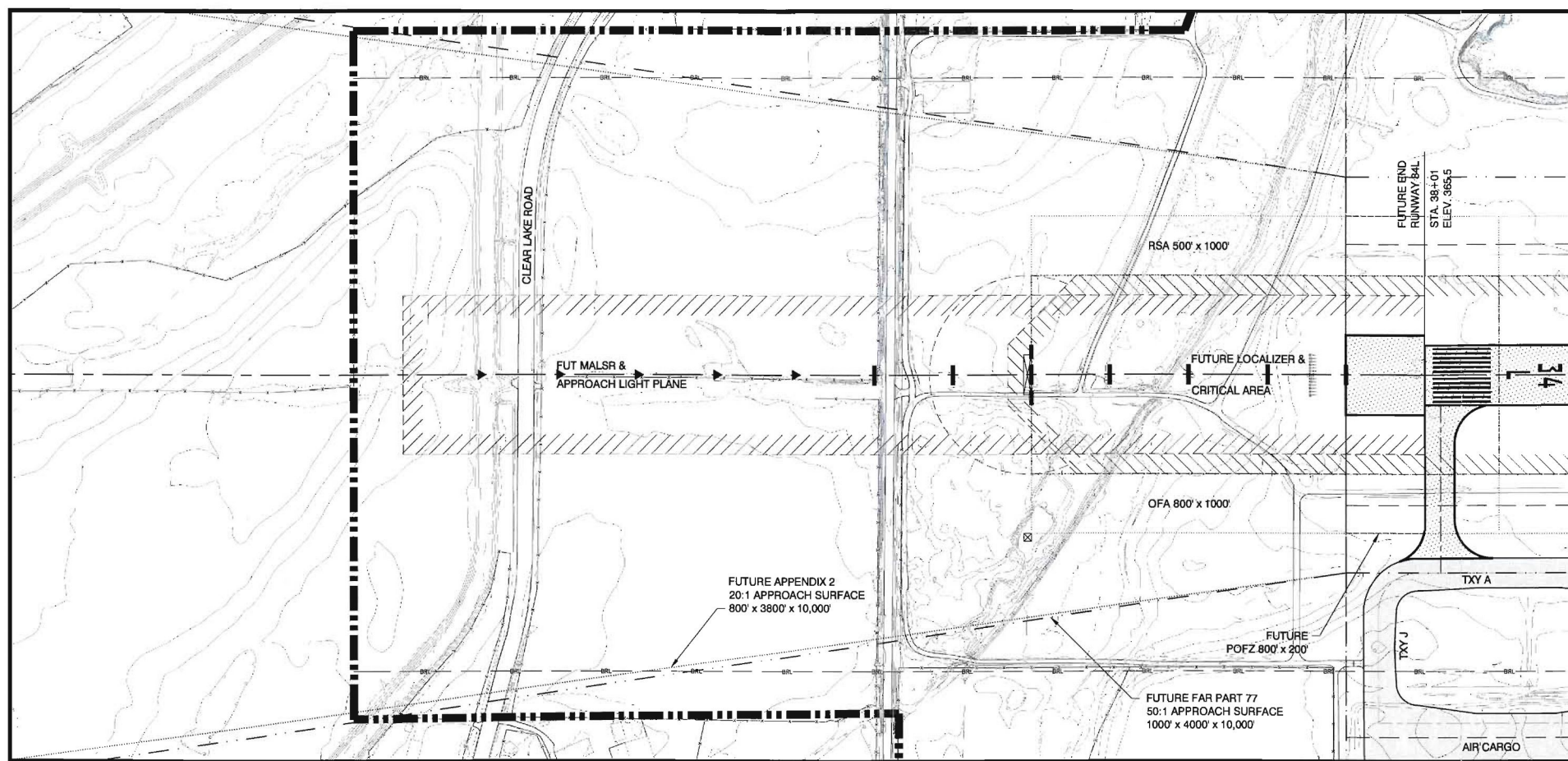
RUNWAY END	CAT.	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	10	SEE TERPS	---	---
34L	8	800'x3800'x10,000'	200'	20:1
16L	9	800'x3800'x10,000'	200'	34:1
34R	8	800'x3800'x10,000'	200'	20:1
ALL	12	400'x21,648'x12,000'	0	62.5:1
ENDS*	11	1000'x12,000'x648'	0	40:1

* TERMINAL PROCEDURE 'EUGENE SEVEN DEPARTURE' APPLIES TO ALL RUNWAY ENDS.



NO.	REVISION	SPONSOR	DATE
AIRPORT LAYOUT PLAN EUG - EUGENE AIRPORT - EUGENE, OREGON EXISTING RUNWAY 16R/34L			
DESIGN: DTS	DRAWN: RJW	DATE: 10 DECEMBER 09	SHEET 6 OF 21

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EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VORTAC FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAR PART 77 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

FUTURE FAR PART 77 APPROACH SURFACES

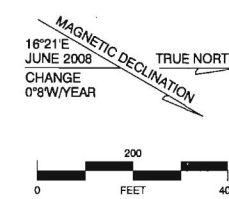
RUNWAY END	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	1000x4000x10,000'	200'	50:1
34L	1000x4000x10,000'	200'	50:1
18L	1000x4000x10,000'	200'	50:1
34R	1000x4000x10,000'	200'	50:1

1. PRECISION APPROACH CONSISTS OF ADDITIONAL SURFACES, SEE PART 77 SHEET.

APPENDIX 2 SURFACES

RUNWAY END	CAT.	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	10	SEE TERPS	---	---
34L	8	800x3800x10,000'	200'	20:1
18L	9	800x3800x10,000'	200'	34:1
34R	8	800x3800x10,000'	200'	20:1
ALL ENDS*	12	4000x21,648x12,000'	0	62.5:1
	11	1000x10,200x5466'	0	40:1

* TERMINAL PROCEDURE: EUGENE SEVEN DEPARTURE APPLIES TO ALL RUNWAY ENDS.



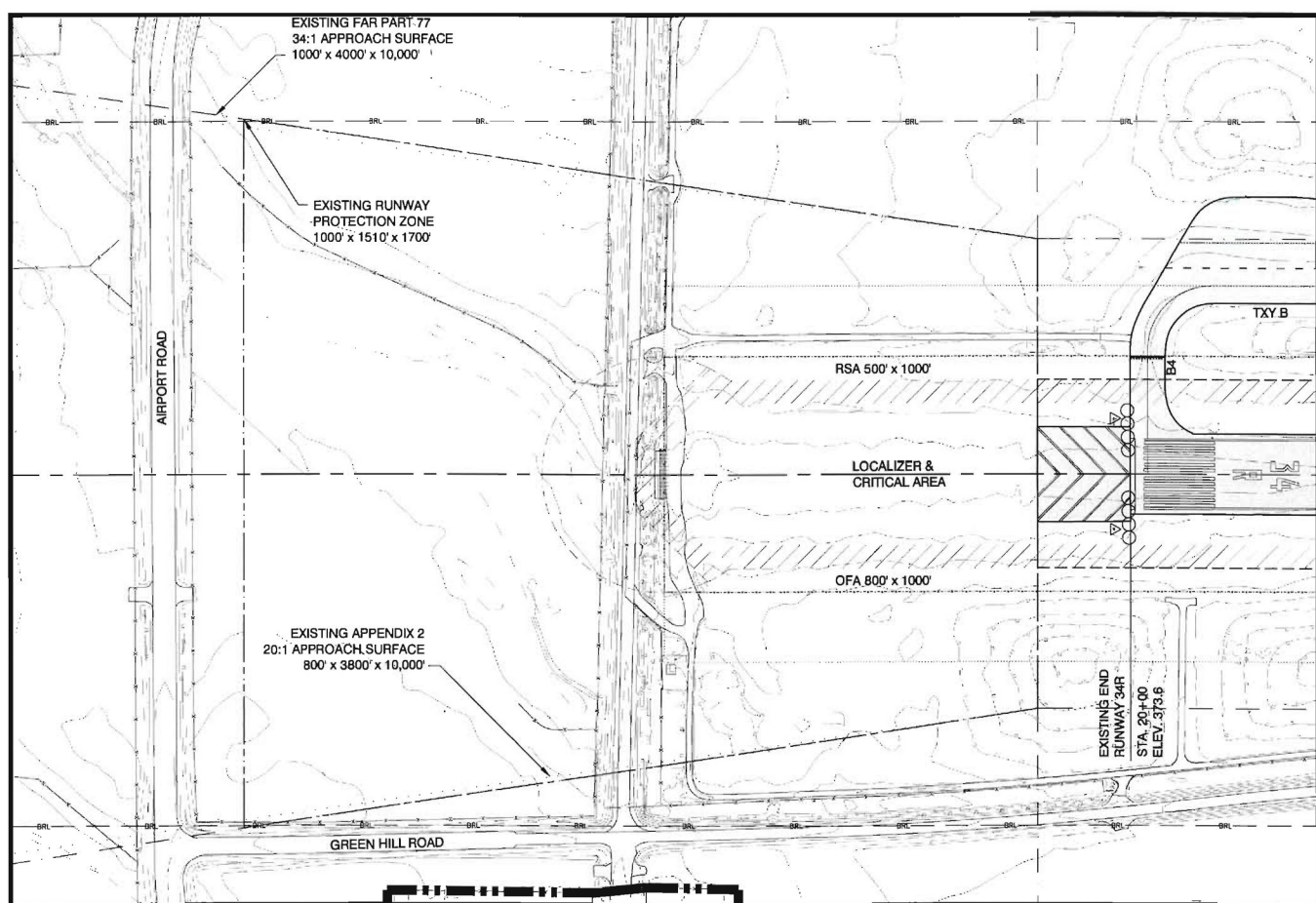
NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
FUTURE RUNWAY 34L

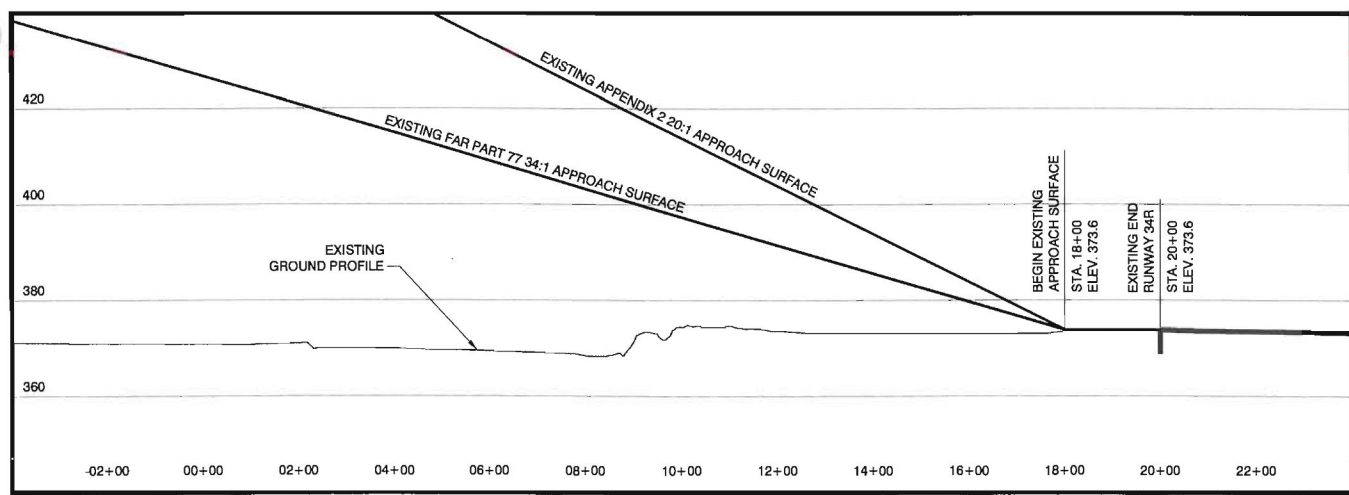
MEAD HUNT
EUGENE AIRPORT

DESIGN: DTS | DRAWN: RLW | DATE: 10 DECEMBER 06 | SHEET 7 OF 21

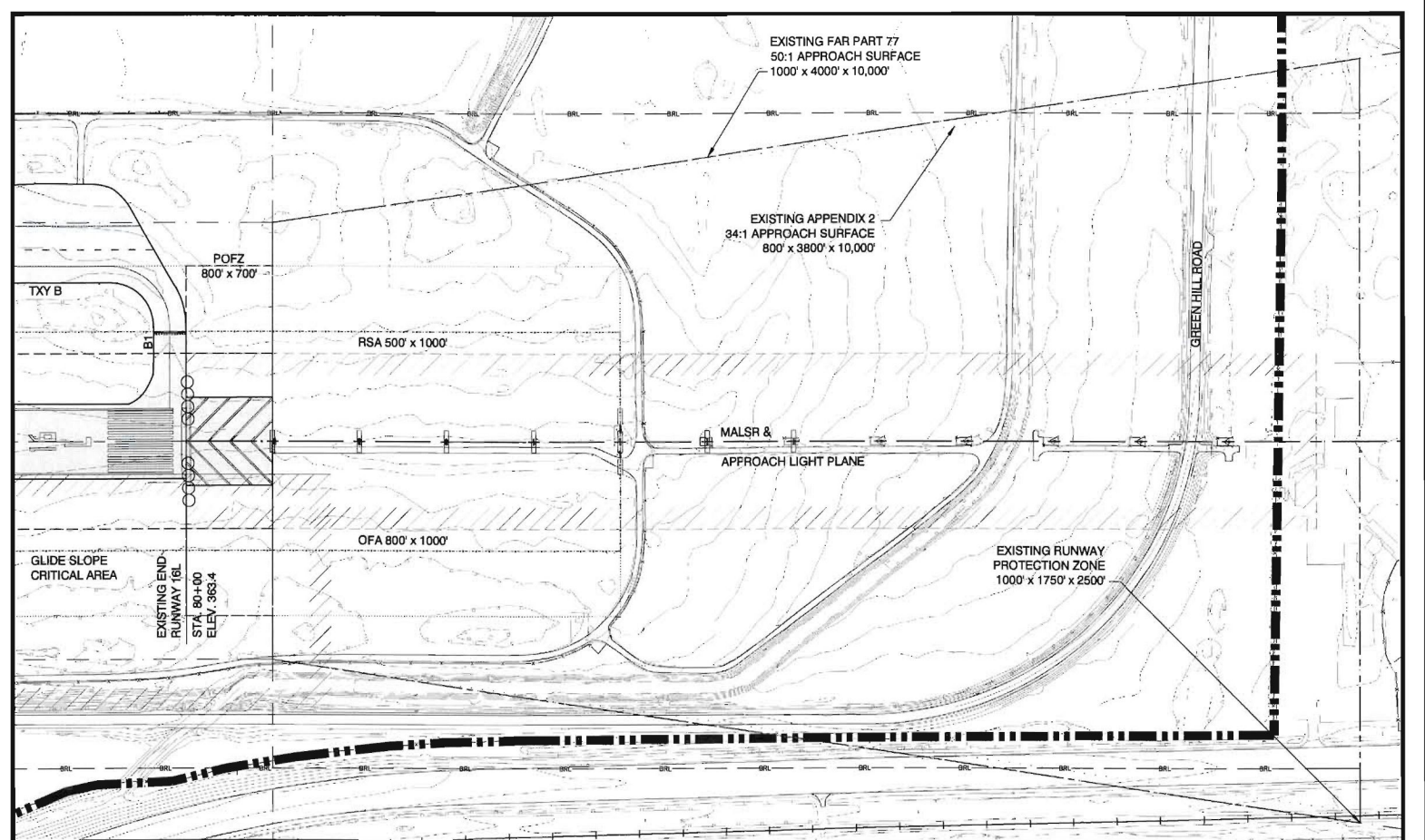
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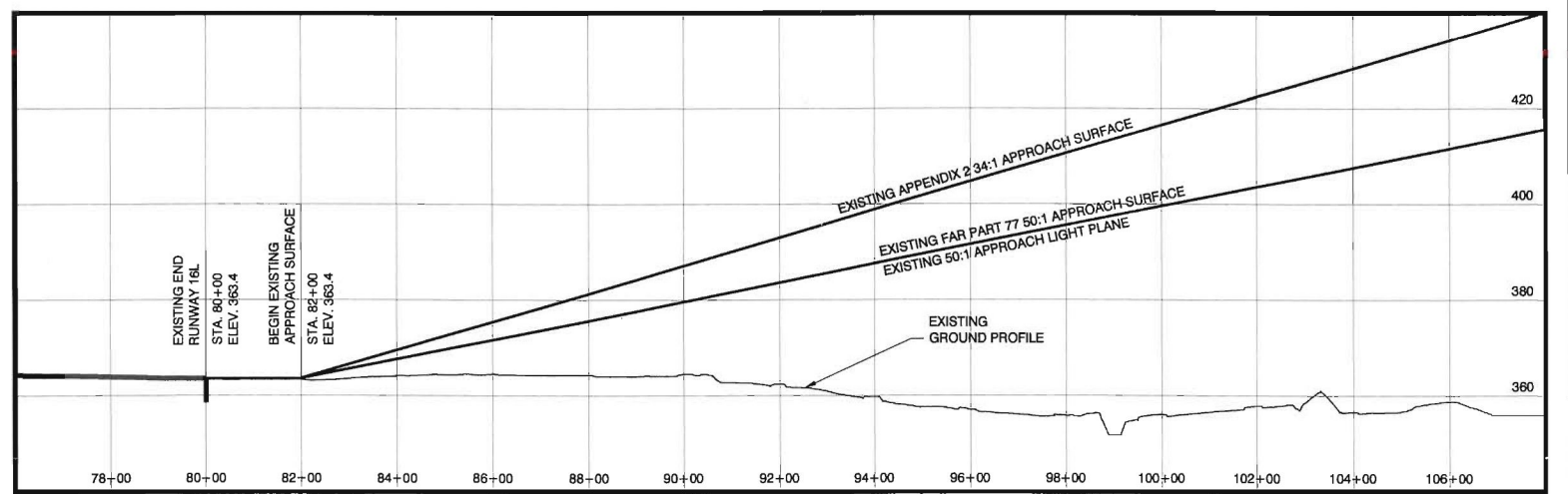
EXISTING RUNWAY END 34R - PLAN



EXISTING RUNWAY END 34R - PROFILE



EXISTING RUNWAY END 16L - PLAN



EXISTING RUNWAY END 16L - PROFILE

EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VORTAC FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAR PART 77 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

EXISTING FAR PART 77 APPROACH SURFACES

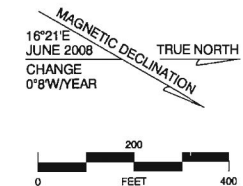
RUNWAY END	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	1000'x4000'x10,000'	200'	50:1
34L	1000'x4000'x10,000'	200'	34:1
16L	1000'x4000'x10,000'	200'	50:1
34R	1000'x4000'x10,000'	200'	34:1

1. PRECISION APPROACH CONSISTS OF ADDITIONAL SURFACES, SEE PART 77 SHEET.

APPENDIX 2 SURFACES

RUNWAY END	CAT.	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	10	SEE TERPS	---	---
34L	8	800'x3800'x10,000'	200'	20:1
16L	9	800'x3800'x10,000'	200'	34:1
34R	8	800'x3800'x10,000'	200'	20:1
ALL	12	400'x21,648'x12,000'	0	62.5:1
ENDS*	11	1000'x10,200'x648'	0	42:1

* TERMINAL PROCEDURE EUGENE SEVEN DEPARTURE APPLIES TO ALL RUNWAY ENDS.



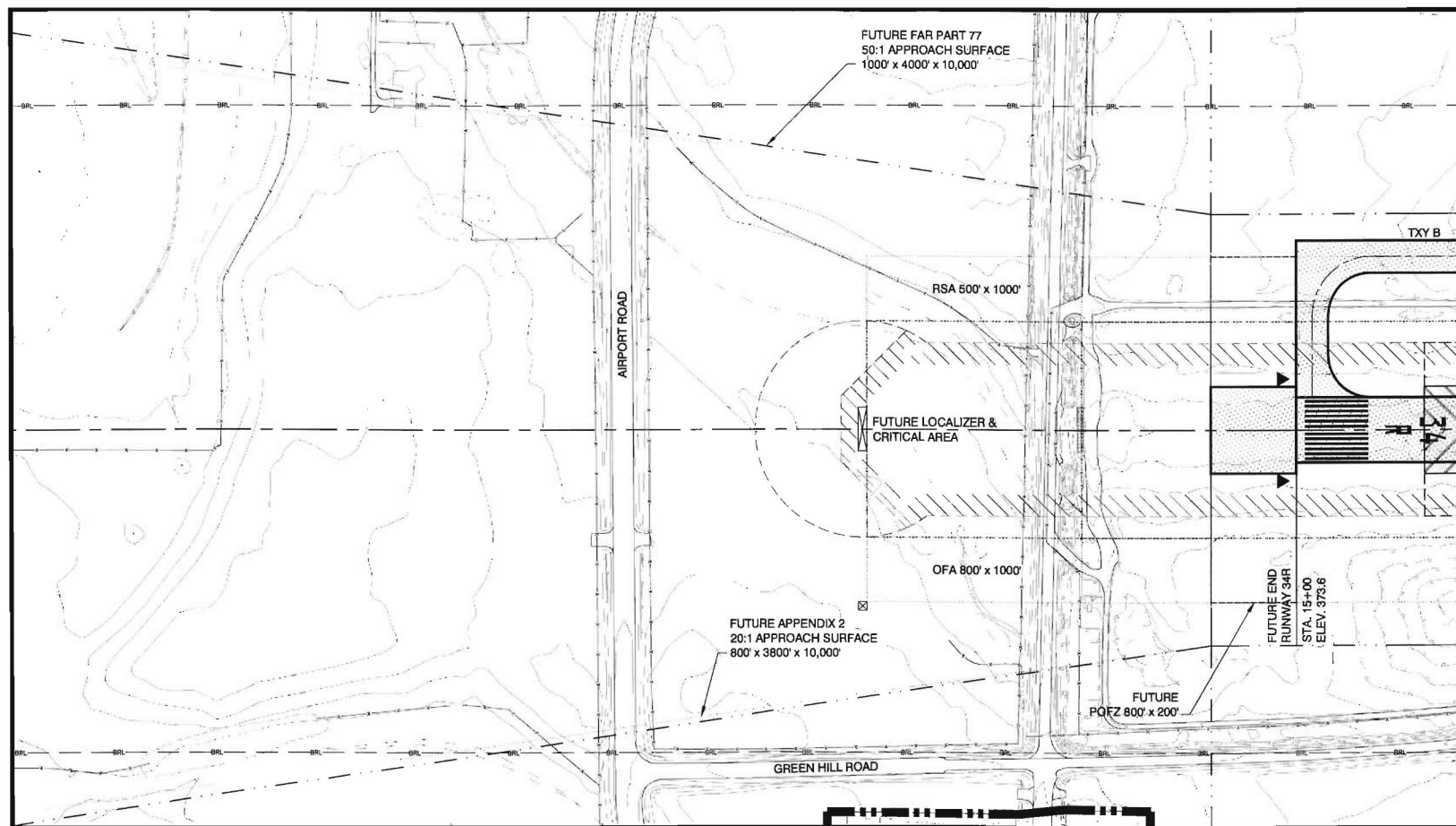
NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
EXISTING RUNWAY 16L/34R

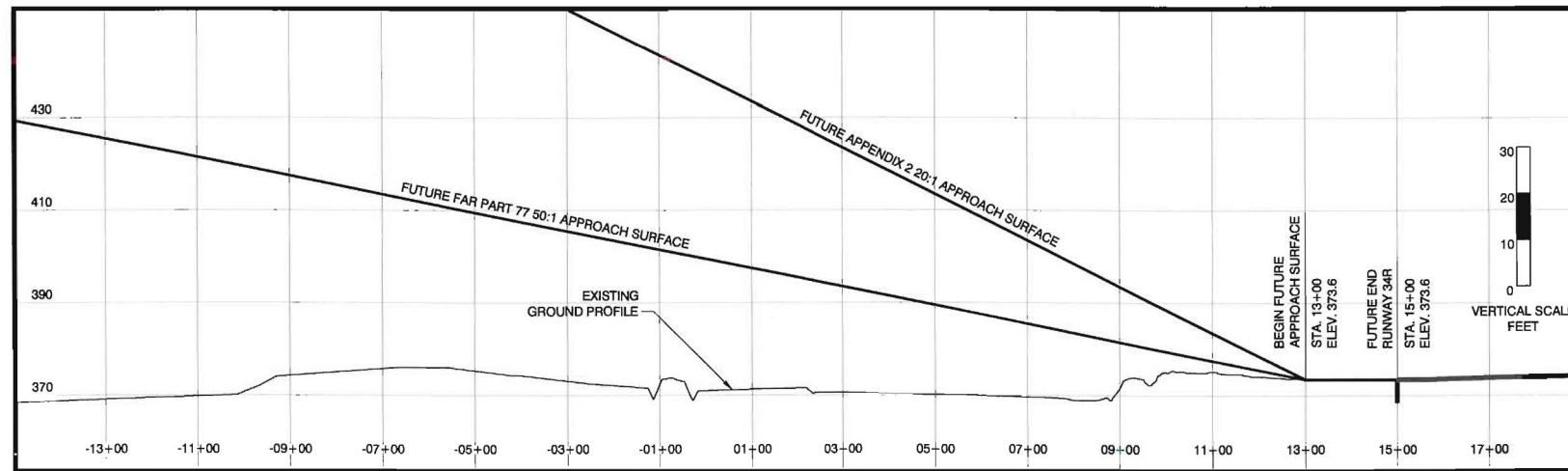
MEAD HUNT **EUGENE AIRPORT**

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 8 OF 21

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FUTURE RUNWAY END 34R - PLAN



FUTURE RUNWAY END 34R - PROFILE

EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VORTAC FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAR PART 77 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

FUTURE FAR PART 77 APPROACH SURFACES

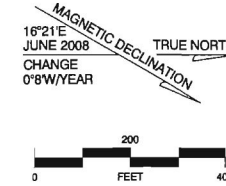
RUNWAY END	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	1000'x4000'x10,000'	200'	50:1
34L	1000'x4000'x10,000'	200'	50:1
16L	1000'x4000'x10,000'	200'	50:1
34R	1000'x4000'x10,000'	200'	50:1

1. PRECISION APPROACH CONSISTS OF ADDITIONAL SURFACES, SEE PART 77 SHEET.

APPENDIX 2 SURFACES

RUNWAY END	CAT.	DIMENSIONS	DISTANCE FROM RUNWAY END	SLOPE
16R	10	SEE TERPS	---	---
34L	8	800'x3800'x10,000'	200'	20:1
16L	9	800'x3800'x10,000'	200'	34:1
34R	8	800'x3800'x10,000'	200'	20:1
ALL ENDS*	12	400'x21,846'x12,000'	0	62.5:1
	11	1000'x10,200'x6466'	0	40:1

* TERMINAL PROCEDURE EUGENE SEVEN DEPARTURE APPLIES TO ALL RUNWAY ENDS.



