



Josephine County, Oregon

Department of Airports

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Project Memorandum

DATE: December 13, 2010

TO: Board of County Commissioners

FROM: Alex Grossi 
Department of Airports

SUBJECT: Grants Pass and Illinois Valley Airport Master Plan/ALP

The Grants Pass Airport Master Plan and Airport Layout Plan, and the Illinois Valley Airport Layout Plan Drafts, have been reviewed by their respective Airport Advisory Boards. The Advisory Boards held public meetings where discussion of these documents were held. All changes, corrections, additions, or omissions are included in the attachment.

As part of this process I have reviewed and approved all the changes that have been recommended by the AAB's. I request that the BCC review and submit any additional comments or corrections to me so all changes can be incorporated into the engineer's final draft. When the final draft is completed it will be sent to the BCC, and the FAA for review and acceptance.

The primary objective of a Master Plan is to define the magnitude of change in aviation activity that can be expected over time. Given the cyclical nature of the economy, it is virtually impossible to predict with certainty, fluctuations in an airport's activity and needs, especially when looking 20 years into the future. However, trends can be identified and used for long-term growth potential. Master Plans serve only as a guideline and planning must remain flexible to respond to unforeseen aviation facility needs and the economic/external conditions giving rise to those needs.

In order for improvement projects to be eligible for Federal Airport Improvement Program Grants, all projects must appear on a FAA approved ALP. The ALP is a road map of a combination of projects to be selected as needed when the need arises. Each project would then go through the public comment requirement before proceeding. The airport needs and priorities (CIP list) are evaluated and prioritized annually to assure our most current needs are available.

GRANTS PASS AIRPORT MASTER PLAN/ALP CORRECTIONS

It has been requested by the Advisory Board to remove all references to Paradise Resort and change to "Destination Resort". Also, remove all references to "Pacific Aviation" and replace with "FBO". Change any references of timber industry as major industry. Replace with 'tourism' and 'retirement'

Page 1 – 3

- As per pavement design report change to 4 ½ inches

Page 1 – 5

- Remove circled words, "all, and some box hangars"
- Remove circled words and reference to end of their useful life
- Remove reference to purchase of fire truck
- Remove 'district'

Page 1 – 6

- Table 1 – A make modifications as noted

Page 1 – 7

- Remove 'very near' and replace Paradises Ranch with Destination Resort.

Page 1 – 8

- Repair as noted

Page 1 – 9

- Zoning map re-label 'rezoned lots'

Page 1 – 14

- Table 1 – C 08 – 09 replace with current data

Grants Pass

Page 2 – 5

- Replace 'immediate' with 'near'

Page 3 – 14

- Make number change

Page 3 – 15

- Table 3 – E repair as noted
- It is questioned, should the word 'is' be replaced with 'maybe' or is it the recommendation?

Page 5 – 1, 5-2, 5-4, 5-5

- Please make corrections to referenced sheet numbers to correspond with the drawings

Page 1-B, 1-G, 4-B, 4-E

- Please repair maps that include the incorrect spelling of "Flaming Rd" that are currently marked as "Fluming" – pg 1 – B, 1-G, 4 –B, 4-E

3 FACILITIES

Facilities at the Airport are divided into three categories: airfield, landside and support. Airfield facilities include areas such as runways, taxiways and aprons. Landside facilities include areas such as hangars, airport buildings and auto parking. Support facilities include emergency services, utilities, and miscellaneous facilities that do not logically fall into either airfield or landside facilities. **Exhibit 1B** shows the existing facilities at the Airport.

Airfield Facilities

Airfield facilities include pavements used for the movement of aircraft (*i.e.*, runways, taxiways, taxilanes, aprons). In fall of 2005, the Airport's Pavement Condition Index (PCI) was updated. The condition of the Airport pavements were rated on a scale of 0-100 with 0 being an unusable paved surface and 100 reflecting a just-constructed paved surface. Generally, ratings with a PCI above 70 require only preventative maintenance in the short term, while ratings between 40 and 70 require major rehabilitation and ratings less than 40 typically require reconstruction. **Exhibit 1C** depicts the pavement condition map for the Airport. At the time the PCI was updated, pavement sections were documented. Pavement sections describe how individual sections of pavement were constructed. In general, most pavements at the Airport consist of a seal coat, on top of two inches of asphalt, on top of five inches of a crushed aggregate base. **Exhibit 1D** provides a detailed graphic of the existing pavement sections at the Airport.

4 1/2"

Runway. The Airport has one paved runway, on the alignment of 12-30. The total pavement length is 4,001 feet. The runway is 75 feet wide. The runway pavement surface is asphalt and in the fall of 2005 was given a PCI rating of 70-85, which is considered very good. The pavement strength of the runway is rated for 19,000-pound Single Wheel Gear (SWG)¹ aircraft.