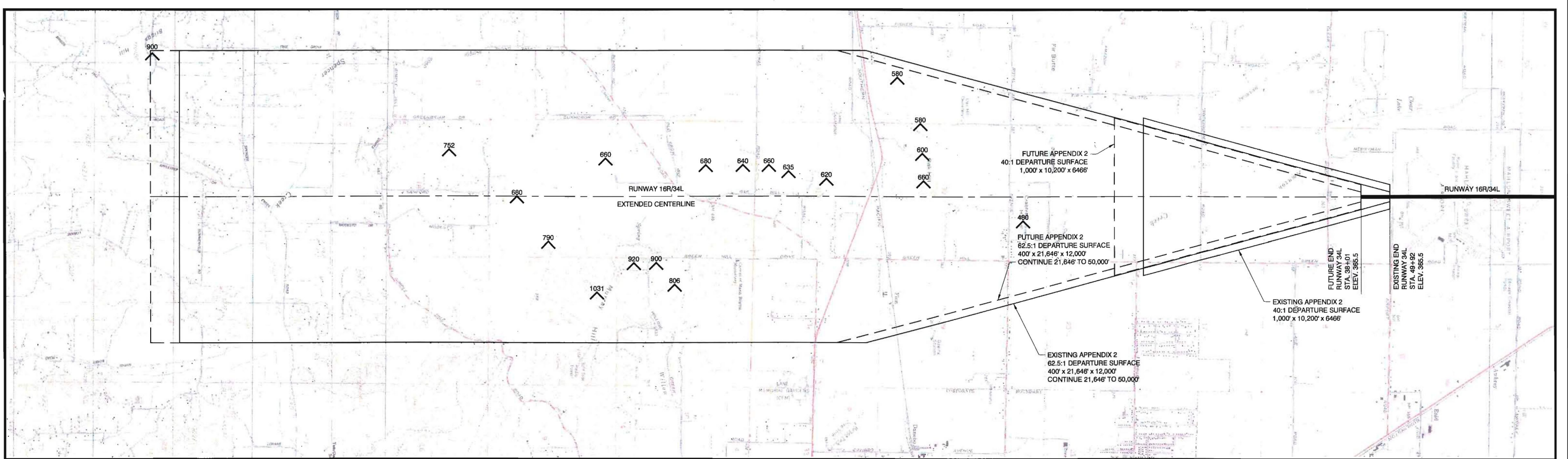
NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
FUTURE RUNWAY 34R

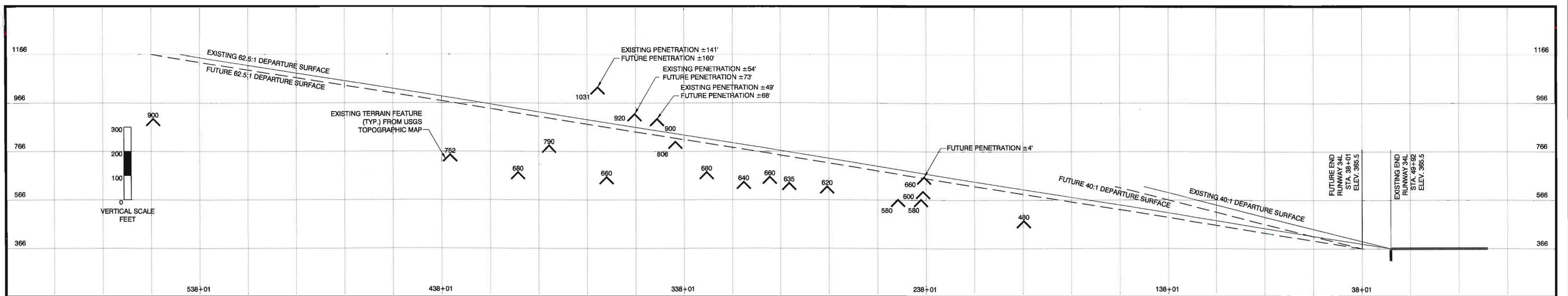
MEAD HUNT **EUGENE AIRPORT**

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 9 OF 21

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APPENDIX 2 DEPARTURE SURFACES - RUNWAY END 34L - PLAN



APPENDIX 2 DEPARTURE SURFACES - RUNWAY END 34L - PROFILE

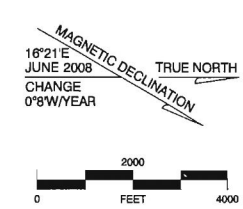
NO.	REVISION	SPONSOR	DATE

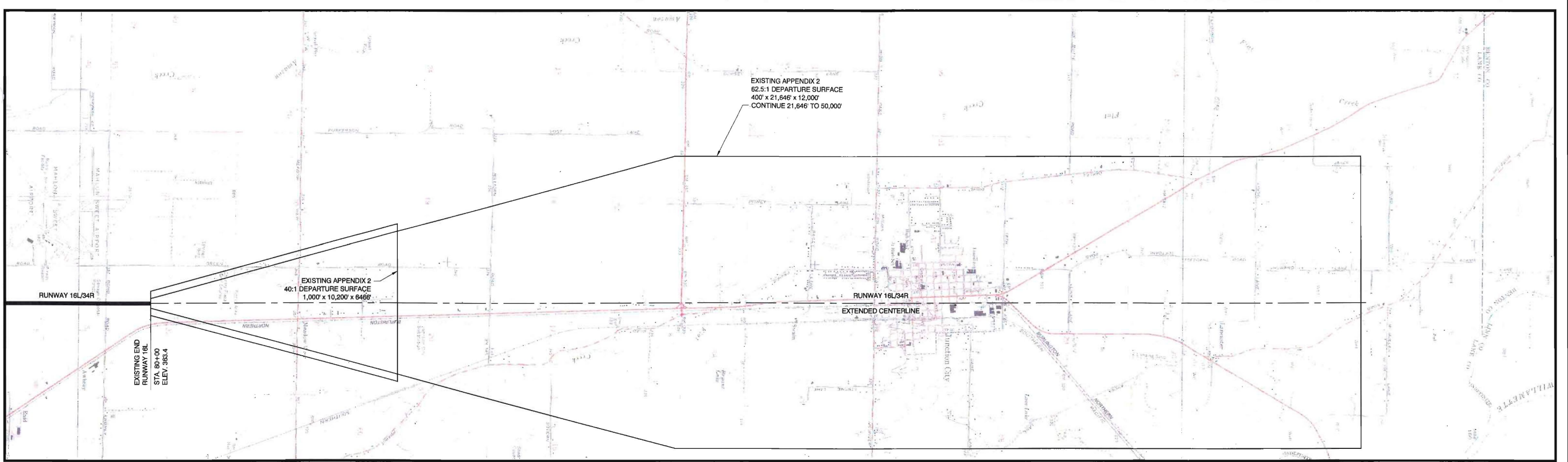
AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON

RWY 34L - APP 2 DEPARTURE SURFACES

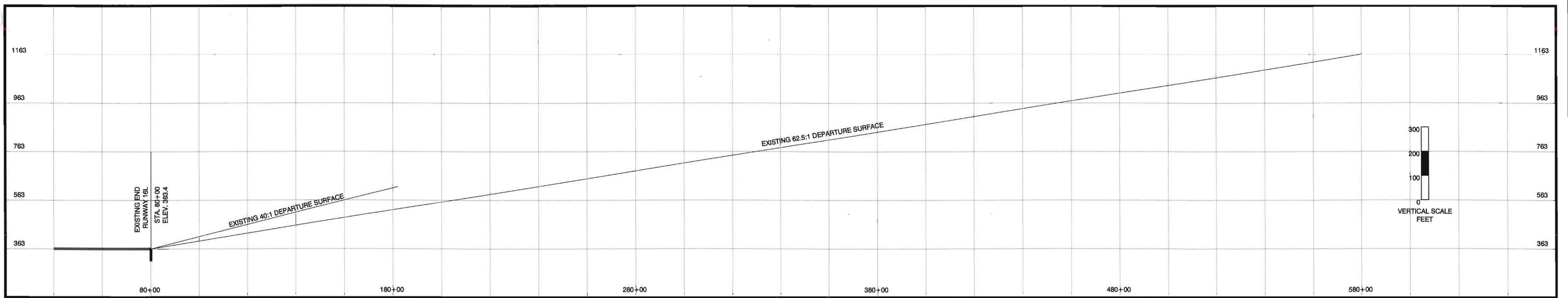
DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 11 OF 21

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APPENDIX 2 DEPARTURE SURFACES - RUNWAY END 16L - PLAN



APPENDIX 2 DEPARTURE SURFACES - RUNWAY END 16L - PROFILE

10/11/09 10:52 AM 10/11/09 10:52 AM
 10/11/09 10:52 AM 10/11/09 10:52 AM

NO.	REVISION	SPONSOR	DATE

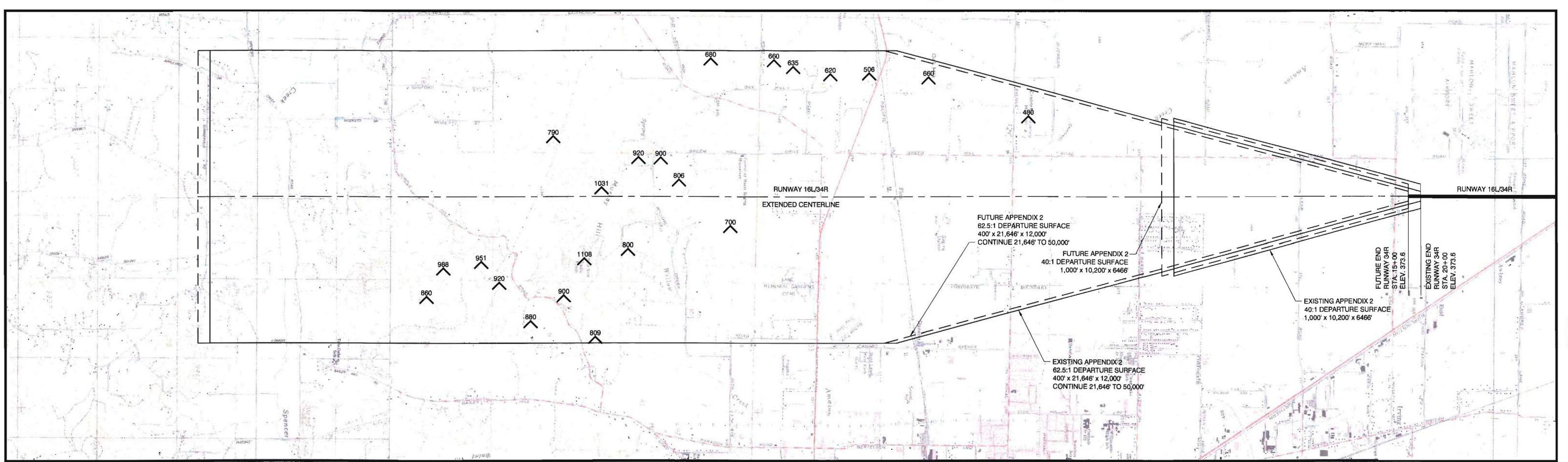
AIRPORT LAYOUT PLAN
 EUG - EUGENE AIRPORT - EUGENE, OREGON
RWY 16L - APP 2 DEPARTURE SURFACES

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 12 OF 21

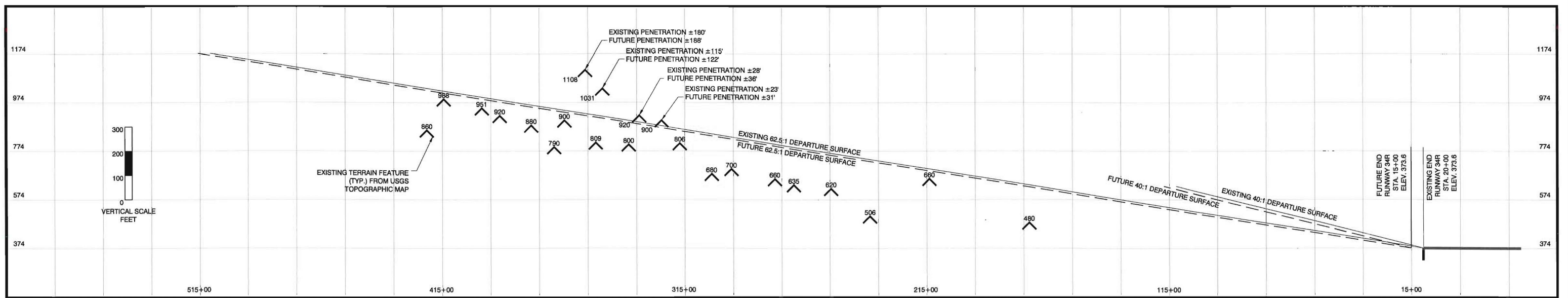
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MAGNETIC DECLINATION
 16°21'E
 JUNE 2008
 CHANGE
 0°/YEAR
 TRUE NORTH

0 2000 4000
 FEET



APPENDIX 2 DEPARTURE SURFACES - RUNWAY END 34R - PLAN



APPENDIX 2 DEPARTURE SURFACES - RUNWAY END 34R - PROFILE

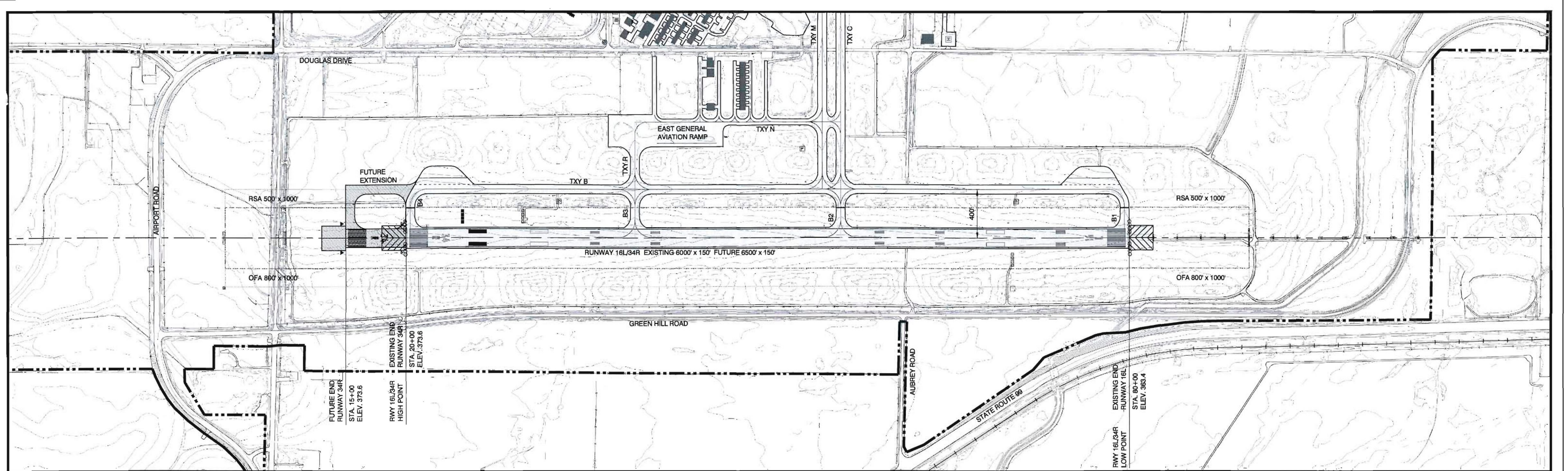
NO.	REVISION	SPONSOR	DATE
AIRPORT LAYOUT PLAN EUG - EUGENE AIRPORT - EUGENE, OREGON RWY 34R - APP 2 DEPARTURE SURFACES			
DESIGN: DTS	DRAWN: RLW	DATE: 10 DECEMBER 08	SHEET 13 OF 21

MAGNETIC DECLINATION
 16°21' E
 JUNE 2008
 CHANGE
 0°/SW/YEAR

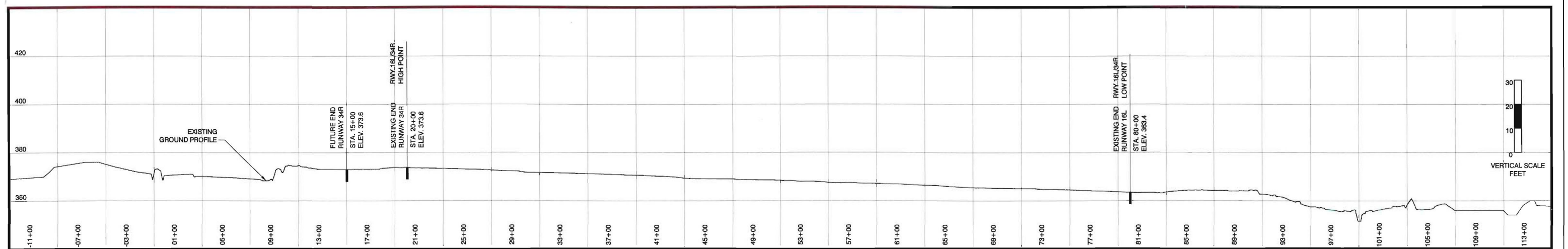
TRUE NORTH

0 2000 4000
 FEET

PROJECT: AIRPORT LAYOUT PLAN - RWY 34R - APP 2 DEPARTURE SURFACES
 SHEET NO. 13 OF 21

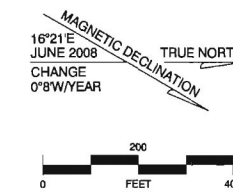


RUNWAY 16L/34R - PLAN



RUNWAY 16L/34R - PROFILE

EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VORTAC FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAIR PART 77 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---



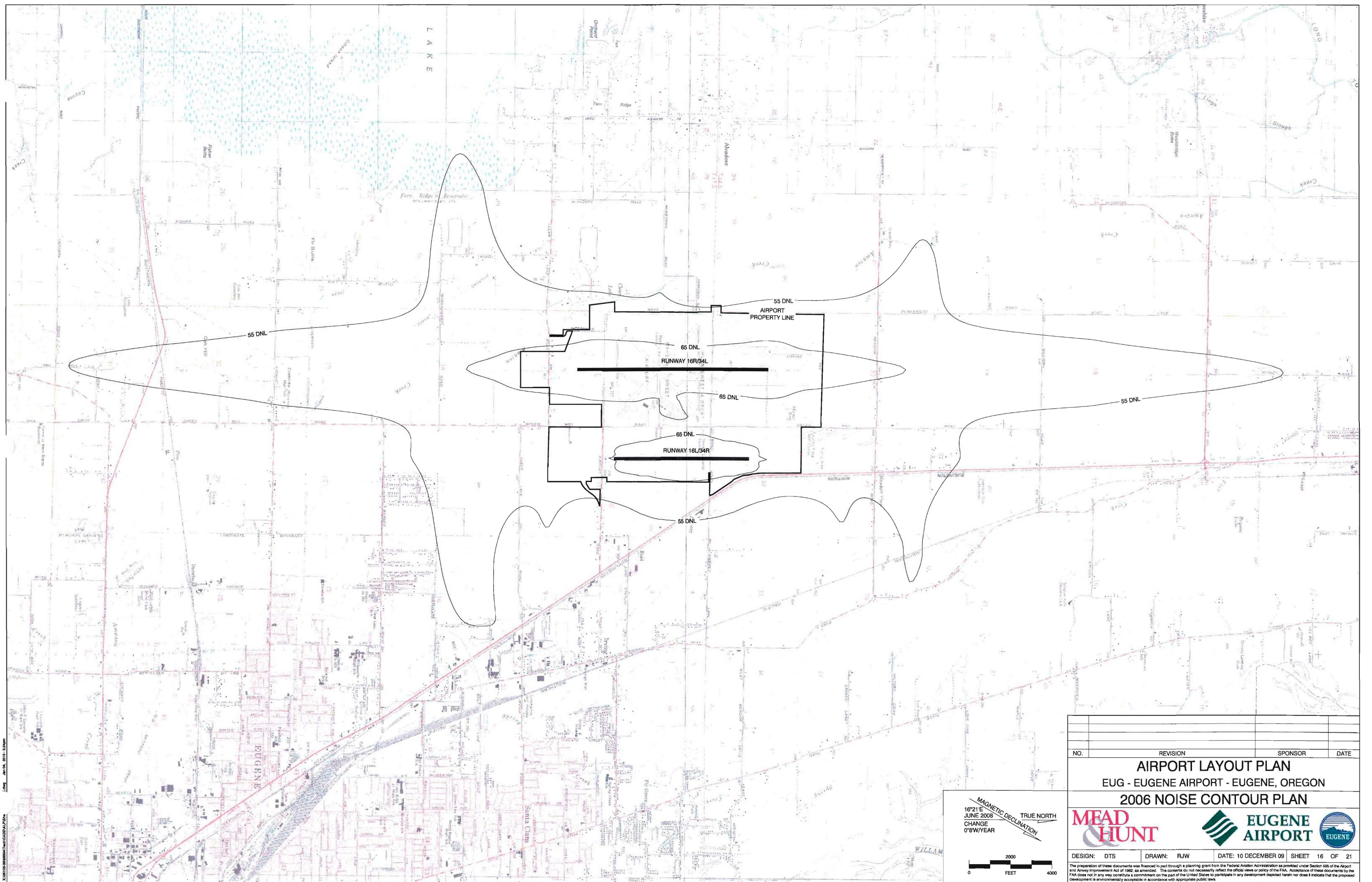
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AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
RUNWAY 16L/34R - PLAN & PROFILE

MEAD HUNT **EUGENE AIRPORT**

DESIGN: DTS DRAWN: RLW DATE: 10 DECEMBER 09 SHEET 15 OF 21

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NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
2006 NOISE CONTOUR PLAN

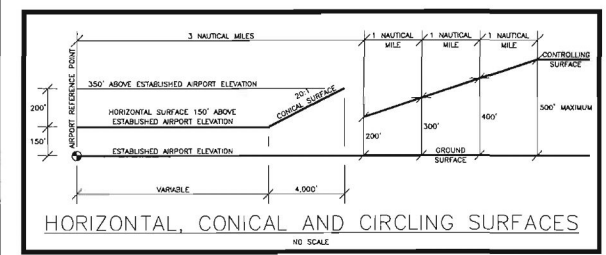
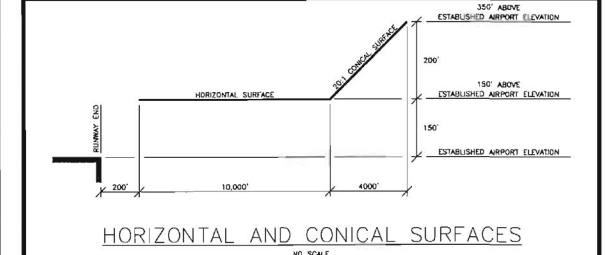
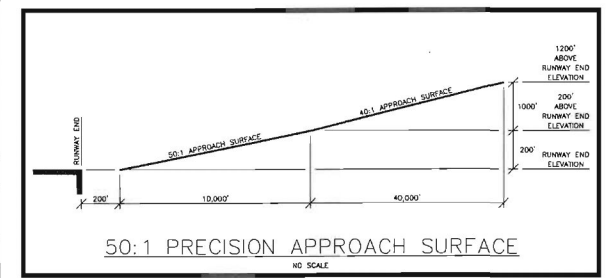
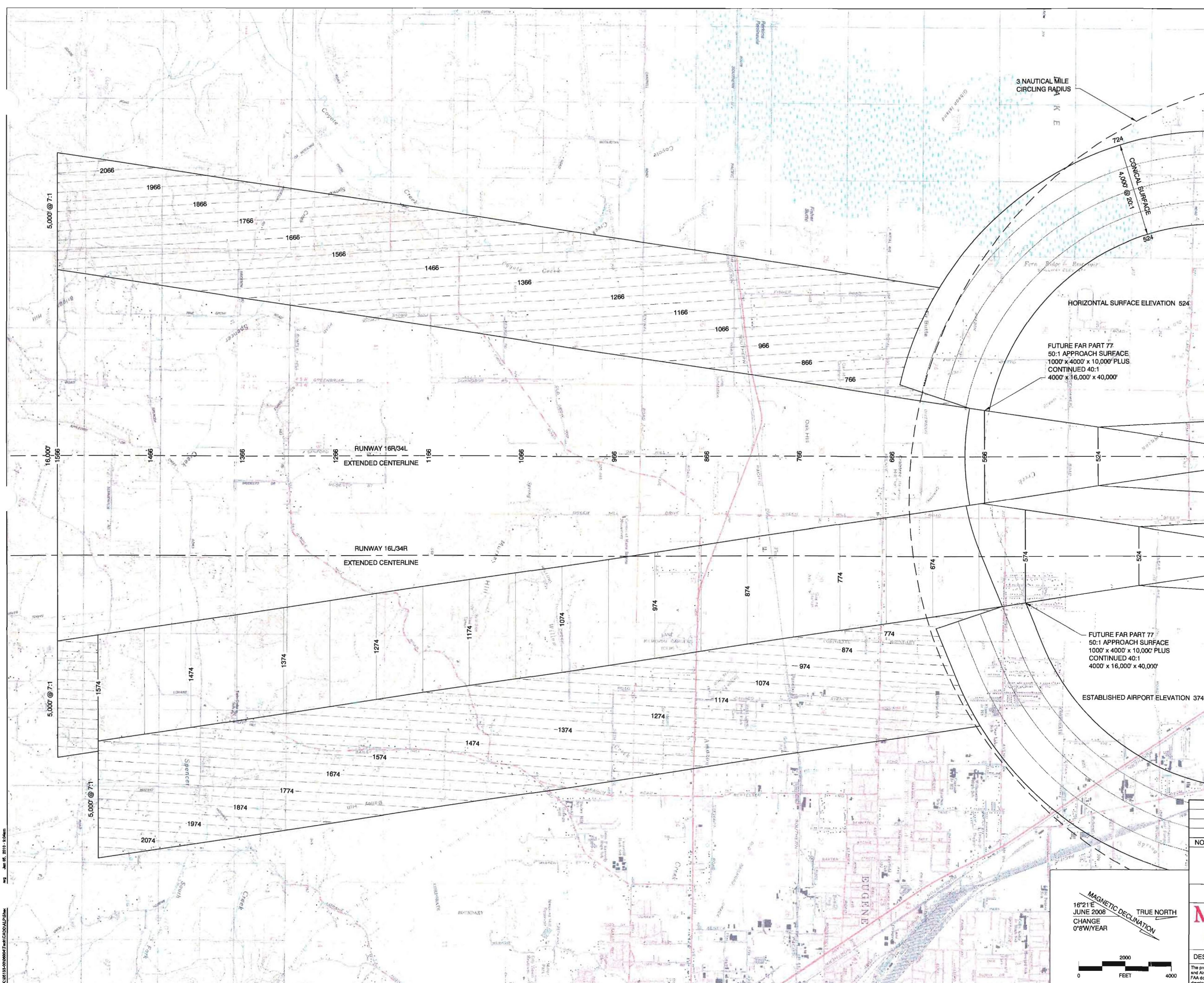
MEAD HUNT

DESIGN: DTS DRAWN: RLW DATE: 10 DECEMBER 09 SHEET 16 OF 21

EUGENE AIRPORT

MAGNETIC DECLINATION: 16°21' E, JUNE 2008, TRUE NORTH, CHANGE 0'S/WYEAR. Scale: 0 to 4000 FEET.

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GENERAL NOTES

APPROACH SURFACE TO PAVED RUNWAY END BEGINS 200' BEYOND RUNWAY END.

ANY HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA, INCLUDING AN INITIAL APPROACH SEGMENT, A DEPARTURE AREA, AND A CIRCLING APPROACH AREA, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE IS AN OBSTRUCTION TO AIR NAVIGATION.

NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
FAR PART 77 SURFACES PLAN - SOUTH

MEAD HUNT **EUGENE AIRPORT**

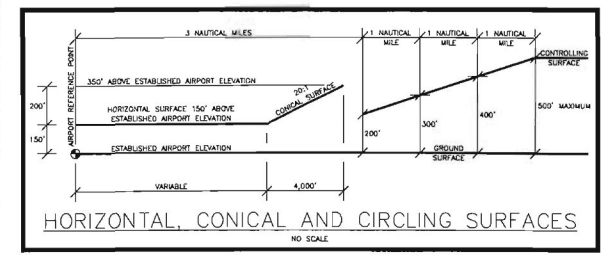
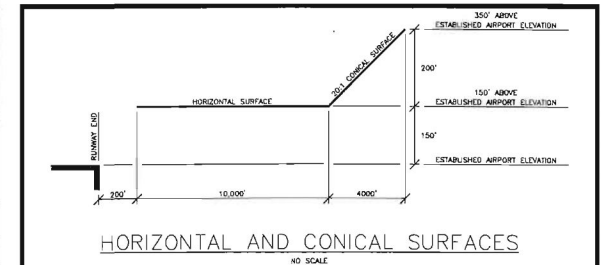
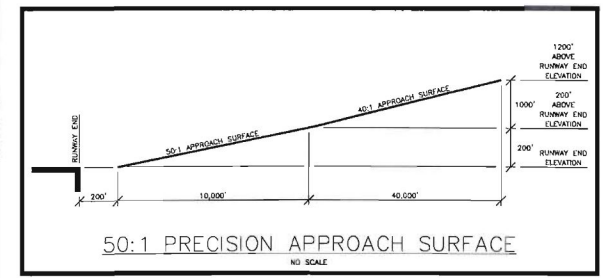
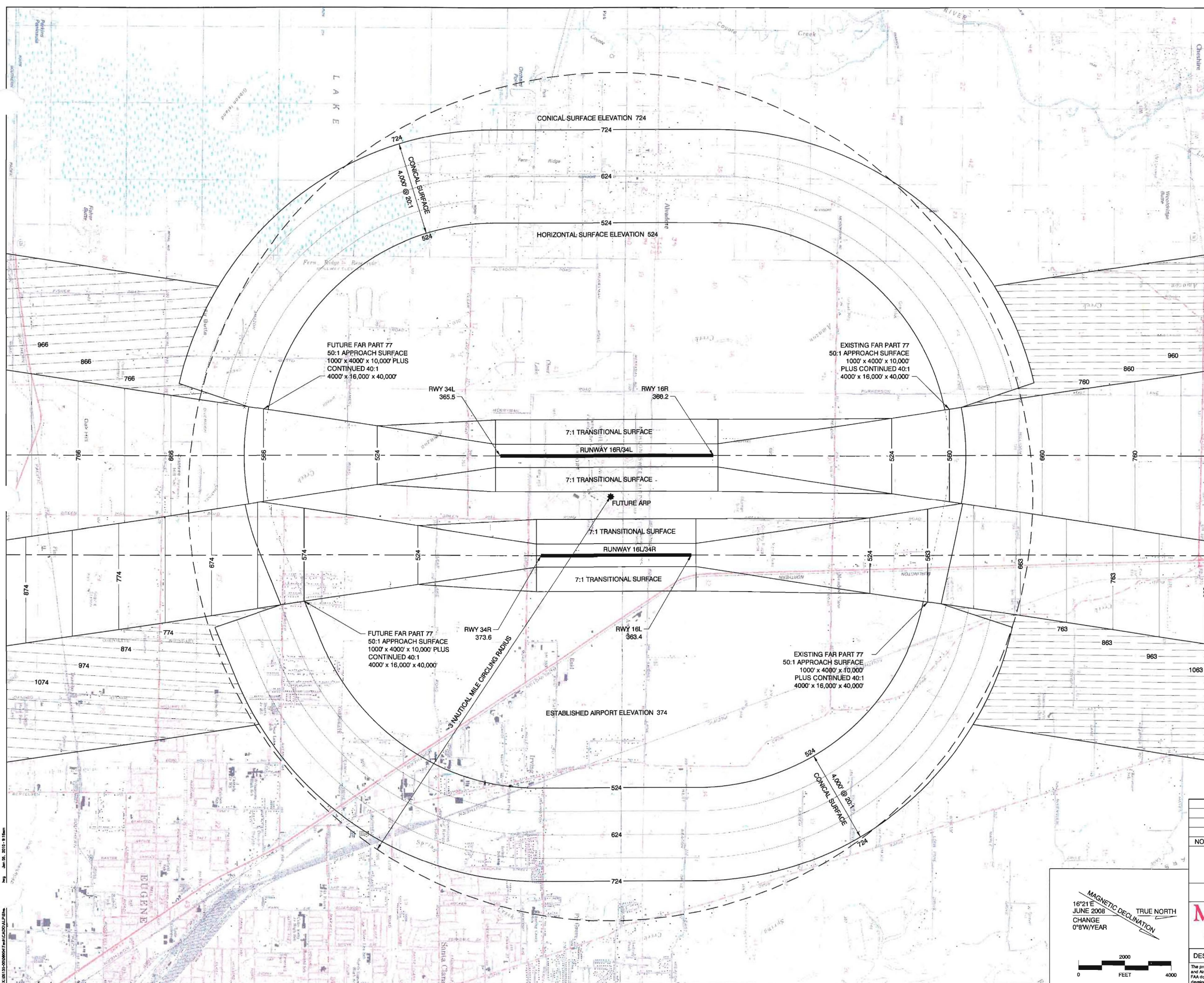
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MAGNETIC DECLINATION
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GENERAL NOTES

APPROACH SURFACE TO PAVED RUNWAY END BEGINS 200' BEYOND RUNWAY END.

ANY HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA, INCLUDING AN INITIAL APPROACH SEGMENT, A DEPARTURE AREA, AND A CIRCLING APPROACH AREA, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE IS AN OBSTRUCTION TO AIR NAVIGATION.

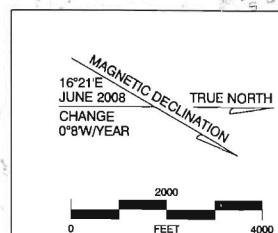
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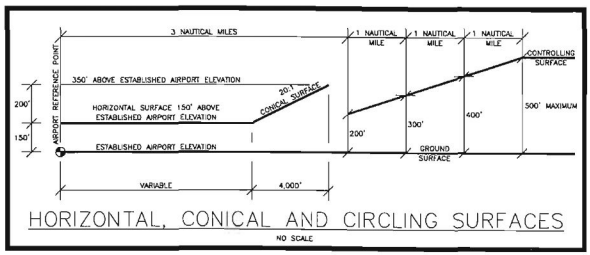
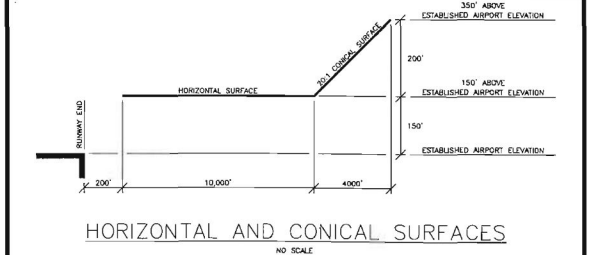
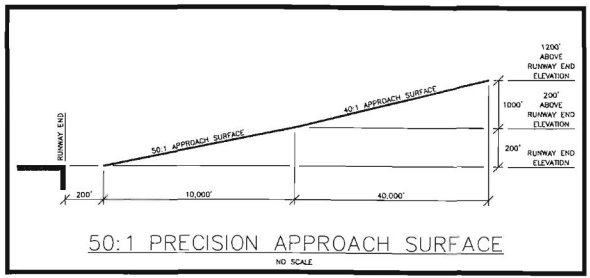
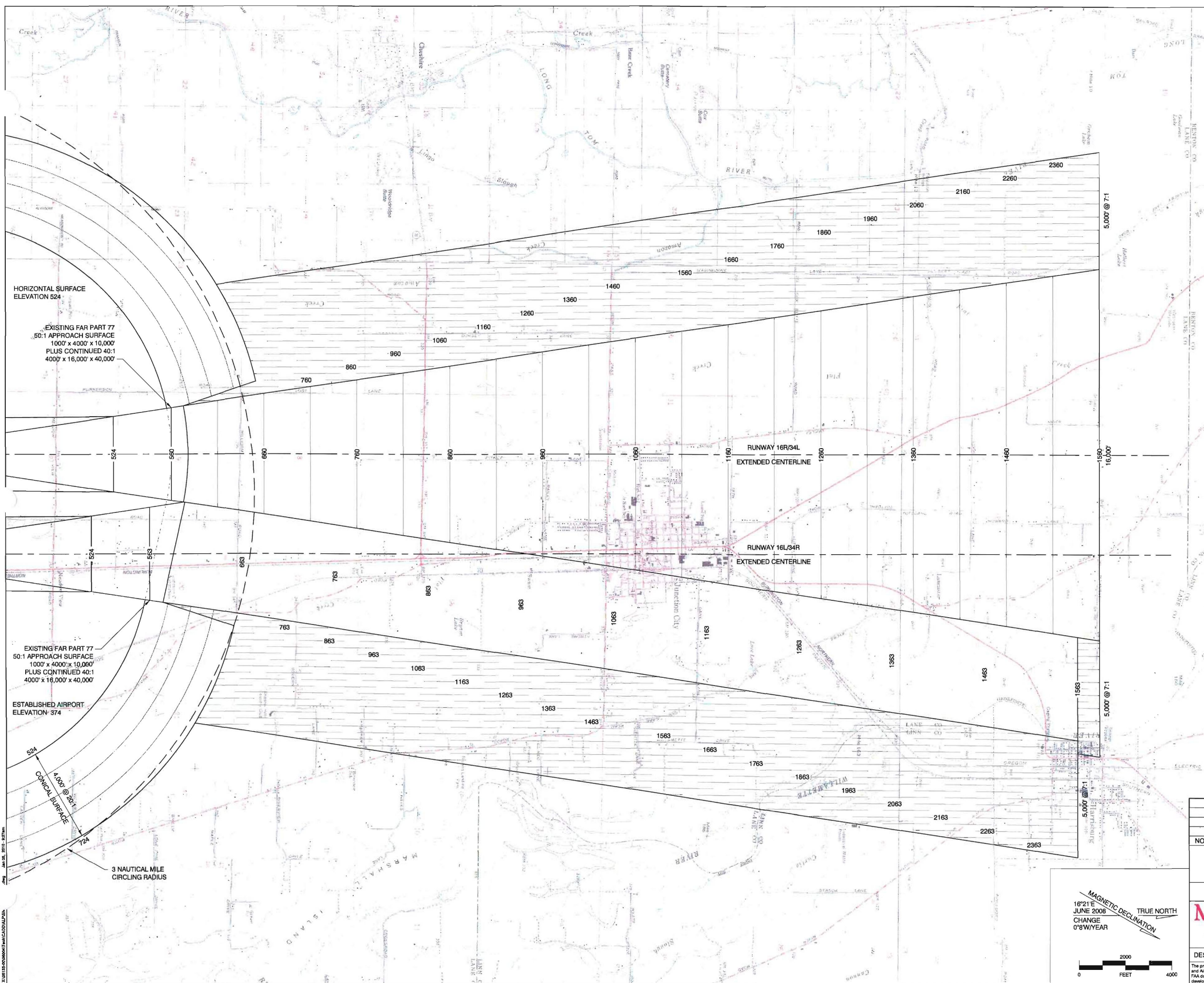
AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
FAR PART 77 SURFACES PLAN - MID

MEAD HUNT **EUGENE AIRPORT**

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 16 OF 21

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GENERAL NOTES
 APPROACH SURFACE TO PAVED RUNWAY END BEGINS 200' BEYOND RUNWAY END.
 ANY HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA INCLUDING AN INITIAL APPROACH SEGMENT, A DEPARTURE AREA, AND A CIRCLING APPROACH AREA, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE IS AN OBSTRUCTION TO AIR NAVIGATION.

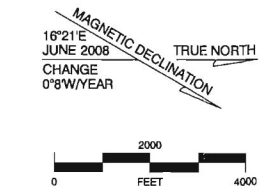
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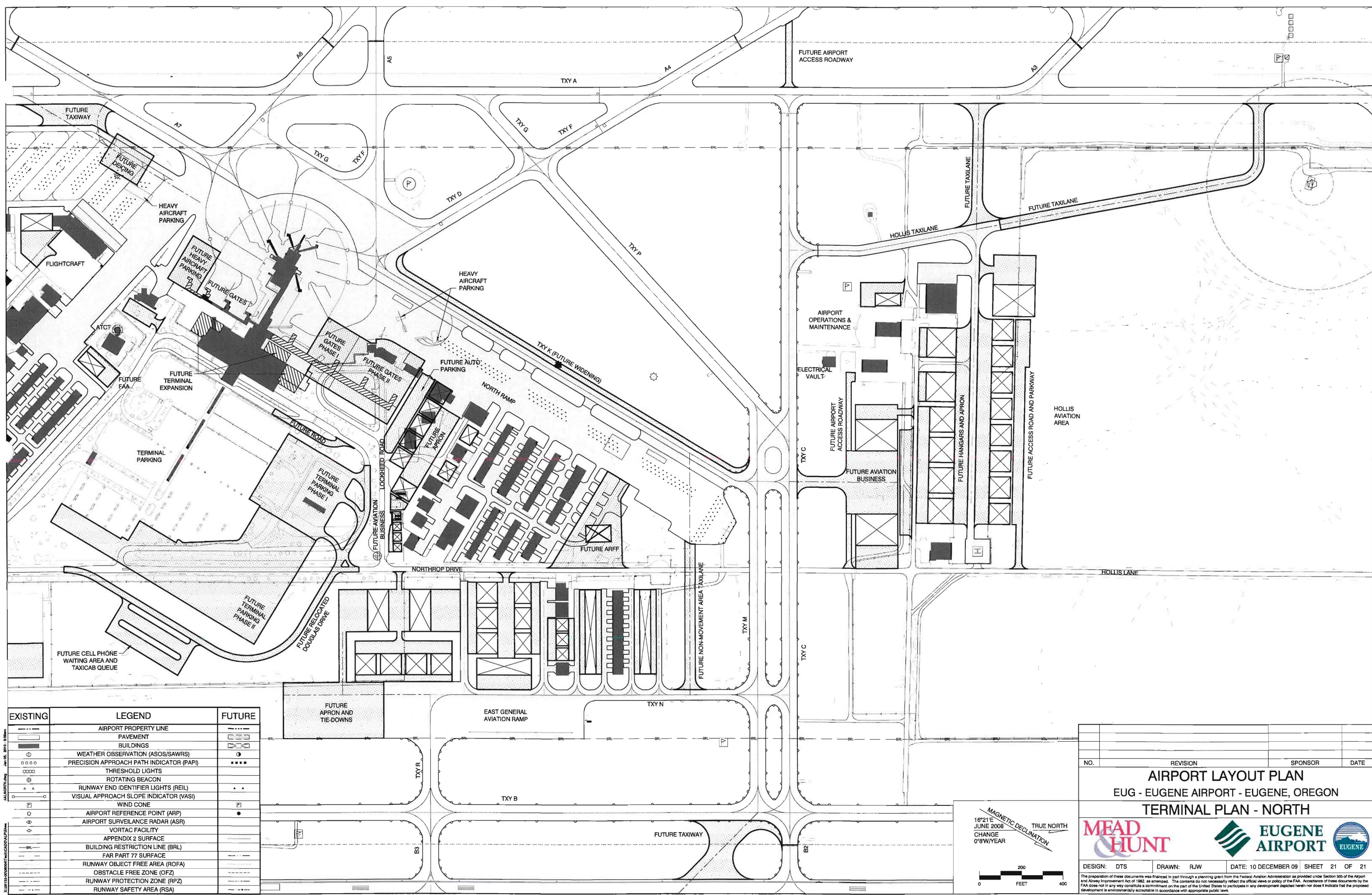
AIRPORT LAYOUT PLAN
 EUG - EUGENE AIRPORT - EUGENE, OREGON
FAR PART 77 SURFACES PLAN - NORTH

MEAD HUNT **EUGENE AIRPORT**

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 00 SHEET 10 OF 21

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EXISTING	LEGEND	FUTURE
---	AIRPORT PROPERTY LINE	---
---	PAVEMENT	---
---	BUILDINGS	---
---	WEATHER OBSERVATION (ASOS/SAWRS)	---
---	PRECISION APPROACH PATH INDICATOR (PAPI)	---
---	THRESHOLD LIGHTS	---
---	ROTATING BEACON	---
---	RUNWAY END IDENTIFIER LIGHTS (REIL)	---
---	VISUAL APPROACH SLOPE INDICATOR (VASI)	---
---	WIND CONE	---
---	AIRPORT REFERENCE POINT (ARP)	---
---	AIRPORT SURVEILLANCE RADAR (ASR)	---
---	VORTAC FACILITY	---
---	APPENDIX 2 SURFACE	---
---	BUILDING RESTRICTION LINE (BRL)	---
---	FAI PART 71 SURFACE	---
---	RUNWAY OBJECT FREE AREA (ROFA)	---
---	OBSTACLE FREE ZONE (OFZ)	---
---	RUNWAY PROTECTION ZONE (RPZ)	---
---	RUNWAY SAFETY AREA (RSA)	---

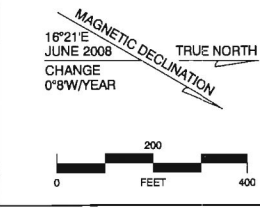
NO.	REVISION	SPONSOR	DATE

AIRPORT LAYOUT PLAN
EUG - EUGENE AIRPORT - EUGENE, OREGON
TERMINAL PLAN - NORTH

DESIGN: DTS DRAWN: RJW DATE: 10 DECEMBER 09 SHEET 21 OF 21

This presentation of these documents was prepared in part through a reporting grant from the Federal Aviation Administration as provided under Section 106 of the Airport and Airway Improvement Act of 1982, as amended. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of these documents by the FAA does not constitute a recommendation on the part of the United States Department of Transportation. The development of these documents was not done in accordance with the provisions of the National Environmental Policy Act of 1969, as amended.



Appendix **A**
Glossary of Terms

Glossary of Terms

ABOVE GROUND LEVEL (AGL): An elevation datum given in feet above ground level.

AIR CARRIER: A person who undertakes directly by lease, or other arrangement, to engage in air transportation. (FAR 1) (Also see Certificated Air Carrier)

AIR CARRIERS: The commercial system of air transportation, consisting of the certificated air carriers, air taxis (including commuters), supplemental air carriers, commercial operators of large aircraft, and air travel clubs. (FAA Census)

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC): A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace, principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft. (AIM)

AIR TAXI: A classification of air carriers which directly engage in the air transportation of persons, property, mail, or in any combination of such transportation and which do not directly or indirectly utilize large aircraft (over 30 seats or a maximum payload capacity of more than 7,500 pounds) and do not hold a Certificate of Public Convenience and Necessity or economic authority issued by the Department of Transportation. (Also see commuter air carrier and demand air taxi.) (FAA Census)

AIR TRAFFIC CONTROL (ATC): A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic. (FAR 1)

AIRCRAFT ACCIDENT: An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage. (NTSB)

AIRCRAFT APPROACH CATEGORY: A grouping of aircraft (Categories A–E) based on 1.3 times their stall speed in their landing configuration at their maximum certificated landing weight. (Airport Design)

AIRCRAFT OPERATION: The airborne movement of aircraft in controlled or non-controlled airport terminal areas and about given en route fixes or at other points where counts can be made. There are two types of operations — local and itinerant. (FAA Stats)

AIRCRAFT PARKING LINE LIMIT (APL): A line established by the airport authorities beyond which no part of a parked aircraft should protrude. (Airport Design)

AIR/FIRE ATTACK BASE: An established on-airport base of operations for the purposes of aerial suppression of large-scale fires by specially-modified aircraft. Typically, such aircraft are operated by the California Department of Forestry and/or the U.S. Forest Service.