Taxiways & Taxilanes. Taxiways are constructed primarily to facilitate aircraft movements to and from the runway environment. Some taxiways are necessary to provide access between the aprons and the runways, whereas other taxiways become necessary to provide safe and efficient use of the airfield as airport activity increases. The taxiways do not have letter designations.

Runway 12-30 has a full-length parallel taxiway and five connector taxiways to support operations at the Airport. These connectors link the runway and parallel taxiway together. The parallel taxiway was relocated away from the runway, by an additional 40 feet, to meet the FAA design standards for an airport reference code (ARC) B-II in 2007.

From the parallel taxiway, there is access to the main tiedown area that is adjacent to the 1000-foot aiming markers of Runway 12. Multiple taxilanes lead to the hangar areas, located between hangar buildings. Taxiways and taxilanes are constructed of asphalt and have PCI ratings between 55 and 100, which is representative of pavements in good to excellent condition.

¹ Single Wheel Gear is the term used to describe aircraft with one wheel per strut. An aircraft's landing gear configuration and gross weight are critical components in airfield pavement design and are often used to characterize pavement strength.

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ars. There are 126 hangar buildings at the Airport – 92 T-hangars and 34 conventional hangars. All hangars are located on County-owned property. Some of the hangars are privately owned and managed, while the County maintains ownership of all T-hangars and some box hangars. One T-hangar is open-faced. The T-hangars, constructed of wood frame, are 29 to 49 years old and many are nearing the end of their useful life. With few exceptions, the private hangars are newer and in good condition.

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Additionally, there are eight commercial tenants at the Airport with numerous buildings.

It is not possible to label each hangar unit on Exhibit 1B, due to scaling. However, an inventory of each hangar is listed below in **Table 1A**, with the hangar's square footage, age and ownership shown. The hangar number referenced correlates with the Airport's records.

Other Buildings. Along the Brookside Boulevard, several buildings contain administrative, training and light industrial activity. To the east of the runway is the US Forest Service Interagency Fire Center. At the northwest section of the Airport property is the Southern Oregon Adolescent Study and Treatment Center (SOASTC) facility for young adults and the Josephine County Animal Control.

Aviation Services. A fixed based operator (FBO) is an individual or a business that offers aviation-related services such as flight instruction, aircraft rental, aircraft maintenance, hangar/tiedown storage and aircraft fueling to Airport users. Along Brookside Boulevard, at the Airport's main entrance is a FBO, Pacific Aviation Northwest. This building has a classroom, an area for flight planning, and restrooms. The Airport Director's office is located in this building. Self-serve fuel, both AvGas and Jet A, is available for purchase near the FBO building.

Airport Access & Vehicle Parking. Access to the Airport is via Exit 61, Merlin-Galice Road, from Interstate 5. Merlin-Galice Road accesses Brookside Boulevard, which borders the Airport's western perimeter.

Near the FBO, there are 20 marked automobile parking spaces. Hangar tenants typically park their vehicles in their hangars while flying. Onsite businesses provide employee and customer parking, with direct access from Brookside Boulevard.

Airport Support Facilities

Emergency Services. There are currently no Aircraft Rescue and Firefighting (ARFF) facilities available at the Airport; however, there are plans to purchase a fire truck. At this time, emergency services are provided by the Rural Metro Fire Protection District for structural and aircraft fires, and the Oregon Department of Forestry for vegetation fires. The Josephine County Sheriff's department provides law enforcement services.