AIRPLANE DESIGN GROUP: A grouping of airplanes (Groups I–V) based on wingspan. (Airport Design)



AIRPORT: An area of land or water that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any. (FAR 1)

AIRPORT ELEVATION: The highest point of an airport's usable runways, measured in feet above mean sea level. (AIM)

AIRPORT HAZARD: Any structure or natural object located on or in the vicinity of a public airport, or any use of land near such airport, that obstructs the airspace required for the flight of aircraft in landing or taking off at the airport or is otherwise hazardous to aircraft landing, taking off, or taxiing at the airport. (Airport Design)

AIRPORT LAND USE COMMISSION (ALUC): A commission established in accordance with the California State Aeronautics Act in each county having an airport operated for the benefit of the general public. The purpose of each ALUC is "to assist local agencies in ensuring compatibility land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of those airports is not already devoted to incompatible uses." An ALUC need not be created if an alternative process, as specified by the statutes, is established to accomplish the same purpose. (California Public Utilities Code, Section 21670 et seq.)

AIRPORT LAYOUT PLAN (ALP): A scale drawing of existing and proposed airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to demonstrate conformance with applicable standards.

AIRPORT REFERENCE CODE (ARC): A coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. (Airport Design)

AIRPORT REFERENCE POINT (ARP): A point established on an airport, having equal relationship to all existing and proposed landing and takeoff areas, and used to geographically locate the airport and for other planning purposes. (Airport Design)

AIRPORT TRAFFIC CONTROL TOWER (ATCT): A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. (AIM)

AIRWAY/FEDERAL AIRWAY: A Class E airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids. (AIM)

ALERT AREA: A special use airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft. (AIM)

APPROACH LIGHT SYSTEM (ALS): An airport lighting system which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended runway centerline during a final approach to landing. Among the specific types of systems are:

- **LDIN**—Lead-in Light System.
- **MALSR**—Medium-intensity Approach Light System with Runway Alignment Indicator Lights.
- **ODALS**—Omnidirectional Approach Light System, a combination of LDIN and REILS.
- **SSALR**—Simplified Short Approach Light System with Runway Alignment Indicator Lights. (AIM)



APPROACH SPEED: The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration. (AIM)

AUTOMATED WEATHER OBSERVING SYSTEM (AWOS): Airport electronic equipment which automatically measures meteorological parameters, reduces and analyzes the data via computer, and broadcasts weather information which can be received on aircraft radios in some applications, via telephone.

AUTOMATIC DIRECTION FINDER (ADF): An aircraft radio navigation system which senses and indicates the direction to a L/MF nondirectional radio beacon (NDB) ground transmitter. (AIM)

AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS): The continuous broadcast of recorded non-control information in selected terminal areas. (AIM)

BACK COURSE APPROACH: A non-precision instrument approach utilizing the rearward projection of the ILS localizer beam.

BALANCED FIELD LENGTH: The runway length at which the distance required for a given aircraft to abort a takeoff and stop on the runway (accelerate-stop distance) equals the distance required to continue the takeoff and reach a height of 35 feet above the runway end (accelerate-go distance).

BASED AIRCRAFT: Aircraft stationed at an airport on a long-term basis.

BUILDING RESTRICTION LINE (BRL): A line which identifies suitable building area locations on airports.

CEILING: Height above the earth's surface to the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast", or "obscuration" and is not classified as "thin" or "partial". (AIM)

CERTIFICATED ROUTE AIR CARRIER: An air carrier holding a Certificate of Public Convenience and Necessity issued by the Department of Transportation authorizing the performance of scheduled service over specified routes, and a limited amount of nonscheduled service. (FAA Census)

CIRCLING APPROACH/CIRCLE-TO-LAND MANEUVER: A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or is not desirable. (AIM)

COMMERCIAL OPERATOR: A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier. (FAR 1)

COMPASS LOCATOR: A low power, low or medium frequency (L/MF) radio beacon installed at the site of the outer or middle marker of an instrument landing system (ILS). (AIM)

COMPASS ROSE: A circle, graduated in degrees, printed on some charts or marked on the ground at an airport. It is used as a reference to either true or magnetic direction. (AIM)

COMMUNITY NOISE EQUIVALENT LEVEL (CNEL): The noise rating adopted by the State of California for measurement of airport noise. It represents the average daytime noise level during a 24-hour day,



measured in decibels and adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods.

COMMUTER AIR CARRIER: An air taxi operator which performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week and places between which such flights are performed. (FAA Census)

CONTROLLED AIRSPACE: A generic term that covers the different classifications of airspace (Class A, Class B, Class C, Class D and Class E airspace) and defines dimensions within which air traffic control service is provided to IFR flights and to VFR flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- **Class A**—Generally, that airspace from 18,000 feet MSL up to and including 60,000 feet MSL (Flight Level 600), including the airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous states and Alaska. Unless otherwise authorized, all persons must operate their aircraft under IFR.
- **Class B**—Generally, that airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports in terms of airport operations or passenger enplanements. The configuration of each Class B airspace area is individually tailored and consists of a surface area and two or more layers (some Class B airspaces areas resemble upside-down wedding cakes), and is designed to contain all published instrument procedures once an aircraft enters the airspace. An ATC clearance is required for all aircraft to operate in the area, and all aircraft that are so cleared receive separation services within the airspace. The cloud clearance requirement for VFR operations is "clear of clouds".
- **Class C**—Generally, that airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower, are serviced by radar approach control, and that have a certain number of IFR operations or passenger enplanements. Although the configuration of each Class C airspace area is individually tailored, the airspace usually consists of a surface area with a 5 nm radius, and an outer area with a 10 nm radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while within the airspace. VFR aircraft are only separated from IFR aircraft within the airspace.
- **Class D**—Generally, that airspace from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower. The configuration of each Class D airspace area is individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures. Arrival extensions for instrument approach procedures may be Class D or Class E airspace. Unless otherwise authorized, each person must establish two-way radio communications with the ATC facility providing air traffic services prior to entering the airspace and thereafter maintain those communications while in the airspace. No separation services are provided to VFR aircraft.
- **Class E**—Generally, if the airspace is not Class A, Class B, Class C, or Class D, and it is controlled airspace, it is Class E airspace. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Also in this class are Federal airways, airspace beginning at either 700 or 1,200 feet AGL used to transition to/from the terminal or en route environment, en route domestic, and offshore airspace areas designated below 18,000 feet MSL. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL over the United States, including that airspace overlying the waters within 12 nautical miles of the coast of the 48 contiguous States and Alaska. Class E airspace does not include the airspace 18,000 feet MSL or above.



DEMAND AIR TAXI: Use of an aircraft operating under Federal Aviation Regulations, Part 135, passenger and cargo operations, including charter and excluding commuter air carrier. (FAA Census)

DISPLACED THRESHOLD: A threshold that is located at a point on the runway other than the designated beginning of the runway. (AIM)

DISTANCE MEASURING EQUIPMENT (DME): Equipment (airborne and ground) used to measure, in nautical miles, the slant range distance of an aircraft from the DME navigational aid. (AIM)

FAR PART 77: The part of the Federal Aviation Regulations that deals with objects affecting navigable airspace.

FAR PART 77 SURFACES: Imaginary surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary; (2) approach; (3) transitional; (4) horizontal; and (5) conical.

FEDERAL AVIATION ADMINISTRATION (FAA): The United States government agency that is responsible for insuring the safe and efficient use of the nation's airspace.

FIXED BASE OPERATOR (FBO): A business operating at an airport that provides aircraft services to the general public, including but not limited to sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tiedown or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

FLIGHT SERVICE STATION (FSS): FAA facilities which provide pilot briefings on weather, airports, altitudes, routes, and other flight planning information.

FRACTIONAL OWNERSHIP: A company or individual buys, or leases, a fractional interest in one aircraft just as they might acquire a partial interest in one condo unit. They can use their own aircraft or another similar or identical aircraft a certain number of hours or days per year. The economics of each situation differs depending on the number of people who will use the aircraft, the value of their time to the company, and the dollars saved in airline tickets, hotels, etc.

GENERAL AVIATION: That portion of civil aviation which encompasses all facets of aviation except air carriers. (FAA Stats)

GENERIC VISUAL GLIDE SLOPE INDICATOR (GVGI): A generic term for the group of airport visual landing aids which includes Visual Approach Slope Indicators (VASI), Precision Approach Path Indicators (PAPI), and Pulsed Light Approach Slope Indicators (PLASI). When FAA funding pays for this equipment, whichever type receives the lowest bid price will be installed unless the airport owner wishes to pay the difference for a more expensive unit.

GLIDE SLOPE: An electronic signal radiated by a component of an ILS to provide descent path guidance to approaching aircraft.

GLOBAL POSITIONING SYSTEM (GPS): A relatively new navigational system which utilizes a network of satellites to determine a positional fix almost anywhere on or above the earth. Developed and operated by the U.S. Department of Defense, GPS has been made available to the civilian sector for surface, marine, and aerial navigational use. For aviation purposes, the current form of GPS guidance



provides en route aerial navigation and selected types of nonprecision instrument approaches. Eventual application of GPS as the principal system of navigational guidance throughout the world is anticipated.

HELIPAD: A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters. (AIM)

INSTRUMENT APPROACH PROCEDURE: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority. (AIM)

INSTRUMENT FLIGHT RULES (IFR): Rules governing the procedures for conducting instrument flight. Also term used by pilots and controllers to indicate a type of flight plan. (AIM)

INSTRUMENT LANDING SYSTEM (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids: (1) Localizer; (2) Glide Slope; (3) Outer Marker; (4) Middle Marker; (5) Approach Lights. (AIM)

INSTRUMENT OPERATION: An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility. (FAA ATA)

INSTRUMENT RUNWAY: A runway equipped with electronic and visual navigation aids for which a precision or non-precision approach procedure having straight-in landing minimums has been approved. (AIM)

ITINERANT OPERATION: An arrival or departure performed by an aircraft from or to a point beyond the local airport area.

LARGE AIRCRAFT: An aircraft of more than 12,500 pounds maximum certificated takeoff weight. (FAR 1)

LIMITED REMOTE COMMUNICATIONS OUTLET (LRCO): An unmanned, remote air/ground communications facility which may be associated with a VOR. It is capable only of receiving communications and relies on a VOR or a remote transmitter for full capability.

LOCALIZER (LOC): The component of an ILS which provides course guidance to the runway. (AIM)

LOCAL OPERATION: An arrival or departure performed by an aircraft: (1) operating in the traffic pattern, (2) known to be departing or arriving from flight in local practice areas, or (3) executing practice instrument approaches at the airport. (FAA ATA)

LORAN: An electronic ground-based navigational system established primarily for marine use but used extensively for VFR and limited IFR air navigation.

MARKER BEACON (MB): The component of an ILS which informs pilots, both aurally and visually, that they are at a significant point on the approach course.

MEAN SEA LEVEL (MSL): An elevation datum given in feet from mean sea level.



MEDIUM-INTENSITY APPROACH LIGHTING SYSTEM (MALS): The MALS is a configuration of steady-burning lights arranged symmetrically about and along the extended runway centerline. MALS may also be installed with sequenced flashers; in this case, the system is referred to as MALSF.

MILITARY OPERATIONS AREA (MOA): A type of special use airspace of defined vertical and lateral dimensions established outside of Class A airspace to separate/segregate certain military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. (AIM)

MINIMUM DESCENT ALTITUDE (MDA): The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided. (FAR 1)

MISSED APPROACH: A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. (AIM)

NAVIGATIONAL AID/NAVAID: Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight. (AIM)

NONDIRECTIONAL BEACON (NDB): A 4 MF or UHF radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his bearing to or from the radio beacon and "home" on or track to or from the station. (AIM)

NONPRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which no electronic glide slope is provided. (FAR 1)

NONPRECISION INSTRUMENT RUNWAY: A runway with an instrument approach procedure utilizing air navigation facilities, with only horizontal guidance, or area-type navigation equipment for which a straight-in nonprecision instrument approach procedure has been approved or planned, and no precision approach facility or procedure is planned. (Airport Design)

OBJECT FREE AREA (OFA): A surface surrounding runways, taxiways, and taxilanes which should be clear of parked airplanes and objects except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. (Airport Design)

OBSTACLE: An existing object, object of natural growth, or terrain at a fixed geographical location, or which may be expected at a fixed location within a prescribed area, with reference to which vertical clearance is or must be provided during flight operation. (AIM)

OBSTACLE FREE ZONE (OFZ): A defined volume of airspace above and adjacent to a runway and its approach lighting system if one exists, free of all fixed objects except FAA-approved frangible aeronautical equipment and clear of vehicles and aircraft in the proximity of an airplane conducting an approach, missed approach, landing, takeoff, or departure.

OBSTRUCTION: An object/obstacle, including a mobile object, exceeding the obstruction standards specified in FAR Part 77, Subpart C. (AIM)

OUTER MARKER: A marker beacon at or near the glide slope intercept position of an ILS approach. (AIM)



PRECISION APPROACH PATH INDICATOR (PAPI): An airport visual landing aid similar to a VASI, but which has light units installed in a single row rather than two rows.

PRECISION APPROACH PROCEDURE: A standard instrument approach procedure in which an electronic glide slope is provided, such as an ILS or PAR. (FAR 1)

PRECISION INSTRUMENT RUNWAY: A runway with an instrument approach procedure utilizing an instrument landing system (ILS), microwave landing system (MLS), or precision approach radar (PAR). (Airport Design)

RELOCATED THRESHOLD: The portion of pavement behind a relocated threshold that is not available for takeoff and landing. It may be available for taxiing and aircraft. (Airport Design)

REMOTE COMMUNICATIONS AIR/GROUND FACILITY (RCAG): An unmanned VHF/UHF transmitter/receiver facility which is used to expand ARTCC air/ground communications coverage and to facilitate direct contact between pilots and controllers. (AIM)

REMOTE COMMUNICATIONS OUTLET (RCO) AND REMOTE TRANSMITTER/ RECEIVER (RTR): An unmanned communications facility remotely controlled by air traffic personnel. RCO's serve FSS's. RTR's serve terminal ATC facilities. (AIM)

RESTRICTED AREA: Designated airspace within which the flight of aircraft, while not wholly prohibited, is subject to restriction. (FAR 1)

RUNWAY CLEAR ZONE: A term previously used to describe the runway protection zone.

RUNWAY EDGE LIGHTS: Lights used to define the lateral limits of a runway. Specific types include:

- **HIRL**—High-Intensity Runway Lights
- **MIRL**—Medium-Intensity Runway Lights

RUNWAY END IDENTIFIER LIGHTS (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide a pilot with a rapid and positive visual identification of the approach end of a particular runway. (AIM)

RUNWAY PROTECTION ZONE (RPZ): A trapezoidal shaped area at the end of a runway, the function of which is to enhance the protection of people and property on the ground through airport owner control of the land. The RPZ usually begins at the end of each primary surface and is centered upon the extended runway centerline. (Airport Design)

RUNWAY SAFETY AREA (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. (Airport Design)

SMALL AIRCRAFT: An aircraft of 12,500 pounds or less maximum certificated takeoff weight. (FAR 1)

SPECIAL USE AIRSPACE: Airspace of defined horizontal and vertical dimensions identified by an area on the surface of the earth wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. (AIM)



STANDARD INSTRUMENT DEPARTURE (SID): A preplanned instrument flight rules (IFR) air traffic control departure procedure printed for pilot use in graphic and/or textual form. SID's provide transition from the terminal to the appropriate en route structure. (AIM)

STANDARD TERMINAL ARRIVAL ROUTE (STAR): A preplanned instrument flight rule (IFR) air traffic control arrival route published for pilot use in graphic and/or textual form. STARs provide transition from the en route structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area. (AIM)

STOPWAY: An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff, without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff. (FAR 1)

STRAIGHT-IN INSTRUMENT APPROACH — IFR: An instrument approach wherein final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minimums. (AIM)

TAXILANE: The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc. (Airport Design)

TAXIWAY: A defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft. (Airport Design)

TERMINAL INSTRUMENT PROCEDURES (TERPS): Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are four types of terminal instrument procedures: precision approach, nonprecision approach, circling, and departure.

TERMINAL RADAR SERVICE AREA (TRSA): Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. (AIM)

THRESHOLD: The beginning of that portion of the runway usable for landing. (AIM)

TOUCH-AND-GO: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and-go is defined as two operations. (AIM)

TRAFFIC PATTERN: The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach. (AIM)

TRANSIENT AIRCRAFT: Aircraft not based at the airport.

TRANSMISSOMETER: An apparatus used to determine visibility by measuring the transmission of light through the atmosphere. (AIM)

UNCONTROLLED AIRSPACE: Now known as Class G airspace. Class G airspace is that portion of the airspace that has not been designated as Class A, Class B, Class C, Class D, and Class E airspace.



UNICOM (Aeronautical Advisory Station): A nongovernment air/ground radio communication facility which may provide airport information at certain airports. (AIM)

VERY-HIGH-FREQUENCY OMNIDIRECTIONAL RANGE (VOR): The standard navigational aid used throughout the airway system to provide bearing information to aircraft. When combined with Distance Measuring Equipment (DME) or Tactical Air Navigation (TACAN) the facility, called VOR-DME or VORTAC, provides distance as well as bearing information.

VISUAL APPROACH SLOPE INDICATOR (VASI): An airport landing aid which provides a pilot with visual descent (approach slope) guidance while on approach to landing. Also see PAPI.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. The term "VFR" is also used by pilots and controllers to indicate type of flight plan. (AIM)

VISUAL GLIDE SLOPE INDICATOR (VGS): A generic term for the group of airport visual landing aids which includes Visual Approach Slope Indicators (VASI), Precision Approach Path Indicators (PAPI), and Pulsed Light Approach Slope Indicators (PLASI). When FAA funding pays for this equipment, whichever type receives the lowest bid price will be installed unless the airport owner wishes to pay the difference for a more expensive unit.

VISUAL RUNWAY: A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan. (Airport Design)

WARNING AREA: A type of special use airspace which may contain hazards to nonparticipating aircraft in international airspace. (AIM)



Frequently Used Terms and Acronyms

AAAE:	American Association of Airport Executives
AAE:	Accredited Airport Executive
AALS:	Advanced Approach and Landing System
AAMS:	Association of Air Medical Services
AC:	Advisory Circular (FAA publications) – Informational policy and guidance material.
ADO:	Airports District Office (FAA)
AFFF:	Aqueous Film Forming Foam
AFSS:	Automated Flight Service Station (FAA)
ALUC:	Airport Land Use Commission (California)
AGL:	Elevation Above Ground Level
AHS:	American Helicopter Society
AIM:	Aeronautical Information Manual – Instructions and procedures for operation aircraft in the U.S. National Airspace System
AIP:	Airport Improvement Program – Federal program administering financial grants-in-aid for airport development projects.
ALP:	Airport Layout Plan – Drawings illustrating existing and proposed property, facilities and structures.
ALUC:	Airport Land Use Commission (California)
AMS:	Air medical service
AOPA:	Aircraft Owners and Pilots Association
ARFF:	Airport Rescue and Fire Fighting
ARTCC:	Air Route Traffic Control Center
ASOS:	Automated Surface Observation System
ATC:	Air Traffic Control – Separation services involving aircraft utilizing a control tower.
ATIS:	Automated Terminal Information System – Provides continuous broadcast of an airport's current weather.
AVGAS:	Aviation gasoline
AWOS:	Automated Weather Observing System – Primary surface weather observing system in the U.S.
CAL/OSHA:	California Occupational Safety and Health Administration
CIP:	Capital Improvement Program
CUP:	Conditional Use Permit
DME:	Distance measuring equipment – Aircraft navigation equipment
DNL:	Day-Night Average Sound – Decibel measurement determining noise.
DOA:	Division of Aeronautics (part of the California Department of Transportation – Caltrans)
EHLF:	Emergency helicopter landing facility
EMS:	Emergency medical service
ENG:	Electronic news gathering
FAA:	Federal Aviation Administration
FAR:	Federal Aviation Regulation
FARA:	Final approach reference area



FATO:	Final approach and takeoff area
FBO:	Fixed Base Operator
FONSI:	Finding of No Significant Impact – Determination by the FAA that a proposed action has no significant impact on the environment.
FSDO:	Flight Standards District Office (FAA)
GAL:	General Aviation – Civil aviation except air carrier or air taxi.
GPS:	Global Positioning System
HAI:	Helicopter Association International
HRP:	Heliport reference point
ICAO:	International Council of Aviation Officials
IFR:	Instrument flight rules
ILS:	Instrument landing system
IMC:	Instrument Meteorological Conditions
MALSR:	Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MGTOW:	Maximum gross takeoff weight
MHz:	Megahertz
MSL:	Elevation above Mean Sea Level
MUP:	Major use permit
NAVAID:	Navigational Aid
NFPA:	National Fire Protection Association
NOTAM:	Notice to Airmen – Notice containing airport/airspace information.
NOTAR:	“No tailrotor” technology
NTSB:	National Transportation Safety Board
OE:	Obstruction evaluation
OSHPD:	Office of Statewide Healthcare Planning and Development (California)
PART 139:	Federal regulations for airports serving air carrier aircraft.
PCL:	Pilot-controlled lighting
PVT:	Private Use
PUC:	Public Utilities Code
SWPPP:	Storm Water Pollution Prevention Plan
TLA:	Three-letter acronym
TLOF:	Touchdown and liftoff area
TSA:	Transportation Security Administration
UHF:	Ultra high frequency
VASI:	Visual approach slope indicator
VHF:	Very high frequency
VFR:	Visual flight rules
VMC:	Visual Meteorological Conditions
VOR:	Very high frequency omnirange
Z/ZULU:	Greenwich Mean Time



Sources

FAR 1: Federal Aviation Regulations Part 1, Definitions and Abbreviations. (1993)

AIM: Airman's Information Manual, Pilot/Controller Glossary. (1993)

Airport Design: Federal Aviation Administration. *Airport Design*. Advisory Circular 150/5300-13, Change 11. (2007)

FAA ATA: Federal Aviation Administration. *Air Traffic Activity*. (1986)

FAA Census: Federal Aviation Administration. *Census of U.S. Civil Aircraft*. (1986)

FAA Stats: Federal Aviation Administration. *Statistical Handbook of Aviation*. (1984)

NTSB: National Transportation Safety Board. *U.S. NTSB 830-3*. (1989)



Appendix **B**

Supplemental Financial Analysis

**Eugene Airport Master Plan Update
Supplemental Financial Analysis
FY 2011 - 2015**

Background and Purpose

Chapter 5, *Financial Feasibility Analysis* of the 2008 Eugene Airport Master Plan Update presents a financial feasibility analysis that demonstrates the Airport's capacity to undertake the proposed capital improvement plan generated as the result of the findings of this planning effort. This plan anticipates an investment of approximately \$119.4 million during the 20-year planning period to complete identified aviation safety, preservation, security, and capacity enhancement projects.

Subsequent to finalizing this Master Plan Update significant shifts in national, state and local economic conditions occurred which negatively affected aviation activity at Eugene Airport (EUG). These events, coupled with the fact that sustainable Airport Improvement Program (AIP) reauthorization legislation has not been enacted at the federal level, have altered the focus and scope of the proposed capital improvement plan presented in Chapter 5. Despite these events, EUG has completed several projects identified in this plan and is coordinating a revised five year capital improvement plan with the FAA. Moreover, the Airport is seeking grant-in-aid funds from the State of Oregon to construct its proposed rental car service facility in lieu of incurring debt to complete this project.

Given that local governing bodies are scheduled to hold public work sessions on the Airport Master Plan during the first quarter of 2010, Airport management requested that a supplemental analysis of the Airport's financial plan be undertaken to ensure that the revised five (5) year capital improvement program is sustainable and viable both from a capital and operational perspective. Accordingly, this supplemental analysis evaluates the Airport's capacity to:

- Complete its revised FY 2011-2015 capital improvement plan
- Generate sufficient revenues to fund all anticipated operating expenses
- Make required annual contributions to its established reserve funds

The techniques utilized in Chapter 5 of this Master Plan Update are reflected in this supplemental analysis to ensure its findings are consistent and valid.



Overview of the Airport's Operating Financial Results FY 2008 - Present

The single-most negative impact for EUG created by changing national, state and local economic conditions was a 14.6 percent decline in passenger activity in FY 2009. Reduced passenger levels influenced the loss of approximately \$900,000 in overall revenues (11.9%) between FY 2008 and FY 2009. Lower automobile parking fees, airline landing fee collections, airline terminal building fees and food/beverage concession fees were primarily responsible for this reduced level of funding. While operating revenues lagged, the Airport experienced an increase in operating expenditures of approximately \$400,000 or 7.2 percent during this period. Salaries and labor increased because of obligations contained in the Airport's current labor agreement as well as the hiring of 3.5 full-time equivalent positions in the Airport's Maintenance Division needed to address the evolving workload associated with the mission of this Department. Additionally, the Airport's payment to the City of Eugene for central services increased 38 percent or \$139,000.

Despite declining revenues and increased expenditures, EUG met all required expenditure obligations and was capable of making payments to its required reserve funds including a \$124,500 contribution to its Operating and Capital Reserve Fund. Of equal importance is the fact that the Airport achieved positive financial results during this difficult period void of increasing airline rates and charges. As noted earlier, all sources of airline revenue were generally down over FY 2008 due in most part to management's proactive decision to hold airline rates and fees constant in recognition of the need to maintain EUG's favorable operating environment for its carriers.

Thus far in FY 2010, both passenger activity and revenue performance appear to have stabilized as reflected by the fact that fourth quarter of calendar year 2009 was especially strong for EUG. Mid-year forecasts of revenues and expenditures reveal that EUG should meet budgeted amounts for revenues and expenditures while enplanements should total approximately 349,000 representing a 5.4 percent increase over FY 2009. Although these trends are quite positive, it is important to recognize that should this growth be sustained during the remaining six months of this fiscal year, EUG's passenger totals will essentially mirror results for FY 2006 when 360,258 boardings were experienced while total Airport revenues will achieve levels consistent with FY 2007 levels.

The Revised FY 2011-15 Capital Improvement Plan

The FY 2011-15 Capital Improvement Plan (CIP) described in Chapter 5 projects the need for \$35.9 million in federal and local funds to complete a host of projects. It includes a phased expansion of the terminal building to accommodate three (3) additional airline gates as well as expansion of the airline ramp area for aircraft parking. The cumulative cost of these projects represents approximately \$25.0 million of this \$35.9 million plan. Due to the decrease in passenger activity in FY 2009 and an expected slow recovery period, these capacity-related projects have been removed from the revised five year planning horizon. Furthermore, the issuance of Passenger Facility Charge (PFC) backed bonds for these projects has also been delayed due to this change. In fact, no additional borrowing is anticipated through FY 2016; indicating that EUG will remain debt-free during this period.



The revised capital improvement plan presented in **Table B-1** of this supplemental analysis suggests that the Eugene Airport will focus its capital funding on projects which primarily preserve existing airfield/landside infrastructure. Of the twelve (12) projects programmed to be undertaken, five (5) are designed to preserve existing airfield pavement while other projects are aimed at modernizing the Airport's fleet of snow removal equipment, constructing an aircraft deicing containment area and aircraft wash station, and addressing storm water drainage needs. Two projects are designed to enhance the Airport's taxiway system through the widening of Taxiway K and reconstruction of Taxiway E to the North Ramp. In FY2014, the Airport is slated to complete its only terminal building capacity-related project when it expands the airline baggage claim area.

In order to complete projects during this five year period, an investment of \$20.9 million is programmed from the following sources:

Funding Source	Amount	Percent
FAA Entitlement	\$13.7 Million	66%
FAA Discretionary	\$4.7 Million	22%
Passenger Facility Charge	\$2.5 Million	12%

Although reduced by \$15.0 million from the program envisioned in Chapter 5, EUG's revised FY2011-2015 capital improvement plan represents a responsible and manageable program which will yield positive results for Airport users. Since the Airport's current PFC program expires on November 30, 2011 and does not include projects listed in the FY2011-2015 plan, an amendment to the Airport's existing PFC program or preparation of an application for new PFC impose and use authority in the amount of \$2.5 million is required. Moreover, because projects listed in this revised plan are not currently included in a PFC plan, the Airport will need to temporarily utilize \$390,000 in its Capital & Operating Reserve as local matching funds for the South Ramp Rehabilitation and Runway 34L/16R Overlay projects in FY2011. Upon approval and collection of sufficient PFC revenues, this amount can be reimbursed to this reserve fund. Since the Runway 16R/34L Overlay Project is considered a high priority project for FAA funding, it is very likely that the required \$4.7 million in FAA discretionary funding will be allocated for this project.

Table B-2 provides a forecast of FAA entitlement funds and PFC revenues to be collected during this five year period. As noted, \$2,751,263 in annual FAA Entitlements is programmed for this five year period. This level of funding is consistent with direction provided by the FAA Seattle District Office and assumes that annual enplanement levels reach 379,100 each fiscal year. Because FAA entitlement funds presented in this revised plan are not based on forecast passenger activity as in Chapter 5, any shortfall in federal grant-in-aid created from not achieving this level of passenger activity will require FAA Discretionary funds and/or supplemental PFC revenues to complete the planned improvements. Should additional PFC funds be required, additional impose authority will need to be approved for EUG.





Table B-1
Eugene Airport
Master Plan Update
CAPITAL IMPROVEMENT PLAN

Year	Project	Total Cost	Project Funding Sources					
			FAA Entitlement	Ent. Carryover	Discretionary	PFC	Local/1	Other
2011	South Ramp Rehabilitation - South Section	\$300,000	\$285,000	\$0	\$0		\$15,000	\$0
	Runway 34L/16R Overlay - Lights & Connecting Taxiway	\$7,500,000	\$2,466,263	\$0	\$4,658,737		\$375,000	\$0
	Year 2011 Total Project Costs	\$7,800,000	\$2,751,263		\$4,658,737		\$390,000	\$0
	PROJECTED AVAILABLE FUNDING		\$2,751,263	\$0				\$0
2012	Taxiway A Rehabilitation (A7-A4)	\$1,600,000	\$1,520,000		\$0	\$80,000	\$0	\$0
	SRE Oshkosh 5160-01(Broom)	\$200,000	\$190,000		\$0	\$10,000	\$0	\$0
	Mitigate & Fill Ponds (Runway 34L)	\$400,000	\$380,000		\$0	\$20,000	\$0	\$0
	Deicing Containment/Aircraft Wash Station (Phase I)	\$695,000	\$660,250		\$0	\$34,750	\$0	\$0
	Year 2012 Total Project Costs	\$2,895,000	\$2,750,250		\$0	\$144,750	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,751,263	\$1,013		\$840,278		
2013	Deicing Containment/Aircraft Wash Station (Phase II)	\$1,405,000	\$1,334,750		\$0	\$70,250	\$0	\$0
	Mitigation/Drainage - Runway 34R	\$1,000,000	\$950,000		\$0	\$50,000	\$0	\$0
	SRE Oshkosh 5160-01	\$450,000	\$427,500		\$0	\$22,500	\$0	\$0
	Year 2013 Total Project Costs	\$2,855,000	\$2,712,250		\$0	\$142,750	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,752,276	\$41,039		\$1,472,168		
2014	Baggage Claim Expansion (Phase I)	\$4,200,000	\$2,565,000		\$0	\$1,635,000	\$0	\$0
	SRE Delcar Truck Replacement	\$220,000	\$209,000		\$0	\$11,000	\$0	\$0
	Year 2014 Total Project Costs	\$4,420,000	\$2,774,000		\$0	\$1,646,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,792,302	\$59,341		\$156,054		
2015	Pavement Rehab Projects - Taxiways	\$500,000	\$475,000		\$0	\$25,000	\$0	\$0
	Taxiway Kilo Widening	\$2,000,000	\$1,900,000		\$0	\$100,000	\$0	\$0
	Taxilane EGAR to North Ramp	\$400,000	\$380,000		\$0	\$20,000	\$0	\$0
	Year 2015 Total Project Costs	\$2,900,000	\$2,755,000		\$0	\$145,000	\$0	\$0
	PROJECTED AVAILABLE FUNDING		\$2,810,604	\$114,945		\$0		
TOTAL PROJECT COSTS FY 2011 - FY 2015		\$20,870,000	\$13,742,763		\$4,658,737	\$2,468,500	\$390,000	\$0

Source: City of Eugene, Department of Public Works

Note: /1 Current PFC Authority expires November 30, 2011. Assume new PFC application to be filed for projects in 5 year CIP. Amount to be reimbursed in FY12-13 by PFC revenues.

Table B-2

Eugene Airport
Master Plan Update**PROJECTED AIRPORT ENTITLEMENT FUNDS
AND PASSENGER FACILITY CHARGE REVENUE**

Fiscal Year	Projected Enplanements 1/	Projected Enplanements (2 yrs. Prior)	Entitlement Funds 2/	Passenger Facility Charges 3/	Total Funds
2011	356,737	331,875	\$2,751,263	\$0	\$2,751,263
2012	364,585	349,058	\$2,751,263	\$840,278	\$3,591,541
2013	372,606	356,737	\$2,751,263	\$1,472,168	\$4,223,431
2014	380,804	364,585	\$2,751,263	\$156,054	\$2,907,317
2015	389,181	372,606	\$2,751,263	\$0	\$2,751,263
TOTAL PROJECTED REVENUE			\$13,756,315	\$2,468,500	\$16,224,815

Source: Mead & Hunt, Inc.

Note: 1/ Includes charters.

2/ Entitlement Funds are per FAA direction & not reflective of forecast enplaned passengers.

3/ Assumes a net collection of \$4.39 per eligible enplaned passenger.

Assumes 90 percent of the Airport's enplanements are eligible for PFC collection.



Table B-3, entitled, Capital Improvement Plan Funding Analysis, depicts the capacity of the Airport's PFC program to absorb any shortfall in FAA entitlement funds should enplanements not achieve the level sufficient to generate \$2.75 million per year. As presented, the Airport's authority to impose a PFC is scheduled to continue beyond November 2011. If this is achieved, sufficient funding for the local match required for this plan is achieved by the first quarter of fiscal year 2014. Accordingly, should FAA entitlement funds lag due to enplanements not meeting expectations, or should FAA Discretionary funding not be made available, the Airport is capable of extending PFC authority in order to address any shortfall. Table B-3 further depicts the transfer of local funds in FY2011 to match anticipated FAA grants and how this temporary transfer is capable of being refunded by PFC receipts in the subsequent year.

Table B-3

**Eugene Airport
Master Plan Update**

CAPITAL IMPROVEMENT PLAN FUNDING ANALYSIS

Year	Capital Improvement Costs	Required FAA Entitlements	Cumulative Entitlement Funding Surplus (Shortfall)	Anticipated FAA Discretionary 1/	Passenger Facility Charges 2/	Required PFC Funds	Annual PFC Balance	Required Local Funds 2/
2011	\$7,800,000	\$2,751,263	\$0	\$4,658,737	\$0	\$390,000	-\$390,000	\$390,000
2012	\$2,895,000	\$2,750,250	\$1,013	\$0	\$840,278	\$144,750	\$305,528	\$0
2013	\$2,855,000	\$2,712,250	\$41,039	\$0	\$1,472,168	\$142,750	\$1,634,946	\$0
2014	\$4,420,000	\$2,774,000	\$59,341	\$0	\$156,054	\$1,646,000	\$145,000	\$0
2015	\$2,900,000	\$2,755,000	\$114,945	\$0	\$0	\$145,000	\$0	\$0
CIP TOTAL	\$20,870,000	\$13,742,763		\$4,658,737	\$2,468,500	\$2,468,500	\$0	\$0

Sources: City of Eugene, Department of Public Works
Mead & Hunt, Inc.

Notes: 1/ It is anticipated that no surplus/shortfall will be experienced in these revenue sources over the planning period.

2/ A detailed cash-flow analysis that examines the Airport's ability to fund the required local share of project costs from the Operating and Capital and Depreciation Reserve Funds that the Airport maintains will be presented later in this analysis.

Historical and Projected Airport Revenues

Tables 5-4 and 5-5 of the Master Plan Update present historical and anticipated revenues for EUG. Historical revenue trends were calculated for the period FY 2003-2009 (Budget) while the forecast period considered fiscal years 2010-2016. As noted in these tables, total Airport revenue for FY 2008 and FY 2009 was expected to total \$7,146,353 and \$7,134,010 respectively. Audited actual results, presented in **Table B-4**, totaled \$7,613,965 for FY 2008 and \$6,718,224 in FY 2009. While actual results for FY 2008 exceeded expectations, this gain was more than offset by a precipitous 11.4 percent drop in revenues experienced in FY 2009. Despite these variations, annual percentage growth rates for airport revenues



Table B-4

Eugene Airport
Master Plan Update

HISTORICAL AND BUDGETED AIRPORT REVENUES

	2006	2007	2008	2009	Budget 2010	CAGR FY06-FY10	CAGR FY03-FY09
AIRLINE REVENUES							
LANDING AREA							
Airline Landing Fees - Scheduled	\$1,138,042	\$970,393	\$1,014,834	\$948,866	\$952,691	-4%	2%
COMMON USE AREAS							
Airline Common Use Fee	605,576	671,876	714,754	733,330	671,085	3%	5%
Airline Security Charges	133,134	114,774	123,430	163,105	147,141	3%	7%
TERMINAL AREA							
Airline Leased & Joint Use Areas	926,170	678,011	722,086	675,385	676,580	-8%	-3%
PREVIOUS YEAR AIRLINE ADJUSTMENTS	(67,982)	(258,977)	(30,481)	(263,964)	-		
Total Airline Revenue	\$2,734,940	\$2,176,077	\$2,544,623	\$2,256,722	\$2,447,497	-3%	2%
NON-AIRLINE REVENUES							
AIRFIELD AREA							
Hangar Rentals	\$152,146	\$230,439	\$201,811	\$133,693	\$178,745	4%	0%
Fuel Flow Fees	51,653	49,534	51,627	35,802	50,200	-1%	3%
Tie-Down Fees	10,281	10,220	10,084	9,124	8,558	-4%	-1%
Fixed Based Operators	63,594	61,444	63,994	51,241	33,937	-15%	0%
Ground Fuel	8,393	2,206	2,208	1,179	2,010	-30%	7%
Non-Airline Landing Fees	102,423	81,298	85,357	103,761	89,000	-3%	-3%
TERMINAL AREA							
Rental Auto Concessions	\$803,351	\$813,260	\$871,892	\$908,507	\$1,031,295	6%	5%
Food and Beverage Services	62,082	56,176	120,085	70,681	118,000	17%	5%
Miscellaneous Terminal Facilities	226,375	229,060	271,875	217,001	227,180	0%	4%
Security-LEO Reimbursement/Fingerprints	278,178	318,524	236,319	255,888	224,108	-5%	
PARKING AREA							
Public Parking Facility	\$2,308,328	\$2,378,751	\$2,770,148	\$2,379,661	\$2,358,500	1%	8%
ADMINISTRATION							
Administrative Revenue (Interest)		\$269,233					
OTHER AREAS							
Other Building Rentals	\$228,917	\$236,530	\$223,765	\$228,694	\$222,123	-1%	8%
Other Land Rentals	83,807	78,128	80,629	14,571	81,715	-1%	-1%
Miscellaneous Revenue	(64,759)	155,474	79,548	51,699	35,439		31%
Total Non-Airline Revenue	\$4,314,769	\$4,970,277	\$5,069,342	\$4,461,502	\$4,660,810	2%	5%
TOTAL AIRPORT REVENUE	\$7,049,709	\$7,146,354	\$7,613,965	\$6,718,224	\$7,108,307	0%	2%
	356,830	363,785	387,433	331,875	349,058		
AIRLINE COST PER ENPLANEMENT	\$7.66	\$5.98	\$6.57	\$6.80	\$7.01		

Source: City of Eugene, Department of Public Works
CAGR = Compound Annual Growth Rate



for the periods examined continued on the order of 2 percent. Overall Airport revenue grew from \$6.6 million in FY 2003 to \$7.0 million in FY 2006. Between FY 2006 and 2010 (Budget), Airport revenues were essentially flat after spiking in FY 2008 to \$7.6 million only to decrease to FY 2006 levels in the following year. The following presents the annual compounded annual growth rates in overall Airport revenues for the period FY 2003-09, FY 2006-10 (Budget) and FY 2008-10 (Budget):

	FY 2003-09	FY 2006-10	FY 2008-10
Total Airport Revenues	2%	0%	-3%

For the period FY 2006-2010 (Budget), aircraft hangar rentals and rental car auto concessions experienced solid annual growth rates of 4 and 6 percent respectively while Fixed Base Operators, building land rentals and automobile parking concession revenues were unchanged. Historical trends for airline revenue continue to reflect EUG's efforts at reducing its reliance on these sources of revenue for its operation. In FY 2003, airline revenue totaled \$3.1 million and represented 47.5 percent of all Airport revenues. FY 2009 revenues collected from airlines totaled \$2.3 million; however, represented only 34 percent of overall Airport operating revenues.

As shown in Table 5-5, total revenues for EUG were projected to increase from \$7,296,261 in FY 2009 to \$9,636,043 in FY 2016; representing a compounded annual growth rate of 4.0 percent.

Revenue trends experienced during the period FY 2006-2010 (Budget) as well as FY 2008-2010 (Budget) complicate forecasting of future revenue; however, based upon the positive trends experienced in FY 2010, it is reasonable to expect that EUG will meet its FY 2010 budget estimates and attain an annual compounded growth rate of 3.0 percent during the next five years. Such a rate of growth will require on the order of approximately \$180,000 per year of additional revenue to reach the forecasted level of \$8.0 million in FY 2015 as detailed in **Table B-5**. Attainment of this revenue forecast will require that airline rates and charges be adjusted 2 percent per year. Such changes in airline rates should be acceptable provided annual enplanements grow at a rate of 2.2 percent per year; the level of passenger growth required to maintain airline cost per enplaned passenger levels at the current competitive level of approximately \$7.00.





Table B-5
Eugene Airport
Master Plan Update
PROJECTED AIRPORT REVENUES

	Budget		Projected				CAGR FY06-FY10	CAGR FY03-FY09	Rate Used
	2009	2010	2011	2012	2013	2014			
AIRLINE REVENUES									
LANDING AREA									
Airline Landing Fees - Scheduled	\$948,866	\$952,691	\$971,745	\$991,180	\$1,011,003	\$1,031,223	\$1,051,848	-4%	2%
COMMON USE AREAS									
Airline Common Use Fee	733,330	671,085	691,218	711,954	733,313	755,312	777,971	3%	5%
Airline Security Charges	163,105	147,141	151,555	156,102	160,785	165,608	170,577	3%	7%
TERMINAL AREA									
Airline Leased Areas	675,385	676,580	690,112	703,914	717,992	732,352	746,999	-8%	-3%
PREVIOUS YEAR AIRLINE ADJUSTMENTS	(263,964)	-	-	-	-	-	-	-	-
Total Airline Revenue	\$2,256,722	\$2,447,497	\$2,504,629	\$2,563,150	\$2,623,093	\$2,684,496	\$2,747,395	-3%	2%
NON-AIRLINE REVENUES									
AIRFIELD AREA									
Hangar Rentals	\$133,693	\$178,745	\$180,532	\$182,338	\$184,161	\$186,003	\$187,863	4%	3%
Fuel Flow Fees	35,802	50,200	50,702	51,209	51,721	52,238	52,761	-1%	3%
Tie-Down Fees	9,124	8,558	8,644	8,730	8,817	8,905	8,995	-4%	-1%
Fixed Based Operators	51,241	33,937	34,276	34,619	34,965	35,315	35,668	-18%	0%
Ground Fuel	1,179	2,010	2,070	2,132	2,196	2,262	2,330	-30%	7%
Non-Airline Landing Fees	103,761	89,000	90,780	92,596	94,448	96,336	98,263	-3%	-3%
TERMINAL AREA									
Rental Auto Concessions	\$908,507	\$1,031,295	\$1,062,234	\$1,094,101	\$1,126,924	\$1,160,732	\$1,195,554	6%	5%
Food and Beverage Services	70,681	118,000	121,540	125,186	128,942	132,810	136,794	17%	5%
Miscellaneous Terminal Facilities	217,001	227,180	233,995	241,015	248,246	255,693	263,364	0%	4%
Security-LEO Reimbursement/Fingerprints	255,888	224,108	224,108	224,108	224,108	224,108	224,108	-5%	-
PARKING AREA									
Public Parking Facility	\$2,379,661	\$2,358,500	\$2,429,255	\$2,502,133	\$2,577,197	\$2,654,513	\$2,734,148	1%	8%
ADMINISTRATION									
Administrative Revenue (Interest)	-	-	-	-	-	-	-	-	-
OTHER AREAS									
Other Building Rentals	\$228,694	\$222,123	\$226,565	\$231,097	\$235,719	\$240,433	\$245,242	-1%	8%
Other Land Rentals	14,571	81,715	82,532	83,357	84,191	85,033	85,883	33%	-1%
Miscellaneous Revenue	51,699	35,439	35,793	36,151	36,513	36,878	37,247	31%	1%
Total Non-Airline Revenue	\$4,461,502	\$4,660,810	\$4,783,028	\$4,906,772	\$5,038,147	\$5,171,260	\$5,308,219	2%	5%
TOTAL AIRPORT REVENUE	\$6,718,224	\$7,108,307	\$7,287,657	\$7,471,922	\$7,661,240	\$7,855,755	\$8,055,614	0%	2%

Source: City of Eugene, Department of Public Works
CAGR = Compound Annual Growth Rate

Historical and Projected Airport Operating Expenses

Chapter 5 also analyzes historical and projected operating expenses for EUG in Tables 5-6 and 5-7. When this plan was originally published, it was expected that total operating expenses would equal \$6.3 million in FY 2008 and \$6.6 million in FY 2009. Actual results for these two (2) fiscal years were \$5.9 million and \$6.3 million respectively; both significantly below forecast. As previously noted, salaries and labor drove the majority of expenditure increases between FY 2008 and FY 2009 due to increases in salaries and the addition of 3 full-time equivalent positions for the Maintenance Division. The following presents the annual compounded annual growth rates in overall Airport expenses for the period FY 2003-09, FY 2006-10 (Budget) and FY 2008-10 (Budget):

	FY 2003-09	FY 2006-10	FY 2008-10
Total Airport Expenses	4%	6%	8%

Major expenditure variables between FY 2008 and FY 2010 generated the annual increase of 8 percent for this period:

- Salaries & labor increased \$368,000
- Benefits increased \$114,000
- Materials & Supplies increased \$100,000
- Contractual Services increased \$269,000
- Central Allocation Services increased \$150,000

EUG, like many local governing bodies, is experiencing significant and ongoing increases in employee benefit costs as contributions to health insurance plans and defined benefit plans continue to rise. Although these expenditure categories are growing significantly, personnel expenditures (salaries and labor and benefits) comprise 56 percent of the Airport's operating expenses which compares favorably to other local government jurisdictions that oftentimes expend 65-70 percent of budgeted funds on employee compensation and benefits.

Although actual operating results for FY 2008-09 were more favorable than expected in the forecast contained in Table 5-6, Airport expenses continued to grow at an annualized rate of 4 percent for the period FY 2003 – FY 2009. For the forecast period of FY 2011 – FY 2015, Table 5-7 projects that expenditures will grow at an annualized rate of 4 percent from \$7.2 million to \$8.8 million. **Table B-6 and B-7**, which unlike Chapter 5 does not anticipate additional positions to be added to Airport staff during this period, indicates that overall Airport expenditures will total \$7.7 million by the end of this period yielding a savings of \$1.1 million over the original forecast.