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Table 1A. Hangar Inventory

	Hangar Number	Square Footage	Aircraft Capacity	Age (years)	County Owned	Hangar Number	Square Footage	Aircraft Capacity	Age (years)	County Owned
2020	11	2000	2 +	18	No	112	1314	1	16	No
	12	2000	2 +	18	No	113	1273	1	16	No
	13	2000	2 +	18	No	1457 114	1336	1	16	No
1840	14	2400	2 +	5	No	115	2400	2 +	8	No
2470	15	2400	2 +	15	No	116	2400	2 +	8	No
2936	16	2400	2 +	16	No	2571 117	2520	2 +	14	No
	17	2676	2 +	15	No	118	2400	2 +	16	No
1157	18	2090	1	25	No	2020 119	2400	2 +	16	No
	19	1045	1	25	No	2000 120	2400	2 +	5	No
	20	1045	1	25	No	121	2400	2 +	5	No
989	21	1000	1	25	No	122	2400	2 +	5	No
	22	1045	1	25	No	123	2400	2 +	5	No
1157	23	1045	1	25	No	124	2400	2 +	5	No
1430	77	1400	1	18	No	125	1500	1	5	No
1125	78	1055	1	19	No	126	1500	1	5	No
2540	79	2460	2 +	20	No	127	1500	1	5	No
1111	81	1096	1	20	No	128	1500	1	5	No
2540	82	2520	2 +	18	No	129	1500	1	5	No
	83	2520	2 +	18	No	130	1500	1	5	No
1550	84	1932	2 +	18	No	1071 131	1500	1	5	No
2021	85	1512	2 +	15	No	132	1500	1	5	No
1856	86	1833	2 +	19	No	133	1500	1	5	No
	87	1833	2 +	19	No	134	1500	1	5	No
	88	1833	2 +	19	No	135	1500	1	5	No
	89	1833	2 +	20	No	136	1500	1	5	No
1909	91	1071	2 +	15	No	137	1500	1	5	No
	92	1071	1	15	No	138	1500	1	5	No
1270	93	1071	1	15	No	2275 139	2000	2 +	5	No
	94	1091	1	15	No	2525 140	2500	2 +	5	Yes
	95	1071	1	15	No	141	2500	2 +	5	Yes
1909	96	1614	2 +	15	No	142	3500	3 +	5	Yes
	97	1071	1	15	No	143	3500	3 +	5	Yes
	98	1071	1	15	No	A1 - A6	6000	6	49	Yes
1270	99	1071	1	15	No	B1 - B6	6000	6	49	Yes
	100	1071	1	15	No	C1 - C6	6000	6	49	Yes
	101	640	1	15	No	D1 - D6	6000	6	39	Yes
	102	1071	1	15	No	E1 - E6	6000	6	39	Yes
	103	2122	1	16	No	F1 - F6	6000	6	39	Yes
	104	1364	1	16	No	G1 - G6	6000	6	29	Yes
1457	105	1364	1	16	No	H1 - H6	6000	6	29	Yes
	106	1426	1	16	No					
	107	1364	1	16	No					
	108	2122	1	16	No					
2697	109	1620	2 +	16	No					
	110	1336	1	16	No					
1457	111	1296	1	16	No					

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Total Aircraft Capacity: 126

NO

Airport Maintenance. The County provides airport maintenance. During winter operations, snow removal equipment is used to clear the runway, taxiway and other airport surfaces. Some maintenance equipment is stored onsite in the open-faced T-hangar.

Airport Fencing. The Airport has perimeter fencing. Near buildings, fencing is chainlink, and other areas are barbed wire. There is one automated, chainlink vehicle gate controlled by a punch type combination lock. Two open pedestrian access points are located near the FBO building.

Utilities. Utilities available at the Airport include electricity provided by Pacific Power and Light, natural gas provided by Avista Utilities, water provided by individual wells, and telephone provided by local franchise companies. A storm water detention pond is located on the north side of the airport property. Septic needs are met by individual septic tanks and drain field systems. However, there are plans to bring a sewer line to the Airport in the very near future, through an agreement with the Paradise Ranch Resort. Avista Utilities has a natural gas line along Brookside Boulevard. *destination* *REMOVE*

Airport Signage. Guidance signs to the Airport are located at the Interstate 5 exit and along Merlin-Galice Road. The Oregon Department of Transportation maintains the signs.

Other Support Facilities. Car rental is available at the Airport, through Enterprise Rental. Numerous lodging and dining establishments are available in the City of Grants Pass.

AIRSPACE

The FAA is responsible for the control and use of navigable airspace within the United States. Aircraft in flight, whether approaching or departing an airport, are subject to varying degrees of FAA control depending on location and meteorological conditions. These levels of control are called airspace classes. The alphabet characters A through G distinguish classes. Each class has its own unique shape and rules that govern such things as visibility minimums and cloud clearances.

The Airport is located in Class G airspace up to 700 feet above ground level (AGL). At 700 feet AGL, Class E airspace begins. Class G airspace is considered uncontrolled, in that pilots are not required to communicate with air traffic controllers; however, regulations regarding visibility minimums and cloud clearances still apply. Class E airspace is controlled and although there are no communication requirements while operating in the airspace for VFR, there are for IFR. Air traffic control traffic advisory services are available on a workload-permitting basis for VFR but always for IFR. The Airport's airspace is depicted on the Klamath Falls sectional chart (see **Exhibit 1E**). The Airport is located northwest of the Rogue Valley International-Medford Airport (24 nm) and south of the Roseburg Regional Airport (44 nm). Several private airports are also in the surrounding area.

LAND USE PLANNING AND ZONING

The following land use and zoning discussion focuses on four areas:

- On-airport zoning and land use.
- Surrounding area land uses and zoning.
- Protection of airport airspace to prevent hazards and land uses that may interfere with the safety of aircraft operations.



ownership/control of airport runway protection zones to enhance the safety of people and property on the ground.