Table B-6
Eugene Airport
Master Plan Update

HISTORICAL AIRPORT OPERATING EXPENSES

	2006	2007	2008	2009	Budget 2010	CAGR FY06-FY10	CAGR FY08-FY10	CAGR FY03-FY09
OPERATING EXPENSES								
Salaries and Labor	\$1,872,203	\$1,979,789	\$2,078,905	\$2,329,455	\$2,446,847	7%	8%	3%
Employee Benefits	1,107,381	1,127,680	1,305,678	1,209,860	1,419,552	6%	4%	6%
Maintenance and Repairs	306,889	269,160	300,993	363,919	304,386	0%	1%	9%
Materials & Supplies	595,738	919,936	600,804	607,874	701,266	4%	8%	3%
Rent	237,899	224,772	258,867	228,242	223,600	-2%	-7%	4%
Utilities	372,140	377,433	362,954	370,716	408,850	2%	6%	4%
Contractual Services	581,464	503,845	505,493	481,147	774,967	7%	24%	9%
Insurance	201,301	151,233	84,675	73,354	112,097	-14%	15%	1%
Encumbrance Rollover/Capital/Vehicles			45,260	165,622	-			
Total Operating Expenses	\$5,275,015	\$5,553,848	\$5,543,629	\$5,830,189	\$6,391,565	5%	7%	3%
NON-OPERATING EXPENSES								
Central Services Allocation	\$265,000	\$297,000	\$364,000	\$503,000	\$514,000	18%	19%	6%
Total Non-Operating Expenses	\$265,000	\$297,000	\$364,000	\$503,000	\$514,000	18%	19%	6%
TOTAL AIRPORT EXPENSES	\$5,540,015	\$5,850,848	\$5,907,629	\$6,333,189	\$6,905,565	6%	8%	4%

Source: City of Eugene, Department of Public Works
CAGR=Compound Annual Growth Rate



Table B-7
Eugene Airport
Master Plan Update
PROJECTED AIRPORT EXPENSES

	Budget		Projected				CAGR	CAGR	Used	
	2009	2010	2011	2012	2013	2014	2015	FY06-FY10		FY03-FY09
OPERATING EXPENSES										
Salaries and Labor	\$2,329,455	\$2,446,847	\$2,497,766	\$2,572,699	\$2,649,880	\$2,729,376	\$2,811,258	7%	3%	3%
Employee Benefits	1,209,860	1,419,552	1,404,969	1,489,267	1,578,623	1,673,341	1,773,741	6%	6%	6%
Maintenance and Repairs	363,919	304,386	295,254	308,541	322,425	336,934	352,096	0%	9%	5%
Materials & Supplies	607,874	701,266	680,228	704,036	728,677	754,181	780,577	4%	3%	4%
Rent	228,242	223,600	216,892	223,399	230,101	237,004	244,114	-2%	4%	3%
Utilities	370,716	408,850	396,585	408,482	420,736	433,359	446,359	2%	4%	3%
Contractual Services	481,147	774,967	507,826	530,678	554,559	579,514	605,592	7%	9%	5%
Insurance	73,354	112,097	108,734	109,821	110,920	112,029	113,149	-14%	1%	1%
Capital/Vehicles	165,822	-	-	-	-	-	-	-	0%	0%
Total Operating Expenses	\$5,830,189	\$6,391,565	\$6,108,254	\$6,346,923	\$6,595,921	\$6,855,737	\$7,126,887	5%	3%	4%
NON-OPERATING EXPENSES										
Central Services Allocation	\$503,000	\$514,000	\$483,000	\$507,150	\$532,508	\$559,133	\$587,090		6%	5%
Total Non-Operating Expenses	\$503,000	\$514,000	\$483,000	\$507,150	\$532,508	\$559,133	\$587,090		6%	5%
TOTAL AIRPORT EXPENSES	\$6,333,189	\$6,905,565	\$6,591,254	\$6,854,073	\$7,128,429	\$7,414,870	\$7,713,976		4%	4%

Sources: Historic, budget, and proposed - City of Eugene, Department of Public Works.
Projected - Mead & Hunt, Inc., and Airport Management.
CAGR=Compound Annual Growth Rate

Cash Flow Analysis and Overall Feasibility

Table 5-9 of the Master Plan Update details anticipated cash flow from operating activities for the period FY 2009-FY 2016. This analysis forecasts that net operating revenue will increase from \$596,322 to \$2.024 million in FY 2016. It further details programmed debt service associated with the issuance of PFC-backed bonds in FY 2011 and FY 2014 for capacity-related projects associated with improvements to the terminal access road and phased expansions to the terminal building. Collectively, debt service of \$7.9 million was expected to be made during this period from both PFC as well as general Airport revenues. Finally, this plan displays the capacity of EUG to make deposits of \$800,723 to its Operating and Capital Reserve Fund during the period FY 2011-2015.

The revised plan described in this supplemental analysis (**Table B-8**) assumes no debt will be issued by EUG in the next five (5) years. Since debt financed projects are not scheduled to be undertaken, EUG will be capable of enhancing its reserve balances for its Operating & Maintenance Reserve Fund as well as Operating and Capital Reserve Fund. As presented, contributions to this fund are expected to range from approximately \$750,000 to \$290,000 during this period. Increasing the available balance in the Operating and Capital Reserve Fund could enable EUG to pursue cash-only projects in Years 6-10 of its Capital Improvement Plan and forgo issuance of debt for projects. In addition, continuation of accruing two (2) months of operating fund reserves in the O&M Reserve Fund enables EUG to be positioned for uncertain economic conditions.

Table B-8**Eugene Airport
Master Plan Update****PROJECTED AIRPORT CASH FLOW FROM OPERATING ACTIVITIES**

	Projected				
	2011	2012	2013	2014	2015
CASH FLOW - OPERATING ACTIVITIES					
Airport Revenue	\$7,287,657	\$7,471,922	\$7,661,240	\$7,855,755	\$8,055,614
Operating Expense	6,591,254	6,854,073	7,128,429	7,414,870	7,713,976
Net Revenue	\$696,403	\$617,849	\$532,812	\$440,885	\$341,638
Deposit to O&M Reserve Fund	52,385	(43,803)	(45,726)	(47,740)	(49,851)
Deposit to Operating and Capital Reserve Fund	\$748,788	\$574,045	\$487,086	\$393,145	\$291,787

Source: Mead & Hunt, Inc.



Table B-9, like Table 5-10, presents an analysis of the anticipated sources, uses and balance of funds to be used to implement EUG's revised recommended CIP through FY2015. Both reveal that EUG is capable of undertaking the projects detailed for this five year planning horizon while at the same time meet expenditure obligations and make deposits to required reserve funds. As previously described, EUG does have additional capacity in its PFC program to fund potential reductions in FAA funding. Moreover, the balance in the Airport's Operating and Capital Fund should increase from approximately \$6.5 million in FY 2011 to \$8.3 million in FY 2015.

Table B-9

Eugene Airport
Master Plan Update

PROJECTED AIRPORT CASH FLOW - CAPITAL IMPROVEMENT PLAN

	Projected				
	2011	2012	2013	2014	2015
CASH FLOW - CAPITAL IMPROVEMENT PROGRAM					
SOURCES OF FUNDS - CUMULATIVE BALANCE (Current contribution plus previous year-end balance)					
Federal AIP Entitlement Funds	\$2,751,263	\$2,751,263	\$2,751,263	\$2,751,263	\$2,751,263
Federal AIP Discretionary Funds	4,658,737	0	0	0	0
Passenger Facility Charge Revenues	-	840,278	1,472,168	156,054	-
Operating and Capital Reserves	6,532,638	7,106,683	7,593,769	7,986,914	8,278,701
Other Funds	0				
Total Sources of Funds	\$13,942,638	\$10,698,225	\$11,817,200	\$10,894,232	\$11,029,964
USES OF FUNDS					
Federal AIP Entitlement Funds	\$2,751,263	\$2,750,250	\$2,712,250	\$2,774,000	\$2,755,000
Federal AIP Entitlement Carryover Funds	-	-	-	22,737	3,737
Federal AIP Discretionary Funds	4,658,737	-	-	-	-
Passenger Facility Charges	-	534,750	142,750	1,646,000	145,000
Operating and Capital Reserves	390,000	-	-	-	-
Local Funds					
Total Uses of Funds	\$7,800,000	\$3,285,000	\$2,855,000	\$4,442,737	\$2,903,737
BALANCE OF GRANTS AND OTHER FUNDS AT YEAR END					
Federal AIP Entitlement Funds 1/	\$0	\$1,013	\$41,039	\$59,341	\$114,946
Passenger Facility Charges	-	305,528	1,634,946	145,000	0
Operating and Capital Reserves	6,142,638	\$7,106,683	7,593,769	7,986,914	8,278,701

Source: Mead & Hunt, Inc.

Note: 1/ Entitlements not used in year received can be carried over for three years.



Conclusion

Based upon the findings of this supplemental analysis, EUG is projected to produce sufficient revenues to meet all anticipated operating expenses between FY 2011-2015 while at the same time make required deposits to established reserve funds. The cash balance of the Airport should be further strengthened during this period through continued annual growth in operating revenues of 3 percent each year. Operating expenditures, while growing at an annualized rate of 4 percent, should remain at a level which will enable the Airport to produce net income necessary for funding the aforementioned reserve funds. Provided FAA airport entitlement funds are allocated as described herein and the Airport's PFC program is extended to collect \$2.5 million in revenues, EUG is expected to have adequate resources to complete the revised Capital Improvement Plan as presented. In summary, through the foregoing analysis, including the underlying assumptions through which it was generated, the revised CIP for EUG is expected to be both feasible and implementable.



EXHIBIT B

FINDINGS IN SUPPORT OF THE ADOPTION OF
AN UPDATE TO THE EUGENE AIRPORT MASTER PLAN
(RA 10-2 AND PA 10-5284)

Introduction

The original Mahlon Sweet Field Master Plan was initially prepared for the airport in 1979 and adopted by the City in 1980. A major update of the Eugene Airport Master Plan was then adopted in 1990, by Lane County and the City of Eugene, to replace the Mahlon Sweet Field Master Plan. The 1990 Airport Master Plan was developed to respond to problems with runway length and capacity, and to assure continued improvements to air service that would meet the needs of Eugene, Lane County and the surrounding areas served by the airport. The 1990 master plan developed the initial concept for re-configuring the airfield into a parallel runway design which has since been implemented.

Subsequently, the 1999 Airport Master Plan update was adopted in 2000, to replace the 1990 master plan. It assured that aviation needs within the Airport's service area would continue to be met by providing projections for facility demands and financial resources, and included a variety of recommendations for facility renovation and development. Actions related to the 1999 update included land use designation changes and rezoning to accommodate expansion of airport uses, development of a new parallel runway, realignment of Greenhill Road, and a variety of other airport improvements such as upgrades to the passenger terminal building and parking area expansion.

The current update to the Eugene Airport Master Plan replaces earlier versions as a refinement to the Eugene-Springfield Metropolitan Area General Plan (Metro Plan). The purpose of this plan is to provide guidance regarding specific airport functions including commercial aviation, general aviation, and airport-related commercial and industrial services associated with the airport. As stated in the plan goals and objectives, the current master plan update focuses heavily on the refinement of "landside" components (such as future development of airport-supporting commercial services) and ways to make the airport more financially self-reliant, but also includes improvements within the existing airport boundary to accommodate the Eugene Airport's projected aviation demands. This update uses 2006 as the base year for data and analytical purposes and serves as a development guide through the planning horizon of 2026.

Unlike the adoption process for the 1999 Airport Master Plan, the current update does not include any amendments to the Metro Plan or other locally adopted plans such as the Eugene-Springfield Transportation System Plan (Transplan). No changes to existing land use designations, zoning, or adopted policy are proposed. The current update does include recommendations for a variety of airport improvements that will accommodate the Airport's needs into the future, some of which will require further research and analysis to determine the need and timing for any future Metro Plan amendments or zone changes in the vicinity. Those recommendations are further addressed in the findings below and it is emphasized that any specific Metro Plan amendments or zone changes necessary to implement the recommendations of the Eugene Airport Master Plan will

require additional public process and formal adoption by the affected jurisdiction(s) in the future.

As addressed in the findings below, the current update of the Eugene Airport Master Plan is consistent with the process and regulations established for airport planning and administered by the Federal Aviation Administration (FAA) and the Oregon Department of Aviation (ODA). The master plan update follows the process set forth in FAA Advisory Circular 150-5070-6B, Airport Master Plans, and complies with the State's airport planning regulations including applicable Oregon Revised Statutes (ORS) and Oregon Administrative Rules (OARs). The findings below further demonstrate that adoption of the Eugene Airport Master Plan update is consistent with the applicable local approval criteria for adoption as a refinement to the Metro Plan.

The need for joint City and County adoption of the updated master plan stems from the location of the Eugene Airport outside the City's urban growth boundary (UGB), but within the Metro Plan boundary. As a matter of Metro Plan policy, the airport is located outside the UGB to protect aviation functions from incompatible development, as well as to reduce airport-related impacts on development within the UGB. Due to this location, land use regulations for the airport property are under Lane County jurisdiction, and adoption of the refinement plan for this City-owned facility necessarily includes both governing bodies. The joint adoption is also appropriate as the updated Eugene Airport Master Plan will replace the existing plan, which was also adopted jointly.

Approval Criteria and Evaluation

Eugene Code (EC) 9.8424 requires that the following criteria (in **bold**) must be met for adoption of the updated Eugene Airport Master Plan, as a refinement to the Metro Plan:

- (1) **The refinement plan amendment is consistent with all of the following:**
 - (a) **Statewide Planning Goals;**
 - (b) **Applicable provisions of the Metro Plan;**
 - (c) **Remaining portions of the refinement plan.**

- (2) **The refinement plan amendment addresses one or more of the following:**
 - (a) **An error in the publication of the refinement plan.**
 - (b) **New inventory material which relates to a statewide planning goal.**
 - (c) **New or amended community policies.**
 - (d) **New or amended provisions in federal law or regulation, state statute, state regulation, statewide planning goal, or state agency land use plan.**
 - (e) **A change in circumstances in a substantial manner that was not anticipated at the time the refinement plan was adopted.**

Lane Code (LC) criteria at LC 12.060, for approval of a refinement plan amendment, are also included below:

The Refinement Plan amendment must be consistent with the relevant statewide planning goals adopted by the Land Conservation and Development Commission and the Metro Plan.

The findings below address consistency with the applicable approval criteria in support of

adoption.

Statewide Planning Goals -- EC 9.8424(1)(a) and LC 12.060

Goal 1 - Citizen Involvement: To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

The City of Eugene and Lane County have acknowledged provisions for citizen involvement that ensure the opportunity for citizens to be involved in all phases of the planning process and set out requirements for such involvement. Adoption of this update to the Eugene Airport Master Plan, as a refinement of the Metro Plan, does not amend the citizen involvement program of either jurisdiction. The process for reviewing this refinement plan update complies with Goal 1 since it complies with, and surpasses the requirements of, the citizen involvement provisions.

Beyond the locally required public notice and hearings which are described below, an Airport Master Plan Advisory Committee was established to assist with the development of the master plan update, including representatives from a broad cross-section of the community being served by the Eugene Airport. The 16-member committee met six times over the course of approximately 2½ years between 2006 and 2009, to review and provide input on the master plan as it was developed. In addition, four public participation workshops were held during the course of developing the master plan update.

The City of Eugene and Lane County implement Statewide Planning Goal 1 by requiring that notice of the proposed adoption be given and public hearings be held prior to adoption. Consideration of the proposed adoption began with a joint public hearing by the Eugene and Lane County Planning Commissions. The joint Planning Commission public hearing on the proposed adoption was duly noticed to the City of Springfield, Lane County, community groups and individuals who have requested notice. The City also mailed notice of the proposed refinement plan update to the Department of Land Conservation and Development, in accordance with State statutes. Notice and opportunity to comment was also provided to the Oregon Department of Transportation (ODOT), all neighborhood groups officially recognized by the City, and other interested parties including members of the Eugene Airport Master Plan Advisory Committee. In addition, notice of the public hearing was published in the Register Guard newspaper. The Eugene City Council and Lane County Board of Commissioners also held a duly noticed public hearing to consider adoption of the Eugene Airport Master Plan, prior to final action by each local jurisdiction.

These notice requirements and public hearing processes, in addition to the work of the Airport Master Plan Advisory Committee, have afforded ample opportunity for public input and involvement consistent with the State's citizen involvement provisions required by Goal 1.

Goal 2 - Land Use Planning: To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Under Goal 2, the Metro Plan serves as the area's comprehensive, policy framework plan. The current update to the Eugene Airport Master Plan replaces earlier versions as a refinement to the

Eugene-Springfield Metropolitan Area General Plan (Metro Plan), and is found to be consistent with the policy framework already established by the Metro Plan, and related adopted plans including Transplan. As required by the approval criteria for adoption of this refinement plan update, findings regarding consistency with the relevant provisions of the Metro Plan are provided later in this evaluation. The proposed update also follows applicable procedures for coordinated adoption by the local governing bodies including the City of Eugene and Lane County.

In addition to its status as a component of the overall comprehensive planning framework, the master plan update is also required to meet FAA requirements for aviation planning and remain eligible for FAA funding for needed Airport improvements. As in the past, the current master plan update was developed consistent with the FAA guidelines for Airport master plans and also accounts for numerous aviation standards relating to airport operations safety, noise and compatibility with surrounding land uses contained in applicable FAA Federal Aviation Regulations. The current update is also consistent with state airport-related objectives outlined in the Oregon Aviation Plan and promulgated through the state's adopted Aviation System Plan (ASP) and related statutes and administrative rules.

ORS 836.610, Airports and Landing Fields, requires that local comprehensive plans and land use regulations accommodate airport zones and uses for certain publicly owned and privately owned public use airports. Pursuant to OAR 738-090-0030, the Eugene Airport (a.k.a. Mahlon Sweet Field) is listed as one of the publicly owned airports registered, licensed, or otherwise recognized by the Oregon Department of Transportation (ODOT) and Oregon Aviation Department (ODA). For airports so listed, ORS 836.610 requires that comprehensive plans be consistent with the provisions in ORS 836.616, which establish rules for airport uses and activities, and ORS 836.619, relating to state rules establishing safety and compatibility standards of land uses near airports.

The Airport Planning Rules contained in OAR 660, Division 13 implement ORS 836.600 through 836.630 and Statewide Planning Goal 12, Transportation. These rules establish parameters for airport planning to support the vitality and economic function of airports and their host communities. As stated in OAR 660-013-0010(1):

The policy of the State of Oregon is to encourage and support the continued operation and vitality of Oregon's airports. These rules are intended to promote a convenient and economic system of airports in the state and for land use planning to reduce risks to aircraft operations and nearby land uses.

OAR 660-013-0030 requires that local plans for airport operations and development be consistent with the state's adopted ASP. The current master plan update serves as the local aviation plan consistent with the ASP, under the requirements of ORS 836.600 through 836.630 and applicable OARs. Beyond consistency with these statutory requirements, the current update complies with applicable FAA regulations as described in the master plan update.

Under the state's Transportation Planning Rule, OAR 660-012-0065(1) and (3)(n) permit expansions or alterations of public use airports on rural lands when such improvements do not permit service to a larger class of airplanes, and preclude the need to take an exception to Statewide Planning Goals under the standards outlined in Goal 2. The current master plan update

does not include any improvements are proposed that would permit service by a larger class of airplanes and no goal exceptions are required. Conformance with the state's Transportation Planning Rule will be further addressed below as part of the findings relative to Goal 12.

Further, as noted elsewhere in this evaluation, adoption of the current master plan update as a refinement to the Metro Plan remains consistent with, and does not include any additional plan amendments to the Metro Plan or other locally adopted plans such as Transplan. The following policy language from the Metro Plan Transportation Element (Policy F.30, Page III-F-12), is particularly relevant under Goal 2:

Support public investment in the Eugene Airport as a regional facility and provide land use controls that limit incompatible development within the airport environs. Continue to use the Eugene Airport Master Plan as the guide for improvements of facilities and services at the airport.

The current update does include recommendations for a variety of airport improvements that will accommodate the Airport's needs into the future, some of which will require further research and analysis to determine the need and timing for any future Metro Plan amendments or zone changes in the vicinity. Those recommendations are further addressed in the findings below and it is emphasized that any specific Metro Plan amendments or zone changes necessary to implement the recommendations of the Eugene Airport Master Plan will require additional public process and formal adoption by the affected jurisdiction(s) in the future.

As such, the current master plan update is consistent with Goal 2 as it relates to updating a refinement to the Metro Plan and does not create internal inconsistencies with the Metro Plan.

Goal 3 - Agricultural Land: To preserve and maintain agricultural lands.

The prior 1999 Airport Master Plan adoption included Metro Plan amendments to re-designate parcels from Agricultural use on the Metro Plan diagram to Government and Education and to Airport Reserve. At that time, analysis required by Goal 3 was provided for the affected parcels which were re-designated to accommodate airport use and no Goal exception was required pursuant to OAR 660-012-0065(1) and (3)(n).

Adoption of the current master plan update does not include any changes to existing Agricultural land use designations in the surrounding area, and OAR 660-012-0065(1) and (3)(n) allow airport improvements contemplated in the master plan update without the need for a Goal exception.

The current master plan update does consider impacts related to noise from airport operations and possible impacts from surrounding land uses on aviation safety. Existing and proposed airport improvements are compatible with agricultural uses per standards set forth in OAR 660-013-0040, et seq; ODOT's Oregon Airport Land Use Compatibility Guidelines; and relevant Metro Plan policies and local ordinances.

As such, adoption of the current master plan update is consistent with Goal 3 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 4 - Forest Land: To conserve forest lands.

There are no parcels within the airport boundary or surrounding area currently designated as Forest Land. Also, as found during the prior 1999 Airport Master Plan process, even if forest resources were feasible in the subject area, such uses could be considered incompatible with airport operations given height restrictions and air safety standards.

Adoption of the current master plan update does not include any changes to existing Forest Land use designations, and OAR 660-012-0065(1) and (3)(n) allow airport improvements contemplated in the master plan update without the need for an exception to Goal 4.

As such, adoption of the current master plan update is consistent with Goal 4 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 5 - Open Spaces, Scenic and Historic Areas, and Natural Resources: To conserve open space and protect natural and scenic resources.

Adoption of the current Eugene Airport Master Plan update does not include any plan amendments that would affect Goal 5 resources. The following administrative rule (OAR 660-023-0250) is applicable to post-acknowledgement plan amendments concerning Goal 5:

- (3) Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:
 - (a) The PAPA creates or amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5;
 - (b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list; or
 - (c) The PAPA amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area.

Adoption of the Eugene Airport Master Plan update as a refinement to the Metro Plan will not create or amend a list of Goal 5 resources, a plan or a land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5. Adoption of the master plan update will not allow any new conflicting uses or amend the acknowledged Urban Growth Boundary. Therefore, adoption does not trigger the need to consider Goal 5 pursuant to OAR 660-023-0250(3).

The only Lane County Goal 5 waterway identified in the vicinity traverses the boundary of the site near its southwest corner and is not impacted by any of the recommendations in the master plan update. To the extent that construction of future airport improvements contemplated in the master plan update may impact other jurisdictional wetlands in the area, as discussed in Chapter 3, Alternative Plan Concepts, avoidance and minimization alternatives have been considered. Some of the wetland areas considered in alternative development scenarios for the airport have

already been filled and mitigated through past permitting. Prior to any development in areas not already delineated or filled, further wetlands analysis and delineation will be required. If wetlands are in fact present, then state and federal wetlands regulations and permitting processes will need to be satisfied before construction, in addition to any related County requirements.

As such, adoption of the current master plan update is consistent with Goal 5 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 6 - Air, Water and Land Resources Quality: To maintain and improve the quality of the air, water, and land resources of the state.

Goal 6 addresses waste and process discharges from development, and is aimed at protecting air, water and land from impacts from those discharges. The proposed refinement plan update does not amend the metropolitan area's air, water quality or land resource policies. Future development recommended in the updated master plan will be required to comply with all local, state, and federal regulations regarding land, air, and water discharges and emissions. To the extent that any of the future airport improvements within the updated master plan may create additional impacts to air, water or land resources, state and local permitting processes will ensure that discharges do not exceed allowable standards.

The updated Eugene Airport Master Plan otherwise demonstrates that future development can be reasonably expected to comply with applicable environmental laws. As such, adoption of the current master plan update is consistent with Goal 6 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 7 - Areas Subject to Natural Disasters and Hazards: To protect life and property from natural disasters and hazards.

Goal 7 requires that local government planning programs include provisions to protect people and property from natural hazards such as floods, landslides, earthquakes and related hazards, tsunamis and wildfires. The updated Eugene Airport Master Plan is consistent with Goal 7 because the only identified potential natural hazards are areas within the 100-year floodplain located inside the airport boundary, and future development proposed must comply with local, state, and federal regulations pertaining to building and construction relative to floodplain areas.

Limited areas within the airport boundary are in the 100-year floodplain (Zone A). These areas are associated with drainages carrying runoff to the Clear Lake Channel and Amazon Canal system at the periphery of the airport within runway protection zones and other areas not scheduled for immediate development and currently have no operational impacts. If future development were to impact any areas within the 100-year floodplain, it would be subject to applicable regulatory standards and local permitting requirements for floodplain development to ensure life and property is adequately protected.

The airport is too far from the ocean and significant landforms to be subject to natural disasters or hazards such as landslides or tsunamis. Although much of western Oregon is subject to potential earthquake hazards, detailed fault locations have not been mapped for the subject area. Future

construction recommended in the updated master plan will be subject to current earthquake standards contained in allocable building codes and will therefore pose minimal risk associated with potential earthquakes. Other potential hazards, such as severe winter storms and wildfires can also be mitigated at the time of development based on accepted building codes and building techniques.

As such, adoption of the current master plan update is consistent with Goal 7 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 8 - Recreational Needs: To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

The updated Eugene Airport Master Plan is consistent with Goal 8 because there are no public parks and no land within or near the Eugene airport boundary that are zoned or designated for park use. The nearest public park, Golden Gardens Park, is located approximately 2.1 miles from the airport (driving distance to the park is 3.2 miles). The nearest developed public park is Lane County's Orchard Point Park, located at the northeast edge of Fern Ridge Reservoir, approximately 5.5 miles west of the airport. None of the proposed development at the airport for the 20-year planning period requires the use or acquisition of publicly owned park or recreation area.