State, Regional, County, and City land use regulations need consideration when reviewing existing land uses for airport compatibility and when planning for future development at and around an airport.

Federal regulations are also concerned with airspace protection (14 CFR Part 77) and noise levels, particularly for areas that fall within the 65-decibel (dBA) noise contour line. 14 CFR Part 77, *Objects Affecting Navigable Airspace*, establishes obstruction standards used to identify potential adverse effects to air navigation and notice standards for proposed construction. Imaginary surfaces are the basis for protecting the airspace around runways. There are five imaginary surfaces: primary, approach, transitional, horizontal and conical. Definitions of each imaginary surface will be discussed in Chapter Four, *Airport Layout Plans*. These surfaces should be kept clear of all obstructions.

FAA guidelines state that before FAA grants can be received the airport sponsor must provide assurances that appropriate actions have been (or will be) taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to those that are compatible with normal airport operations.

Existing On-Airport Zoning and Land Use

The Airport is a public use airport and is outside of the Grants Pass Urban Growth Boundary (UGB). Management of lands outside of the UGB fall within Josephine County's jurisdiction, which is the planning and building permit authority for the Airport.

The Airport's existing zoning classifications are found in the Josephine County Rural Land Development Code (RLDC) and are subject to change. An airport overlay zone, which mirrors 14 CFR Part 77 imaginary surfaces, is included in the development code.

Zoning at the Airport consists of mostly Community Light Industrial (CLI), with some Forest Commercial (FC) and Woodlot Resources (WR). These zones are depicted on **Exhibit 1F**.

^{RECENTLY} Currently Josephine County, through the Rogue Valley Council of Governments, ^{COMPLETED DOCS} is proposing to rezone the two parcels at the north end of the Airport currently zoned CR5 and WR to Rural Industrial (RI). A parcel farther north, zoned FC, is not under consideration for a zone change at this time. Definitions of these designations are shown in **Table 1A**, as defined in the RLDC.

Surrounding Area Land Use and Zoning

The Airport is surrounded primarily by light industrial, rural residential, agricultural and forest land uses. These uses are shown on Exhibit 1F. To the north of the Airport, most areas are zoned Forest Zones, CR5 or Farm Resource (FR); however, much of that land is part of a master planned golf course community, Paradise Ranch. To the east, zoning is mostly FR, CR5 and WR. Residential properties dominate the west side the Airport, with higher density zoning on



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ZONING MAP

1-9

	FAA Airport Master Record (Form 5010)	FAA Terminal Area Forecast
Air Taxi	400	300
General Aviation Local	6,500	9,868
General Aviation Itinerant	18,000	14,637
Military	100	100
Total	21,300	24,905

AIRPORT FINANCIAL DATA

The following subsections provide a brief summary of historical financial information for the Airport.

Airport Operating Revenues and Expenses

Table 1C shows the Airport's revenues and expenses for recent years. Operating revenues have usually exceeded costs. The Airport Manager reports no County general funds have been expended at the Airport.

Table 1C. Airport Revenues and Expenses

	2005-06 (actual)	2006-07 (actual)	2007-08 (actual)	2008-09 * (actual)
Operating Revenues				
Grants	\$ 64,099	\$ 120,250	\$ 1,062,363	\$ 4,754 49,020
Charges for Services	\$ 116,143	\$ 76,769	\$ 71,960	\$ 56,072 69,864
Sale of Materials	\$ 254,239	\$ 302,254	\$ 297,923	\$ 268,063 371,955
Rental Charges	\$ -	\$ 44,265	\$ 49,419	\$ 29,971 50,796
Interfund Subsidies	\$ 20,000	\$ -	\$ -	\$ -
Interest	\$ 4,909	\$ 6,009	\$ 8,110	\$ 1,174 1,940
Miscellaneous	\$ 9,571	\$ 2,969	\$ 8,170	\$ 8,440 9,485
Beginning Fund Balance	\$ 166,955	\$ -	\$ -	\$ 65,105
<i>Total Operating Revenues</i>	\$ 635,916	\$ 552,517	\$ 1,497,944	\$ 433,580 617,165
Operating Expenses				
Salaries and Wages	\$ (37,656)	\$ (38,710)	\$ (40,447)	\$ (20,663) 59,039
Taxes and Benefits	\$ (16,726)	\$ (17,774)	\$ (22,130)	\$ (8,403) 24,416
Materials and Services	\$ (432,614)	\$ (326,949)	\$ (348,083)	\$ (231,822) 356,136
Interfund Charges and Transfer	\$ -	\$ -	\$ -	\$ (103,971) 9,400
Capital Outlay	\$ (33,710)	\$ (142,926)	\$ (1,133,276)	\$ - 42,543
Contingency	\$ -	\$ -	\$ -	\$ -
<i>Total Operating Expenses</i>	\$ (520,705)	\$ (526,359)	\$ (1,543,935)	\$ (364,859) 491,534
Operating Income	\$ 115,211	\$ 26,158	\$ (45,990)	\$ 68,721 125,631

Source: Josephine County, March 2009.

* Partial data for 2008-09 (1/1/2008 through 1/31/2009)

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GA based aircraft (from 150 in 1999 to 184 in 2020). Over the forecast period, aircraft operations were forecasted using a ratio of operations per based aircraft, which rose from 340 to 375. Local and itinerant operations were projected to be split 50/50.

Pacific Aviation Northwest, the fixed base operator (FBO) at the Airport offers aircraft maintenance, flight training and aircraft management. Their fleet of owned and managed aircraft includes piston and turbine single- and multi-engine aircraft. Despite the slowing economic trends, the FBO reports increases in operations and active flight students. On the corporate side, they report an average of eight operations per week, with no seasonal fluctuations. Two of their corporate clients have been forced to base their aircraft at the Rogue Valley International Airport, due to inadequate runway length and weather reporting at Grants Pass. They report an average of 90 to 100 training flights per month, each accounting for approximately six aircraft operations, which equates to approximately 1,100 operations per month. For flight training, the busiest months occur in the late spring through late fall. Flight training declines in the winter due to the weather. **Table 2B**, which lists three years of fuel sales at the Airport since November 2005, supports these trends. Overall, total fuel sales are increasing, along with the percentage of jet fuel sales.

Paradise Ranch, a destination resort golfing community, is being developed adjacent to the Airport. The resort encompasses 320 acres, with lots for 200 single-family home sites, and is planned to open the summer of 2009. Paradise Ranch is working with airport management to allow access to the Airport, which will allow people to fly to the Airport and go directly to the golf course or to their home. All aviation facilities, like parking apron and hangars, would be located on airport property, so no through the fence agreements would be required. Paradise Ranch has received letters of support from potential clients that states their interest in basing and/or operating their private aircraft at the Airport for such uses. Based on interest from clients, Paradise Ranch will be constructing a parking apron and large aircraft hangar at the Airport. It is expected during the peak summer season that Paradise Ranch alone will generate 10 to 15 operations per day at the airport. It is also anticipated that around 10 aircraft will be based at the Airport in the immediate future. The types of aircraft potentially basing and/or operating at the Airport because of Paradise Ranch are Challenger 300, Gulfstream 550 and 600, Falcon 900EX and 700, Lear 35 and 45, and King Air models.

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tore more than one aircraft in one large enclosed structure. In order to determine T-hangars versus conventional hangars, the following assumptions were made:

ulti-engine aircraft will be stored in conventional hangars.

all single engine aircraft stored in hangars will be stored in conventional hangars, while the remaining single engine aircraft will be stored in T-hangars.

162 Applying these assumptions, nine additional T-hangars will be needed and ten additional conventional hangars will be needed by 2029. However, according to records there is an excess of six hangars (126 hangar units vs. 120 based aircraft) so additional hangars will not be needed until those are filled, which reduces the need for T-hangars to eight over the planning period. For space planning purposes, a ratio of 1,200 square feet per aircraft is used for T-hangar development, resulting in a total of 9,600 square feet of building area. Conventional hangar sizes generally range between 1,400 to 3,600 square feet per aircraft. For planning purposes at the Airport, a ratio of 2,500 square feet will be used, resulting in a need for 25,000 square feet of conventional hangar building area. **Table 3E** summarizes the hangar development needs for each milestone year.

Aprons and Aircraft Parking

Currently, there are 28 tiedown positions at the Airport. Five based aircraft (4%) are presently stored in tiedowns. As noted earlier, due to the desire for aircraft owners to store their aircraft in hangars, it has been assumed that the number of aircraft stored in tiedowns will decrease over the planning period to 3%. Using this ratio, five based aircraft will be stored in tiedowns by 2029.