As such, adoption of the current master plan update is consistent with Goal 8 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 9 - Economic Development: To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

Statewide Planning Goal 9 calls for the provision of "adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens." The current update of the Eugene Airport Master Plan is consistent with Goal 9 because proposed improvements will continue to enhance the viability of the Eugene Airport which supports the area's economic vitality as Oregon's second largest airport. It is identified in the state's adopted Aviation System Plan (ASP) as a Level 1 commercial service airport, the most significant type within the state's system of public airports. The improvements proposed in the current master plan update will assure that necessary facilities will be available to support airport functions through 2026, and consequently the area's economic development needs.

These economic development needs are identified in two functional refinements to the Metro Plan, the Metropolitan Industrial Lands Special Study and the Eugene Commercial Lands Study. The studies provide the currently adopted inventories and policy recommendations relative to the economic development aspects of industrial and commercial lands within the Eugene UGB, consistent with Goal 9 and related ORS and OAR requirements. Neither study identified land within the airport boundary for inclusion in the metro area's inventory of industrially or commercially designated lands. This is because both studies focused on sites within the UGB and the fact that the Government and Education designation allows for limited airport related industrial and commercial development as a matter of Metro Plan policy. Since adoption of the

master plan update does not include any land within the UGB, nor any change to existing land use designations (particularly no conversion of industrial or commercial use to another designation), no additional analysis is required under the implementing provisions of OAR 660-009-0010.

The current Eugene Airport Master Plan update is otherwise consistent with state policy governing local government airport regulations. ORS 836.600 states:

In recognition of the importance of the network of airports to the economy of the state and the safety and recreation of its citizens, the policy of the State of Oregon is to encourage and support the continued operation and vitality of Oregon's airports. Such encouragement and support extends to all commercial and recreational uses and activities described in ORS 836.616(2).

Because the Metro Plan, the ASP, and state policy acknowledge the airport's role in meeting the area's economic development objectives, the current master plan update is consistent with Goal 9, and approval will not affect Metro Plan compliance with this Goal.

Goal 10 - Housing: To provide for the housing needs of the citizens of the state.

Goal 10 requires that communities plan for and maintain an inventory of buildable residential land for needed housing units. The administrative rule for Statewide Planning Goal 10 (OAR 660 Division 8) states that "the mix and density of needed housing is determined in the housing needs projection. Sufficient buildable land shall be designated on the comprehensive plan map to satisfy housing needs by type and density range as determined in the housing needs projection. The local buildable lands inventory must document the amount of buildable land in each residential plan designation." The comprehensive plan map for the City is the Metro Plan land use diagram. The 1999 Eugene-Springfield Metropolitan Area Residential Lands and Housing Study (RLS) is acknowledged for compliance with the requirements of Goal 10 and its administrative rule.

The subject property was not included in the adopted RLS supply analysis, and the current Eugene Airport Master Plan update is consistent with Goal 10 because it does not change the status or designation of any land currently designated for residential use. Nonetheless, it is notable that the master plan update thoroughly considers two operational issues that relate to the compatibility of nearby housing or residential uses and the airport: safety and noise.

The FAA establishes safety rules regarding airspace safety within airport environs through Federal Aviation Regulation (FAR) Part 77. Part 77 establishes safety zones around runways to preclude the location of structures or other land uses that would create obstructions or pose undue hazards to air navigation. The two- and three-dimensional "imaginary surfaces" created in Part 77 are codified through requirements outlined in OAR 738-0070 and local codes (Lane Code and Eugene Code). Additional runway protection zones at and near the ends of runways are defined by the FAA relative to airport design criteria to assure safe and efficient airport operations.

These imaginary surfaces and runway protection zones are described and depicted in the master plan update. In the event of any extension of runway protection zones or changes to protected airspace as described in Chapter 6 of the master plan update, additional analysis is necessary to

determine the extent of any needed changes to local zoning and plan designations. Future property acquisition and land use designation changes may also be necessary to accommodate extended runway protection zones in the future. The master plan update recommends a detailed analysis of existing land use protection measures and what changes may be needed to accommodate future airport improvements, prior to implementation.

Another compatibility issue between the airport and residential development pertains to noise impacts. FAA regulations define acceptable noise exposure contours as measured in yearly day-night average sound levels (DNL). The FAA and other federal agencies establish 65 DNL as the threshold considered as a significant noise impact. Through OAR 340-035-0045, the State Department of Environmental Quality (DEQ) regards DNL between 60 and 55 as significant. DEQ establishes 55 DNL as a threshold for study of planning and zoning measures to limit noise exposure and recommends specific mitigation when noise impacts are greater than 65 DNL.

As depicted and described in Chapter 6 of the Plan Update, there is a significant decrease in the amount of single family housing parcels within the 55 DNL contour in 2026, with 117 less affected parcels than in 2006. Within the 65 DNL contour for 2006, there are four single family home parcels and one mobile home parcel. This number decreases to three home parcels in 2026. The reduction in the size of noise contours is primarily due to a change in military aircraft that will operate at the airport.

As such, adoption of the current master plan update is consistent with Goal 10 and will not affect Metro Plan compliance with the provision of needed housing pursuant to Goal 10.

Goal 11 - Public Facilities and Services: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

The Eugene Airport is currently served by the full range of urban services through previous exceptions allowing such services to be extended to the airport outside of the UGB and as provided for in the Metro Plan Public Facilities and Services Element (Policy G.26, Page III-G-12). Findings in the Metro Plan also confirm that the area of the airport designated Government and Education on the Metro Plan diagram receives municipal water, wastewater, fire and police services. Proposed improvements in this area would therefore be served by extension of currently available key urban services.

The City of Eugene provides wastewater sewer facilities to the airport as well as police and fire protection. The City's Airport Rescue and Firefighting station is supplemented by response as necessary from the Lane Rural Fire Protection District. Other services are provided by other local and regional utilities. Water service is provided by the Eugene Water and Electric Board (EWEB), and EWEB and the Emerald People's Utility District both provide electrical service to the airport. Telecommunications services are provided by Qwest and Lane Council of Governments. Natural gas is provided by Northwest Natural. On-site storm water runoff is controlled by piped and open channel drainage systems in the area.

Adoption of the master plan update will not require new services beyond those currently available

to serve airport and airport-related functions. Furthermore, extension of services for future development to meet the demands outlined in the master plan update is wholly consistent with the Metro Plan and prior City determinations.

In addition to the demonstration made through the above findings, an exception from Statewide Planning Goal 11 is not necessary based upon OAR 660-012-0065(1) and (3)(n). As previously described, these administrative rules preclude the need to take an exception to Goal 11 (and Goals 3, 4, and 14) if the proposed amendments do not permit service to a larger class of airplane. The current master plan update does not include any amendments to land use designation or proposed improvements through the planning horizon of 2026 that would permit service to a larger class of aircraft than is currently provided.

As such, adoption of the current master plan update is consistent with Goal 11 and will not affect Metro Plan compliance with the Goal.

Goal 12 - Transportation: To provide and encourage a safe, convenient and economic transportation system.

Goal 12 is implemented through the Transportation Planning Rule (TPR), as defined in Oregon Administrative Rule OAR 660-012-0000, *et seq.* The Eugene-Springfield Metropolitan Area Transportation Plan (TransPlan) provides the regional policy framework through which the TPR is implemented at the local level. The TPR states that when land use changes, including amendments to acknowledged comprehensive plans, will significantly affect an existing or planned transportation facility, the local government must put in place measures to assure that the allowed land uses are consistent with the function, capacity and performance standards of those transportation facilities.

As previously described, adoption of the current master plan update does not include any amendments to the Metro Plan, adopted land use designations or existing zoning. No changes are proposed to the functional classification of any roadways serving the airport. Adoption of the updated refinement plan is not anticipated to reduce any existing transportation facilities below accepted levels of service or otherwise significantly affect any transportation facilities as outlined in the TPR. Unlike the prior adoption of amendments to implement the 1999 Airport Master Plan, the current master plan does not include any new planned transportation facility projects or major roadway realignments requiring formal plan amendments.

Consistent with OAR 660-012-0065(3)(n), the proposed airport improvements recommended in the updated master plan do not permit service to a larger class of airplanes. As noted in Chapter 3 (Section 2.2. Design Standards), the Eugene Airport will continue to accommodate the Boeing 737-300 aircraft which has an FAA Airport Reference Code (ARC) of C-III. The current air carriers at the Eugene Airport use smaller regional jet aircraft, and although not currently as common as in the past, the Boeing 737 has long been used as the critical design aircraft. To the extent that future airport improvements may result in additional motor vehicle traffic impacts, County traffic impact analysis requirements will be addressed as development and permitting occurs.

As the current master plan update is consistent with OAR 660-012-0065 as well as other OARs

within the state Transportation Planning Rule and ORS, adoption is consistent with Goal 12 and will not affect Metro Plan compliance with the Goal.

Goal 13 - Energy Conservation: To conserve energy.

The current master plan update is consistent with Goal 13 because the proposed airport development will strengthen the substantial investments made in the existing airport, enhance the viability of air transportation for people and goods proximate to the state's second largest population center, and offer an alternative to potentially less fuel-efficient transportation modes.

The recommendations contained in the master plan update will support a vital airport serving the air cargo, air mail, and commercial and general aviation needs of Eugene, Springfield, Lane County and the greater Eugene Airport service area. In meeting the updated master plan's demand projections and facility capacity requirements, considerable energy will be conserved from export passengers and air freight to more distant airfields, including Portland International Airport. Using alternative airports to meet commercial and general aviation demands and transporting air freight, mail, and cargo to more distant airfields by other transportation modes (i.e., truck or rail) for shipping would result in potentially less efficient energy use, contrary to the Goal.

There are a number of past and future examples that further illustrate the airport's ongoing commitment to energy conservation consistent with this Goal. The airport has in the past and will continue to strive for ways to reduce energy consumption. As individual projects and improvements contemplated in the updated Eugene Airport Master Plan are implemented over time, new technology and opportunities for energy conservation are certainly considered to reduce cost and impact on the environment.

For example, construction of new facilities at the airport is required to follow Leadership in Energy and Environmental Design (LEED) guidelines consistent with City's adopted Sustainable Buildings Policy. This represents a significant local commitment to the use of "green building" techniques and energy conservation over time. It is also notable that the airport now has 767 taxiway lights that are LED. 475 of these were converted from 45 watt quartz lamps to 8 watt LED lights which will result in substantial energy savings. A cost benefit analysis is planned for replacing current terminal lighting from T-8 fluorescent lights with LED lights as well. The airport will also be rehabilitating the passenger breezeway with LED lights for energy conservation. If the FAA approves more airfield uses for LED lighting in the future, the airport will analyze the use and conduct a benefit analysis for implementing the technology further.

While Lane Transit District (LTD) bus service is not currently available to the airport, shuttle service is provided and the airport continues to explore possibilities that would support economically viable public (or shared private) transportation options to reduce non-renewable energy use and parking demand at the airport. All airport vehicles running diesel fuel are now operating off of Bio-5 or Bio-20 fuel and analysis will also be conducted on the feasibility of adding electric vehicle charging stations to the public parking lots in the future. Bicycle storage lockers are also available at the airport to accommodate and support alternative transportation options.

Based on these findings and the available information, adoption of the current master plan update

is consistent with Statewide Planning Goal 13 and will not affect Metro Plan compliance with the Goal.

Goal 14 - Urbanization: To provide for an orderly and efficient transition from rural to urban land use.

Goal 14 requires that comprehensive plans provide for orderly and efficient transition from rural to urban land uses, and the establishment of Urban Growth Boundaries (UGBs) around incorporated cities to assure compact and efficient urban growth inside the UGB and protection of rural resources outside of it.

Findings included in the Metro Plan Transportation Element (Page III-F-11) specifically note that the Eugene Airport is located outside the UGB to protect it from incompatible development as well as to reduce airport-related impacts on development within the UGB. It also notes that the area of airport designated government and education on the Metro Plan diagram receives municipal water, wastewater, fire, and police services. As previously discussed with respect to Goal 11, adoption of the master plan update will not require new urban services beyond those currently available to serve airport and airport-related functions. Furthermore, extension of services for future development to meet the demands outlined in the master plan update is wholly consistent with the Metro Plan and prior City determinations. Metro Plan Policy F.30 also supports the use of the Eugene Airport Master Plan as the guide for improvements of facilities and services at the airport.

As previously noted, OAR 660-012-0065(1) and (3)(n) preclude the need to take an exception to Goal 14 because the proposed improvements do not permit service to a larger class of airplanes.

As such, adoption of the current master plan update is consistent with Goal 14, and will not affect the Metro Plan compliance with the Goal.

Goal 15 - Willamette River Greenway: To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

The Eugene Airport is not within the boundaries of the Willamette River Greenway. Therefore, Statewide Planning Goal 15 is not relevant, and adoption of the master plan update will not affect Metro Plan compliance with Goal 15.

Goal 16 through 19 - Estuarine Resources, Coastal Shorelands, Beaches and Dunes, and Ocean Resources:

There are no coastal, ocean, estuarine, or beach and dune resources in proximity to the Eugene Airport. Therefore, these goals are not relevant and adoption of the master plan update will not affect compliance with Statewide Planning Goals 16 through 19.

Metro Plan Consistency -- EC 9.8424(1)(b) and LC 12.060

The Metro Plan serves as the area's comprehensive, policy framework plan. The current update to the Eugene Airport Master Plan replaces earlier versions as a refinement to the Metro Plan, and is found to be consistent with the policy framework already established by the Metro Plan. As previously discussed, adoption of the updated master plan is supported by a variety of Metro Plan policies including the following from the Transportation Element (Policy F.30, Page III-F-12):

Support public investment in the Eugene Airport as a regional facility and provide land use controls that limit incompatible development within the airport environs. Continue to use the Eugene Airport Master Plan as the guide for improvements of facilities and services at the airport.

As stated previously, unlike the adoption process for the 1999 Airport Master Plan, the current update does not include any amendments to the Metro Plan or other locally adopted plans such as the Eugene-Springfield Transportation System Plan (Transplan). No changes to existing land use designations, zoning, or adopted policy are proposed. The current update does include recommendations for a variety of airport improvements that will accommodate the Airport's needs into the future, some of which will require further research and analysis to determine the need and timing for any future Metro Plan amendments or zone changes in the vicinity. It is emphasized that any specific Metro Plan amendments or zone changes necessary to implement the recommendations of the updated Eugene Airport Master Plan will require additional public process and formal adoption by the affected jurisdiction(s) in the future.

Based on the available information and findings above, adoption of the current master plan update is consistent with the Metro Plan and will not otherwise make the Metro Plan internally inconsistent, as required.

Refinement Plan Criteria -- EC 9.8424(1)(c) and (2)

Adoption of the current Eugene Airport Master Plan update will entirely replace earlier adopted versions and there are no remaining portions of prior plans to be addressed under EC 9.8424(1)(c). The need for adoption of the updated refinement plan is based on federal and state and local requirements for coordinated aviation planning. Consistent with EC 9.8424(2)(b), new inventory information contained in the master plan update, concerning airport facilities and projected demand, supports the recommendations for future improvements to accommodate the Eugene Airport's needs through the planning horizon of 2026.

ready to take action based upon the above recommendation and evidence and testimony already in the record as well as the evidence and testimony presented at the joint elected officials public hearing; and

WHEREAS, substantial evidence exists within the record demonstrating that the proposal meets the requirements of the *Metro Plan*, of Lane Code Chapter 12, and of applicable state and local law.

NOW, THEREFORE, the Board of County Commissioners of Lane County Ordains as follows:

Section 1. The Eugene Airport Master Plan Update (February 2010), as set forth in Exhibit A attached hereto and incorporated herein, is hereby adopted to supersede and replace the provisions of the Eugene Airport Master Plan adopted as a refinement plan to the Transportation Element of the Eugene-Springfield Metropolitan Area General Plan (Metro Plan) by Ordinance No. PA 1145.


FURTHER, although not a part of this Ordinance, the Board of County Commissioners adopts Findings as set forth in Exhibit "B" attached and incorporated here by this reference, in support of this action.

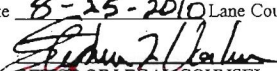
The prior version of the Eugene Airport Master Plan superseded and replaced by this Ordinance remains in full force and effect to authorize prosecution of persons in violation thereof prior to the effective date of this Ordinance.

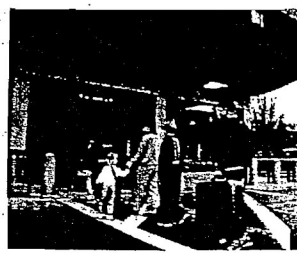
If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

ENACTED this 28th day of September 2010.


Bill Fleenor, Chair
Lane County Board of County Commissioners


Melissa Zimmer
Recording Secretary for this Meeting of the Board

APPROVED AS TO FORM
Date 8-25-2010 Lane County

OFFICE OF LEGAL COUNSEL



Eugene Airport Master Plan Update



Ordinance No. PA 1273
Exhibit A – Eugene Airport Master Plan
Full copies provided to each Commissioner

Prepared for
City of Eugene, Oregon

Prepared by

**MEAD
&
HUNT**

In association with:

3DIWest
Ford and Associates
Evans Elder & Brown
Satre Associates

February 2010

EXHIBIT B

FINDINGS IN SUPPORT OF THE ADOPTION OF AN UPDATE TO THE EUGENE AIRPORT MASTER PLAN (RA 10-2 AND PA 10-5284)

Introduction

The original Mahlon Sweet Field Master Plan was initially prepared for the airport in 1979 and adopted by the City in 1980. A major update of the Eugene Airport Master Plan was then adopted in 1990, by Lane County and the City of Eugene, to replace the Mahlon Sweet Field Master Plan. The 1990 Airport Master Plan was developed to respond to problems with runway length and capacity, and to assure continued improvements to air service that would meet the needs of Eugene, Lane County and the surrounding areas served by the airport. The 1990 master plan developed the initial concept for re-configuring the airfield into a parallel runway design which has since been implemented.

Subsequently, the 1999 Airport Master Plan update was adopted in 2000, to replace the 1990 master plan. It assured that aviation needs within the Airport's service area would continue to be met by providing projections for facility demands and financial resources, and included a variety of recommendations for facility renovation and development. Actions related to the 1999 update included land use designation changes and rezoning to accommodate expansion of airport uses, development of a new parallel runway, realignment of Greenhill Road, and a variety of other airport improvements such as upgrades to the passenger terminal building and parking area expansion.

The current update to the Eugene Airport Master Plan replaces earlier versions as a refinement to the Eugene-Springfield Metropolitan Area General Plan (Metro Plan). The purpose of this plan is to provide guidance regarding specific airport functions including commercial aviation, general aviation, and airport-related commercial and industrial services associated with the airport. As stated in the plan goals and objectives, the current master plan update focuses heavily on the refinement of "landside" components (such as future development of airport-supporting commercial services) and ways to make the airport more financially self-reliant, but also includes improvements within the existing airport boundary to accommodate the Eugene Airport's projected aviation demands. This update uses 2006 as the base year for data and analytical purposes and serves as a development guide through the planning horizon of 2026.

Unlike the adoption process for the 1999 Airport Master Plan, the current update does not include any amendments to the Metro Plan or other locally adopted plans such as the Eugene-Springfield Transportation System Plan (Transplan). No changes to existing land use designations, zoning, or adopted policy are proposed. The current update does include recommendations for a variety of airport improvements that will accommodate the Airport's needs into the future, some of which will require further research and analysis to determine the need and timing for any future Metro Plan amendments or zone changes in the vicinity. Those recommendations are further addressed in the findings below and it is emphasized that any specific Metro Plan amendments or zone changes necessary to implement the recommendations of the Eugene Airport Master Plan will

require additional public process and formal adoption by the affected jurisdiction(s) in the future.

As addressed in the findings below, the current update of the Eugene Airport Master Plan is consistent with the process and regulations established for airport planning and administered by the Federal Aviation Administration (FAA) and the Oregon Department of Aviation (ODA). The master plan update follows the process set forth in FAA Advisory Circular 150-5070-6B, Airport Master Plans, and complies with the State's airport planning regulations including applicable Oregon Revised Statutes (ORS) and Oregon Administrative Rules (OARs). The findings below further demonstrate that adoption of the Eugene Airport Master Plan update is consistent with the applicable local approval criteria for adoption as a refinement to the Metro Plan.

The need for joint City and County adoption of the updated master plan stems from the location of the Eugene Airport outside the City's urban growth boundary (UGB), but within the Metro Plan boundary. As a matter of Metro Plan policy, the airport is located outside the UGB to protect aviation functions from incompatible development, as well as to reduce airport-related impacts on development within the UGB. Due to this location, land use regulations for the airport property are under Lane County jurisdiction, and adoption of the refinement plan for this City-owned facility necessarily includes both governing bodies. The joint adoption is also appropriate as the updated Eugene Airport Master Plan will replace the existing plan, which was also adopted jointly.

Approval Criteria and Evaluation

Eugene Code (EC) 9.8424 requires that the following criteria (in **bold**) must be met for adoption of the updated Eugene Airport Master Plan, as a refinement to the Metro Plan:

- (1) **The refinement plan amendment is consistent with all of the following:**
 - (a) **Statewide Planning Goals;**
 - (b) **Applicable provisions of the Metro Plan;**
 - (c) **Remaining portions of the refinement plan.**

- (2) **The refinement plan amendment addresses one or more of the following:**
 - (a) **An error in the publication of the refinement plan.**
 - (b) **New inventory material which relates to a statewide planning goal.**
 - (c) **New or amended community policies.**
 - (d) **New or amended provisions in federal law or regulation, state statute, state regulation, statewide planning goal, or state agency land use plan.**
 - (e) **A change in circumstances in a substantial manner that was not anticipated at the time the refinement plan was adopted.**

Lane Code (LC) criteria at LC 12.060, for approval of a refinement plan amendment, are also included below:

The Refinement Plan amendment must be consistent with the relevant statewide planning goals adopted by the Land Conservation and Development Commission and the Metro Plan.

The findings below address consistency with the applicable approval criteria in support of

adoption.

Statewide Planning Goals -- EC 9.8424(1)(a) and LC 12.060

Goal 1 - Citizen Involvement: To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

The City of Eugene and Lane County have acknowledged provisions for citizen involvement that ensure the opportunity for citizens to be involved in all phases of the planning process and set out requirements for such involvement. Adoption of this update to the Eugene Airport Master Plan, as a refinement of the Metro Plan, does not amend the citizen involvement program of either jurisdiction. The process for reviewing this refinement plan update complies with Goal 1 since it complies with, and surpasses the requirements of, the citizen involvement provisions.

Beyond the locally required public notice and hearings which are described below, an Airport Master Plan Advisory Committee was established to assist with the development of the master plan update, including representatives from a broad cross-section of the community being served by the Eugene Airport. The 16-member committee met six times over the course of approximately 2½ years between 2006 and 2009, to review and provide input on the master plan as it was developed. In addition, four public participation workshops were held during the course of developing the master plan update.

The City of Eugene and Lane County implement Statewide Planning Goal 1 by requiring that notice of the proposed adoption be given and public hearings be held prior to adoption. Consideration of the proposed adoption began with a joint public hearing by the Eugene and Lane County Planning Commissions. The joint Planning Commission public hearing on the proposed adoption was duly noticed to the City of Springfield, Lane County, community groups and individuals who have requested notice. The City also mailed notice of the proposed refinement plan update to the Department of Land Conservation and Development, in accordance with State statutes. Notice and opportunity to comment was also provided to the Oregon Department of Transportation (ODOT), all neighborhood groups officially recognized by the City, and other interested parties including members of the Eugene Airport Master Plan Advisory Committee. In addition, notice of the public hearing was published in the Register Guard newspaper. The Eugene City Council and Lane County Board of Commissioners also held a duly noticed public hearing to consider adoption of the Eugene Airport Master Plan, prior to final action by each local jurisdiction.

These notice requirements and public hearing processes, in addition to the work of the Airport Master Plan Advisory Committee, have afforded ample opportunity for public input and involvement consistent with the State's citizen involvement provisions required by Goal 1.

Goal 2 - Land Use Planning: To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

Under Goal 2, the Metro Plan serves as the area's comprehensive, policy framework plan. The current update to the Eugene Airport Master Plan replaces earlier versions as a refinement to the

Eugene-Springfield Metropolitan Area General Plan (Metro Plan), and is found to be consistent with the policy framework already established by the Metro Plan, and related adopted plans including Transplan. As required by the approval criteria for adoption of this refinement plan update, findings regarding consistency with the relevant provisions of the Metro Plan are provided later in this evaluation. The proposed update also follows applicable procedures for coordinated adoption by the local governing bodies including the City of Eugene and Lane County.