The FAA has developed an approach for determining the number of tiedowns needed for itinerant aircraft operating at an airport. The following general methodology was taken from *Airport Design*, Appendix 5, Change 10 and is based on peak operations calculations:

1. Peak Day Operations (from Chapter Two)
2. Divide by 2 (50% of operations are departures)
3. Multiply by 50% (assumes 50% of the transient airplanes will be on the apron during the peak day)

Using this methodology, the Airport will need to have transient tiedown space for 39 aircraft by 2029. Combining based and transient tiedown needs, a total of 44 tiedown positions will be needed throughout the planning period. The FAA recommends using a ratio of 300 square yards per based aircraft tiedown, and 360 square yards per small transient aircraft tiedown. To account for a portion of the aircraft being ADG II, an estimate of 500 square yards per aircraft is used for transient aircraft. By 2029, the total area needed for both based aircraft and transient aircraft tiedowns is 21,000 square yards. The current apron is approximately 11,625 square yards and will be not be adequate over the planning period. The forecasted transient operations have a larger turboprop fleet than the based aircraft fleet and many turboprops and turbojets are ADG II aircraft. In addition, the critical aircraft (Beech King Air 200) is also an ADG II aircraft.

The OAP recommends Category III airports have designated cargo aprons. In the past, an

express shipping company operated into the Airport. If the company consider operations, having a cargo apron, separate from the general aviation apron, would enhance and operational efficiency. It is recommended the cargo apron be approximately 8 yards. This would allow for an ARC B-II aircraft taxi, turn and maneuver on the ramp as an area for the delivery truck/van to park.

Table 3E. Landside Facility Needs

	Existing Conditions 2009	2014	2019	2029
Based Aircraft	120	127	135	149
Total Hangar Units	126	127	130	144
Total T-Hangars	86	85	86	94
Total Square Feet	43,200	43,200	103,200	112,800
Total Conventional Hangars	34	36	38	44
Total Square Feet	90,000	90,000	95,000	110,000
Semi-Enclosed T-Hangars	6	6	6	6
Tiedown Positions	28	39	41	44
Based Aircraft Tiedowns		5	5	5
Transient Aircraft Tiedowns		34	36	39
Total Square Yards	11,625	18,500	19,500	21,000
Cargo Apron (square yards)	N/A	8,320	8,320	8,320

Source: W&H Pacific, 2009

Note: Square footages for hangars are building area only and do not include areas needed for taxiways between hangars.

Airport Access

Access to the Airport is via Brookside Boulevard. Approximately 20 automobile parking spaces are available near the FBO. Access to the Airport and automobile parking is sufficient for the planning period.

Aviation Services

As discussed in Chapter Two, FBO services are provided by Pacific Aviation Northwest. As aviation activity increases, it may be necessary for the FBO to offer 24-hour service as recommended in the OAP. Additionally, if demand warrants, a second FBO business may be attracted to the Airport (or Pacific Aviation may need to expand). The FBO may lease existing building(s) or prefer to lease land and construct a new facility. In the planning of the Airport's landside area, it is recommended that at least one acre be designated for a future FBO facility. One acre is the minimum area needed for an FBO building of about 10,000 square feet; a larger site would be needed if the FBO also has tiedowns and hangar space to lease and if the FBO is

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Chapter Five

AIRPORT LAYOUT PLAN

Airport Master Plan Update
Grants Pass Airport

The Airport Layout Plan (ALP) drawings are a pictorial representation and summarization of the efforts made in this planning process. The previous chapters supply the basis for the Airport's future airport layout as shown in the drawing set. In order for improvement projects to be eligible for Federal Airport Improvement Program Grants, the projects must appear on a Federal Aviation Administration (FAA)-approved ALP.

AIRPORT LAYOUT PLAN DRAWING SET

The following paragraphs describe the specific elements found on each sheet within the ALP drawing set.

Cover Sheet

The cover sheet shows a sheet index to the airport layout plan drawing set, and provides pertinent information such as the airport sponsor, airport name, grant number the project is funded through, location and vicinity maps, and date the plan was completed.

Airport Layout Plan Drawing (Sheet 1)

ALP #2

The airport layout plan depicts the current airport layout and proposed improvements to the Airport for the 20-year planning period and beyond. Descriptions of the improvements and costs over the next 20 years are included in Chapter Six, *Capital Improvement Plan*. The Master Plan Concept, as selected by the County in consultation with the Planning Advisory Committee

(PAC), was the basis for determining the proposed improvements at the Airport. The ALP is a development guide; the timing of development depends upon when it is needed and can be funded.

Runway approach visibility minimums, runway protection zones, runway object free area, runway safety area and other standard airport dimensions are shown in the plan and in the runway data tables. Other tables include an airport data table, buildings/facilities table, modifications to standards, and a non-standard conditions and disposition table. The wind rose depicts wind coverage for the runway alignment.

Airspace Plan Drawing (Sheet 2)

3

This drawing shows the Part 77 Imaginary Surfaces for the future layout of the Airport with a USGS topographic map as the background. Part 77 defines five distinct surfaces, each with a different size and shape. The dimensions of these surfaces are based on the type of runway and the type of approach ultimately planned for the Airport. Each imaginary surface and its dimension as it applies to the Airport are defined below and are depicted in **Exhibit 5A** for reference.

Primary Surface. The primary surface is rectangular, centered on the runway, extends 200 feet beyond each end of the runway, and has a width that varies according to airport-specific criteria. The elevation of the primary surface corresponds to the elevation of the nearest point of the runway centerline. The width of the primary surface of Runway 12-30 is 500 feet.

Approach Surface. The approach surface is centered on the extended runway centerline, starts at the end of the primary surface (200 feet beyond each end of the runway), and has a width equal to that of the primary surface. Approach surfaces slope upward and outward from the runway ends.

The ultimately planned approach surfaces at the Airport reflect nonprecision approaches to Runways 12 and 30.

The nonprecision instrument approach surface, with minimums not lower than 1 mile, to Runway 12 has an inner width of 500 feet extending outward 10,000 feet to an outer width of 3,500 feet at a slope of 34:1.

The Runway 30 approach surface, with minimums greater than $\frac{3}{4}$ mile, has an inner width of 500 feet extending for a horizontal distance of 10,000 feet to an outer width of 3,500 feet at a slope of 34:1.

Runway Protection Zones (RPZs) are not Part 77 surfaces, but mirror the inner portion of approach surfaces on the ground. Two RPZs are shown for the Runway 12 approach. The first RPZ has a dimension of 500 feet by 1,000 feet by 700 feet, which is the standard for an approach with minimums greater than $\frac{3}{4}$ mile. As stated in the Chapter Four, the County and PAC recommended a precision approach with minimums not lower than $\frac{3}{4}$ mile, which was later found infeasible due to various constraints. However, to protect the Airport for future approach

The Part 77 surfaces are the basis for protecting airspace around an airport; therefore, it is ideal to keep these surfaces clear of obstructions whenever possible. The FAA decides if any of the obstructions to Part 77 surfaces are hazardous to aviation. The obstruction data tables on Sheets 2 and 3 identify each obstruction and their location, along with the disposition to address the described obstruction.

The CIP prioritizes obstruction removal in the following manner: on-Airport obstructions, off-Airport obstructions within the approach surface, and off-Airport obstructions within the transitional surface. The negotiation and purchase of avigation easements will be necessary prior to the removal of any off-Airport obstructions.

Inner Portion of the Runway 12/30 Approach Surface Drawing (Sheet 3) - 4

This drawing provides a plan and profile view of the runway, the RPZs and approach surfaces. Obstructions within the approach and transitional surfaces are indicated in the profile view.

Airport Land Use Plan and Noise Contour Drawing (Sheet 4) 6+7

A land use plan has been developed for the Airport and the surrounding area. This plan includes the land uses on and around the Airport per the Josephine County Rural Land Development Code.

Land uses around airports should be compatible with airport operations. Aircraft noise is also a major concern. Land uses and their associated activities that are of greatest concern to airports include:

- Nearby Lighting
- Glare, Smoke and Dust Emissions
- Bird Attractions and Landfills
- Airspace Obstructions
- Electrical Interference
- Concentrations of People

Any of these activities can create safety concerns for airport users and people on the ground. They may also be affected by airport operations. The airport sponsor should work with the local land use agency(s) to ensure that land uses around the airport are compatible with airport operations.

Noise contours are being developed for the Airport, based on existing and forecasted aircraft operations that will be added to this drawing. Based on FAA and Oregon Department of Environmental Quality noise standards, no compatibility issues are expected, but will be confirmed.

Runway Departure Surfaces Plan (Sheet 5) - 8

The Runway Departure Surfaces Plan depicts the plan and profile view of the Runway 12/30 departure surface, which is applicable to all instrument runways with departure procedures. The Airport has a departure procedure in place to ensure obstacle clearance.

The departure surface at the Airport begins 200 feet from the end of the runway at a width of 400 feet. It extends outward for a length of 10,000 feet to an outer width of 1,900 feet. The designated obstacle clearance slope is 20:1.

Airport Property Map – Exhibit A (Sheet 6) N/A

This drawing provides a history of the County’s airport property acquisition by showing and listing all land transaction history.

The Consultant is currently working with the County to complete this exhibit.

TERMINAL AREA - #5

SHEET Don't
MATCH DRAW

Chapter Six

CAPITAL IMPROVEMENT PLAN

Airport Master Plan Update
Grants Pass Airport

Through the evaluation of the facility requirements, identification of the Master Plan Concept, and the development of the Airport Layout Plan, the improvements needed at the Grants Pass Airport over the next 20-year period have been determined. The Capital Improvement Plan (CIP) provides the basis for planning the funding of these improvements.