In addition to its status as a component of the overall comprehensive planning framework, the master plan update is also required to meet FAA requirements for aviation planning and remain eligible for FAA funding for needed Airport improvements. As in the past, the current master plan update was developed consistent with the FAA guidelines for Airport master plans and also accounts for numerous aviation standards relating to airport operations safety, noise and compatibility with surrounding land uses contained in applicable FAA Federal Aviation Regulations. The current update is also consistent with state airport-related objectives outlined in the Oregon Aviation Plan and promulgated through the state's adopted Aviation System Plan (ASP) and related statutes and administrative rules.

ORS 836.610, Airports and Landing Fields, requires that local comprehensive plans and land use regulations accommodate airport zones and uses for certain publicly owned and privately owned public use airports. Pursuant to OAR 738-090-0030, the Eugene Airport (a.k.a. Mahlon Sweet Field) is listed as one of the publicly owned airports registered, licensed, or otherwise recognized by the Oregon Department of Transportation (ODOT) and Oregon Aviation Department (ODA). For airports so listed, ORS 836.610 requires that comprehensive plans be consistent with the provisions in ORS 836.616, which establish rules for airport uses and activities, and ORS 836.619, relating to state rules establishing safety and compatibility standards of land uses near airports.

The Airport Planning Rules contained in OAR 660, Division 13 implement ORS 836.600 through 836.630 and Statewide Planning Goal 12, Transportation. These rules establish parameters for airport planning to support the vitality and economic function of airports and their host communities. As stated in OAR 660-013-0010(1):

The policy of the State of Oregon is to encourage and support the continued operation and vitality of Oregon's airports. These rules are intended to promote a convenient and economic system of airports in the state and for land use planning to reduce risks to aircraft operations and nearby land uses.

OAR 660-013-0030 requires that local plans for airport operations and development be consistent with the state's adopted ASP. The current master plan update serves as the local aviation plan consistent with the ASP, under the requirements of ORS 836.600 through 836.630 and applicable OARs. Beyond consistency with these statutory requirements, the current update complies with applicable FAA regulations as described in the master plan update.

Under the state's Transportation Planning Rule, OAR 660-012-0065(1) and (3)(n) permit expansions or alterations of public use airports on rural lands when such improvements do not permit service to a larger class of airplanes, and preclude the need to take an exception to Statewide Planning Goals under the standards outlined in Goal 2. The current master plan update

does not include any improvements are proposed that would permit service by a larger class of airplanes and no goal exceptions are required. Conformance with the state's Transportation Planning Rule will be further addressed below as part of the findings relative to Goal 12.

Further, as noted elsewhere in this evaluation, adoption of the current master plan update as a refinement to the Metro Plan remains consistent with, and does not include any additional plan amendments to the Metro Plan or other locally adopted plans such as Transplan. The following policy language from the Metro Plan Transportation Element (Policy F.30, Page III-F-12), is particularly relevant under Goal 2:

Support public investment in the Eugene Airport as a regional facility and provide land use controls that limit incompatible development within the airport environs. Continue to use the Eugene Airport Master Plan as the guide for improvements of facilities and services at the airport.

The current update does include recommendations for a variety of airport improvements that will accommodate the Airport's needs into the future, some of which will require further research and analysis to determine the need and timing for any future Metro Plan amendments or zone changes in the vicinity. Those recommendations are further addressed in the findings below and it is emphasized that any specific Metro Plan amendments or zone changes necessary to implement the recommendations of the Eugene Airport Master Plan will require additional public process and formal adoption by the affected jurisdiction(s) in the future.

As such, the current master plan update is consistent with Goal 2 as it relates to updating a refinement to the Metro Plan and does not create internal inconsistencies with the Metro Plan.

Goal 3 - Agricultural Land: To preserve and maintain agricultural lands.

The prior 1999 Airport Master Plan adoption included Metro Plan amendments to re-designate parcels from Agricultural use on the Metro Plan diagram to Government and Education and to Airport Reserve. At that time, analysis required by Goal 3 was provided for the affected parcels which were re-designated to accommodate airport use and no Goal exception was required pursuant to OAR 660-012-0065(1) and (3)(n).

Adoption of the current master plan update does not include any changes to existing Agricultural land use designations in the surrounding area, and OAR 660-012-0065(1) and (3)(n) allow airport improvements contemplated in the master plan update without the need for a Goal exception.

The current master plan update does consider impacts related to noise from airport operations and possible impacts from surrounding land uses on aviation safety. Existing and proposed airport improvements are compatible with agricultural uses per standards set forth in OAR 660-013-0040, et seq; ODOT's Oregon Airport Land Use Compatibility Guidelines; and relevant Metro Plan policies and local ordinances.

As such, adoption of the current master plan update is consistent with Goal 3 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 4 - Forest Land: To conserve forest lands.

There are no parcels within the airport boundary or surrounding area currently designated as Forest Land. Also, as found during the prior 1999 Airport Master Plan process, even if forest resources were feasible in the subject area, such uses could be considered incompatible with airport operations given height restrictions and air safety standards.

Adoption of the current master plan update does not include any changes to existing Forest Land use designations, and OAR 660-012-0065(1) and (3)(n) allow airport improvements contemplated in the master plan update without the need for an exception to Goal 4.

As such, adoption of the current master plan update is consistent with Goal 4 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 5 - Open Spaces, Scenic and Historic Areas, and Natural Resources: To conserve open space and protect natural and scenic resources.

Adoption of the current Eugene Airport Master Plan update does not include any plan amendments that would affect Goal 5 resources. The following administrative rule (OAR 660-023-0250) is applicable to post-acknowledgement plan amendments concerning Goal 5:

- (3) Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:
 - (a) The PAPA creates or amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5;
 - (b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list; or
 - (c) The PAPA amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area.

Adoption of the Eugene Airport Master Plan update as a refinement to the Metro Plan will not create or amend a list of Goal 5 resources, a plan or a land use regulation adopted in order to protect a significant Goal 5 resource or to address specific requirements of Goal 5. Adoption of the master plan update will not allow any new conflicting uses or amend the acknowledged Urban Growth Boundary. Therefore, adoption does not trigger the need to consider Goal 5 pursuant to OAR 660-023-0250(3).

The only Lane County Goal 5 waterway identified in the vicinity traverses the boundary of the site near its southwest corner and is not impacted by any of the recommendations in the master plan update. To the extent that construction of future airport improvements contemplated in the master plan update may impact other jurisdictional wetlands in the area, as discussed in Chapter 3, Alternative Plan Concepts, avoidance and minimization alternatives have been considered. Some of the wetland areas considered in alternative development scenarios for the airport have

already been filled and mitigated through past permitting. Prior to any development in areas not already delineated or filled, further wetlands analysis and delineation will be required. If wetlands are in fact present, then state and federal wetlands regulations and permitting processes will need to be satisfied before construction, in addition to any related County requirements.

As such, adoption of the current master plan update is consistent with Goal 5 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 6 - Air, Water and Land Resources Quality: To maintain and improve the quality of the air, water, and land resources of the state.

Goal 6 addresses waste and process discharges from development, and is aimed at protecting air, water and land from impacts from those discharges. The proposed refinement plan update does not amend the metropolitan area's air, water quality or land resource policies. Future development recommended in the updated master plan will be required to comply with all local, state, and federal regulations regarding land, air, and water discharges and emissions. To the extent that any of the future airport improvements within the updated master plan may create additional impacts to air, water or land resources, state and local permitting processes will ensure that discharges do not exceed allowable standards.

The updated Eugene Airport Master Plan otherwise demonstrates that future development can be reasonably expected to comply with applicable environmental laws. As such, adoption of the current master plan update is consistent with Goal 6 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 7 - Areas Subject to Natural Disasters and Hazards: To protect life and property from natural disasters and hazards.

Goal 7 requires that local government planning programs include provisions to protect people and property from natural hazards such as floods, landslides, earthquakes and related hazards, tsunamis and wildfires. The updated Eugene Airport Master Plan is consistent with Goal 7 because the only identified potential natural hazards are areas within the 100-year floodplain located inside the airport boundary, and future development proposed must comply with local, state, and federal regulations pertaining to building and construction relative to floodplain areas.

Limited areas within the airport boundary are in the 100-year floodplain (Zone A). These areas are associated with drainages carrying runoff to the Clear Lake Channel and Amazon Canal system at the periphery of the airport within runway protection zones and other areas not scheduled for immediate development and currently have no operational impacts. If future development were to impact any areas within the 100-year floodplain, it would be subject to applicable regulatory standards and local permitting requirements for floodplain development to ensure life and property is adequately protected.

The airport is too far from the ocean and significant landforms to be subject to natural disasters or hazards such as landslides or tsunamis. Although much of western Oregon is subject to potential earthquake hazards, detailed fault locations have not been mapped for the subject area. Future

construction recommended in the updated master plan will be subject to current earthquake standards contained in allocable building codes and will therefore pose minimal risk associated with potential earthquakes. Other potential hazards, such as severe winter storms and wildfires can also be mitigated at the time of development based on accepted building codes and building techniques.

As such, adoption of the current master plan update is consistent with Goal 7 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 8 - Recreational Needs: To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

The updated Eugene Airport Master Plan is consistent with Goal 8 because there are no public parks and no land within or near the Eugene airport boundary that are zoned or designated for park use. The nearest public park, Golden Gardens Park, is located approximately 2.1 miles from the airport (driving distance to the park is 3.2 miles). The nearest developed public park is Lane County's Orchard Point Park, located at the northeast edge of Fern Ridge Reservoir, approximately 5.5 miles west of the airport. None of the proposed development at the airport for the 20-year planning period requires the use or acquisition of publicly owned park or recreation area.

As such, adoption of the current master plan update is consistent with Goal 8 and will not otherwise affect Metro Plan compliance with this Goal.

Goal 9 - Economic Development: To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens.

Statewide Planning Goal 9 calls for the provision of "adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens." The current update of the Eugene Airport Master Plan is consistent with Goal 9 because proposed improvements will continue to enhance the viability of the Eugene Airport which supports the area's economic vitality as Oregon's second largest airport. It is identified in the state's adopted Aviation System Plan (ASP) as a Level 1 commercial service airport, the most significant type within the state's system of public airports. The improvements proposed in the current master plan update will assure that necessary facilities will be available to support airport functions through 2026, and consequently the area's economic development needs.

These economic development needs are identified in two functional refinements to the Metro Plan, the Metropolitan Industrial Lands Special Study and the Eugene Commercial Lands Study. The studies provide the currently adopted inventories and policy recommendations relative to the economic development aspects of industrial and commercial lands within the Eugene UGB, consistent with Goal 9 and related ORS and OAR requirements. Neither study identified land within the airport boundary for inclusion in the metro area's inventory of industrially or commercially designated lands. This is because both studies focused on sites within the UGB and the fact that the Government and Education designation allows for limited airport related industrial and commercial development as a matter of Metro Plan policy. Since adoption of the

master plan update does not include any land within the UGB, nor any change to existing land use designations (particularly no conversion of industrial or commercial use to another designation), no additional analysis is required under the implementing provisions of OAR 660-009-0010.

The current Eugene Airport Master Plan update is otherwise consistent with state policy governing local government airport regulations. ORS 836.600 states:

In recognition of the importance of the network of airports to the economy of the state and the safety and recreation of its citizens, the policy of the State of Oregon is to encourage and support the continued operation and vitality of Oregon's airports. Such encouragement and support extends to all commercial and recreational uses and activities described in ORS 836.616(2).

Because the Metro Plan, the ASP, and state policy acknowledge the airport's role in meeting the area's economic development objectives, the current master plan update is consistent with Goal 9, and approval will not affect Metro Plan compliance with this Goal.

Goal 10 - Housing: To provide for the housing needs of the citizens of the state.

Goal 10 requires that communities plan for and maintain an inventory of buildable residential land for needed housing units. The administrative rule for Statewide Planning Goal 10 (OAR 660 Division 8) states that "the mix and density of needed housing is determined in the housing needs projection. Sufficient buildable land shall be designated on the comprehensive plan map to satisfy housing needs by type and density range as determined in the housing needs projection. The local buildable lands inventory must document the amount of buildable land in each residential plan designation." The comprehensive plan map for the City is the Metro Plan land use diagram. The 1999 Eugene-Springfield Metropolitan Area Residential Lands and Housing Study (RLS) is acknowledged for compliance with the requirements of Goal 10 and its administrative rule.

The subject property was not included in the adopted RLS supply analysis, and the current Eugene Airport Master Plan update is consistent with Goal 10 because it does not change the status or designation of any land currently designated for residential use. Nonetheless, it is notable that the master plan update thoroughly considers two operational issues that relate to the compatibility of nearby housing or residential uses and the airport: safety and noise.

The FAA establishes safety rules regarding airspace safety within airport environs through Federal Aviation Regulation (FAR) Part 77. Part 77 establishes safety zones around runways to preclude the location of structures or other land uses that would create obstructions or pose undue hazards to air navigation. The two- and three-dimensional "imaginary surfaces" created in Part 77 are codified through requirements outlined in OAR 738-0070 and local codes (Lane Code and Eugene Code). Additional runway protection zones at and near the ends of runways are defined by the FAA relative to airport design criteria to assure safe and efficient airport operations.

These imaginary surfaces and runway protection zones are described and depicted in the master plan update. In the event of any extension of runway protection zones or changes to protected airspace as described in Chapter 6 of the master plan update, additional analysis is necessary to

determine the extent of any needed changes to local zoning and plan designations. Future property acquisition and land use designation changes may also be necessary to accommodate extended runway protection zones in the future. The master plan update recommends a detailed analysis of existing land use protection measures and what changes may be needed to accommodate future airport improvements, prior to implementation.

Another compatibility issue between the airport and residential development pertains to noise impacts. FAA regulations define acceptable noise exposure contours as measured in yearly day-night average sound levels (DNL). The FAA and other federal agencies establish 65 DNL as the threshold considered as a significant noise impact. Through OAR 340-035-0045, the State Department of Environmental Quality (DEQ) regards DNL between 60 and 55 as significant. DEQ establishes 55 DNL as a threshold for study of planning and zoning measures to limit noise exposure and recommends specific mitigation when noise impacts are greater than 65 DNL.

As depicted and described in Chapter 6 of the Plan Update, there is a significant decrease in the amount of single family housing parcels within the 55 DNL contour in 2026, with 117 less affected parcels than in 2006. Within the 65 DNL contour for 2006, there are four single family home parcels and one mobile home parcel. This number decreases to three home parcels in 2026. The reduction in the size of noise contours is primarily due to a change in military aircraft that will operate at the airport.

As such, adoption of the current master plan update is consistent with Goal 10 and will not affect Metro Plan compliance with the provision of needed housing pursuant to Goal 10.

Goal 11 - Public Facilities and Services: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

The Eugene Airport is currently served by the full range of urban services through previous exceptions allowing such services to be extended to the airport outside of the UGB and as provided for in the Metro Plan Public Facilities and Services Element (Policy G.26, Page III-G-12). Findings in the Metro Plan also confirm that the area of the airport designated Government and Education on the Metro Plan diagram receives municipal water, wastewater, fire and police services. Proposed improvements in this area would therefore be served by extension of currently available key urban services.

The City of Eugene provides wastewater sewer facilities to the airport as well as police and fire protection. The City's Airport Rescue and Firefighting station is supplemented by response as necessary from the Lane Rural Fire Protection District. Other services are provided by other local and regional utilities. Water service is provided by the Eugene Water and Electric Board (EWEB), and EWEB and the Emerald People's Utility District both provide electrical service to the airport. Telecommunications services are provided by Qwest and Lane Council of Governments. Natural gas is provided by Northwest Natural. On-site storm water runoff is controlled by piped and open channel drainage systems in the area.

Adoption of the master plan update will not require new services beyond those currently available

to serve airport and airport-related functions. Furthermore, extension of services for future development to meet the demands outlined in the master plan update is wholly consistent with the Metro Plan and prior City determinations.

In addition to the demonstration made through the above findings, an exception from Statewide Planning Goal 11 is not necessary based upon OAR 660-012-0065(1) and (3)(n). As previously described, these administrative rules preclude the need to take an exception to Goal 11 (and Goals 3, 4, and 14) if the proposed amendments do not permit service to a larger class of airplane. The current master plan update does not include any amendments to land use designation or proposed improvements through the planning horizon of 2026 that would permit service to a larger class of aircraft than is currently provided.

As such, adoption of the current master plan update is consistent with Goal 11 and will not affect Metro Plan compliance with the Goal.

Goal 12 - Transportation: To provide and encourage a safe, convenient and economic transportation system.

Goal 12 is implemented through the Transportation Planning Rule (TPR), as defined in Oregon Administrative Rule OAR 660-012-0000, *et seq.* The Eugene-Springfield Metropolitan Area Transportation Plan (TransPlan) provides the regional policy framework through which the TPR is implemented at the local level. The TPR states that when land use changes, including amendments to acknowledged comprehensive plans, will significantly affect an existing or planned transportation facility, the local government must put in place measures to assure that the allowed land uses are consistent with the function, capacity and performance standards of those transportation facilities.

As previously described, adoption of the current master plan update does not include any amendments to the Metro Plan, adopted land use designations or existing zoning. No changes are proposed to the functional classification of any roadways serving the airport. Adoption of the updated refinement plan is not anticipated to reduce any existing transportation facilities below accepted levels of service or otherwise significantly affect any transportation facilities as outlined in the TPR. Unlike the prior adoption of amendments to implement the 1999 Airport Master Plan, the current master plan does not include any new planned transportation facility projects or major roadway realignments requiring formal plan amendments.

Consistent with OAR 660-012-0065(3)(n), the proposed airport improvements recommended in the updated master plan do not permit service to a larger class of airplanes. As noted in Chapter 3 (Section 2.2. Design Standards), the Eugene Airport will continue to accommodate the Boeing 737-300 aircraft which has an FAA Airport Reference Code (ARC) of C-III. The current air carriers at the Eugene Airport use smaller regional jet aircraft, and although not currently as common as in the past, the Boeing 737 has long been used as the critical design aircraft. To the extent that future airport improvements may result in additional motor vehicle traffic impacts, County traffic impact analysis requirements will be addressed as development and permitting occurs.

As the current master plan update is consistent with OAR 660-012-0065 as well as other OARs

within the state Transportation Planning Rule and ORS, adoption is consistent with Goal 12 and will not affect Metro Plan compliance with the Goal.

Goal 13 - Energy Conservation: To conserve energy.

The current master plan update is consistent with Goal 13 because the proposed airport development will strengthen the substantial investments made in the existing airport, enhance the viability of air transportation for people and goods proximate to the state's second largest population center, and offer an alternative to potentially less fuel-efficient transportation modes.

The recommendations contained in the master plan update will support a vital airport serving the air cargo, air mail, and commercial and general aviation needs of Eugene, Springfield, Lane County and the greater Eugene Airport service area. In meeting the updated master plan's demand projections and facility capacity requirements, considerable energy will be conserved from export passengers and air freight to more distant airfields, including Portland International Airport. Using alternative airports to meet commercial and general aviation demands and transporting air freight, mail, and cargo to more distant airfields by other transportation modes (i.e., truck or rail) for shipping would result in potentially less efficient energy use, contrary to the Goal.

There are a number of past and future examples that further illustrate the airport's ongoing commitment to energy conservation consistent with this Goal. The airport has in the past and will continue to strive for ways to reduce energy consumption. As individual projects and improvements contemplated in the updated Eugene Airport Master Plan are implemented over time, new technology and opportunities for energy conservation are certainly considered to reduce cost and impact on the environment.

For example, construction of new facilities at the airport is required to follow Leadership in Energy and Environmental Design (LEED) guidelines consistent with City's adopted Sustainable Buildings Policy. This represents a significant local commitment to the use of "green building" techniques and energy conservation over time. It is also notable that the airport now has 767 taxiway lights that are LED. 475 of these were converted from 45 watt quartz lamps to 8 watt LED lights which will result in substantial energy savings. A cost benefit analysis is planned for replacing current terminal lighting from T-8 fluorescent lights with LED lights as well. The airport will also be rehabilitating the passenger breezeway with LED lights for energy conservation. If the FAA approves more airfield uses for LED lighting in the future, the airport will analyze the use and conduct a benefit analysis for implementing the technology further.

While Lane Transit District (LTD) bus service is not currently available to the airport, shuttle service is provided and the airport continues to explore possibilities that would support economically viable public (or shared private) transportation options to reduce non-renewable energy use and parking demand at the airport. All airport vehicles running diesel fuel are now operating off of Bio-5 or Bio-20 fuel and analysis will also be conducted on the feasibility of adding electric vehicle charging stations to the public parking lots in the future. Bicycle storage lockers are also available at the airport to accommodate and support alternative transportation options.

Based on these findings and the available information, adoption of the current master plan update

is consistent with Statewide Planning Goal 13 and will not affect Metro Plan compliance with the Goal.

Goal 14 - Urbanization: To provide for an orderly and efficient transition from rural to urban land use.

Goal 14 requires that comprehensive plans provide for orderly and efficient transition from rural to urban land uses, and the establishment of Urban Growth Boundaries (UGBs) around incorporated cities to assure compact and efficient urban growth inside the UGB and protection of rural resources outside of it.

Findings included in the Metro Plan Transportation Element (Page III-F-11) specifically note that the Eugene Airport is located outside the UGB to protect it from incompatible development as well as to reduce airport-related impacts on development within the UGB. It also notes that the area of airport designated government and education on the Metro Plan diagram receives municipal water, wastewater, fire, and police services. As previously discussed with respect to Goal 11, adoption of the master plan update will not require new urban services beyond those currently available to serve airport and airport-related functions. Furthermore, extension of services for future development to meet the demands outlined in the master plan update is wholly consistent with the Metro Plan and prior City determinations. Metro Plan Policy F.30 also supports the use of the Eugene Airport Master Plan as the guide for improvements of facilities and services at the airport.

As previously noted, OAR 660-012-0065(1) and (3)(n) preclude the need to take an exception to Goal 14 because the proposed improvements do not permit service to a larger class of airplanes.

As such, adoption of the current master plan update is consistent with Goal 14, and will not affect the Metro Plan compliance with the Goal.

Goal 15 - Willamette River Greenway: To protect, conserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River as the Willamette River Greenway.

The Eugene Airport is not within the boundaries of the Willamette River Greenway. Therefore, Statewide Planning Goal 15 is not relevant, and adoption of the master plan update will not affect Metro Plan compliance with Goal 15.

Goal 16 through 19 - Estuarine Resources, Coastal Shorelands, Beaches and Dunes, and Ocean Resources:

There are no coastal, ocean, estuarine, or beach and dune resources in proximity to the Eugene Airport. Therefore, these goals are not relevant and adoption of the master plan update will not affect compliance with Statewide Planning Goals 16 through 19.

Metro Plan Consistency -- EC 9.8424(1)(b) and LC 12.060

The Metro Plan serves as the area's comprehensive, policy framework plan. The current update to the Eugene Airport Master Plan replaces earlier versions as a refinement to the Metro Plan, and is found to be consistent with the policy framework already established by the Metro Plan. As previously discussed, adoption of the updated master plan is supported by a variety of Metro Plan policies including the following from the Transportation Element (Policy F.30, Page III-F-12):

Support public investment in the Eugene Airport as a regional facility and provide land use controls that limit incompatible development within the airport environs. Continue to use the Eugene Airport Master Plan as the guide for improvements of facilities and services at the airport.

As stated previously, unlike the adoption process for the 1999 Airport Master Plan, the current update does not include any amendments to the Metro Plan or other locally adopted plans such as the Eugene-Springfield Transportation System Plan (Transplan). No changes to existing land use designations, zoning, or adopted policy are proposed. The current update does include recommendations for a variety of airport improvements that will accommodate the Airport's needs into the future, some of which will require further research and analysis to determine the need and timing for any future Metro Plan amendments or zone changes in the vicinity. It is emphasized that any specific Metro Plan amendments or zone changes necessary to implement the recommendations of the updated Eugene Airport Master Plan will require additional public process and formal adoption by the affected jurisdiction(s) in the future.

Based on the available information and findings above, adoption of the current master plan update is consistent with the Metro Plan and will not otherwise make the Metro Plan internally inconsistent, as required.

Refinement Plan Criteria -- EC 9.8424(1)(c) and (2)

Adoption of the current Eugene Airport Master Plan update will entirely replace earlier adopted versions and there are no remaining portions of prior plans to be addressed under EC 9.8424(1)(c). The need for adoption of the updated refinement plan is based on federal and state and local requirements for coordinated aviation planning. Consistent with EC 9.8424(2)(b), new inventory information contained in the master plan update, concerning airport facilities and projected demand, supports the recommendations for future improvements to accommodate the Eugene Airport's needs through the planning horizon of 2026.



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ATTENTION: PLAN AMENDMENT SPECIALIST
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