CAPITAL IMPROVEMENT PROJECTS

The CIP develops both the timeline for airport improvements and estimated costs for those improvements. The plan is divided into three phases: Phase I (2011-2016), Phase II (2017-2021), and Phase III (2022-2031).

The anticipated plan for the Airport follows. As many of these projects are demand-based (*i.e.*, hangar construction), the actual timing of construction is estimated. Funding for these projects has not yet been committed and the actual costs may vary depending upon final construction costs. The date of implementation may also vary due to funding availability.

Phase I (2011-2015)

Since Phase I represents the near-term future, which is more certain than the long-term future, Phase I development projects are identified by individual year, rather than a multi-year period. Projects in this phase include:

2011

- Pavement Maintenance Program (PMP)
- Runway Rehabilitation - complete

2012

- Conduct Environmental Assessment for Runway 12 extension¹
- Hangar Taxiway Development in the Triangle Area

2013

- Extend Runway 12 and parallel taxiway by 2,000 feet
- T-hangar Construction in the Triangle Area

2014

- Install Runway End Identifier Lights (REILs) and Precision Approach Path Indicators (PAPIs)
- PMP

2015

- Relocate beacon and SuperAWOS

Phase II (2016-2020)

Phase II projects during this phase include:

- Construct eastside parallel taxiway
- Relocate fuel farm²
- Construct FBO facility
- Install nonprecision approach with minimums greater than 3/4 mile
- Install taxiway edge lights and taxilane edge reflectors
- Install access road and parking area to provide entry to the triangle area
- T-hangar construction in the triangle area
- Install access road to the Corporate Development Reserve area
- Construct the helicopter operations area
- Construct conventional hangars
- PMP (2017 and 2020)

¹ The County believes the level of business jet activity to justify a longer runway is higher than can be documented now and that activity is growing at a higher rate than projected in Chapter Two, *Forecasts*. Additionally, when the economy begins to improve, developments at the Destination Resort will impact the Airport's operations and fleet mix. Consequently, the runway extension Environmental Assessment and runway extension projects are programmed in Phase I.

² Item is demand based. Timing of project contingent upon need.

Phase III (2021-2030)

Phase III is the last ten years of the planning period. Projects falling within this timeframe include:

- Realign Brookside Boulevard and expand parking area
- Update Airport Master Plan
- Expand Chipley Road and dead-end Denver Avenue
- Acquire land for Runway 12 runway protection zone (RPZ)
- PMP (2023, 2026, and 2029)

PROJECT COSTS

A list of improvements and costs over the next 20 years are included in **Table 6A**. All costs are estimated in 2009 dollars. Total project costs include construction, temporary flagging and signing, construction staking, testing, engineering, administration, and contingency, as applicable. Power utilities are included in all new hangar projects. No water service cost was added for the hangar developments. For hangar development, site preparation and taxilane access is assumed to be funded by the County, while private individuals would fund actual hangar construction. Private development costs, such as the costs associated with aviation-related business and aviation compatible commercial/industrial development, were not prepared as they can vary greatly and do not have a financial impact to the County.

FUNDING SOURCES

The Airport is part of the National Plan of Integrated Airport Systems (NPIAS), and is eligible to receive federal Airport Improvement Program (AIP) funding. Currently, general aviation airports such as Grants Pass receive \$150,000 in annual entitlements from the AIP and are eligible for discretionary AIP funding and state apportionment grants. Therefore, the majority of funding for airport improvement projects is likely to come from the Federal Aviation Administration (FAA). For projects eligible for FAA AIP funding, the FAA may fund up to 95% of the total project cost. The airport owner must contribute the remaining amount. AIP funding is available for most capital projects, but at this time it is difficult to receive funding for revenue-producing items such as hangars, since airside needs must be met first.

The Airport is designated as a Category III airport by the State of Oregon. As such, the Airport is eligible for the State-sponsored Financial Aid to Municipalities (FAM) discretionary grant and Pavement Maintenance Program (PMP). Under current legislation, FAM Grants are to be awarded annually for an amount not-to-exceed \$25,000 for projects including planning, development and capital improvement. However, the grant program is on hold until a time when the State can reinstitute the program. The PMP consists of annual funds of up to \$1,000,000 dedicated to preserving and maintaining pavements at eligible Oregon airports.

The State of Oregon currently has a grant program, *ConnectOregon*, which is on its third year of funding. The *ConnectOregon* initiative was developed to fund non-highway multi-modal transportation projects. If the *ConnectOregon* program continues, certain airport-related projects

may be eligible for application. Currently, there are two grant types available: one that matches up to 80% of a project and another that matches the 5% local amount needed for FAA AIP projects.

Other funding may come directly from the County or other sources such as economic development agencies or private entities.

Table 6A. Grants Pass Airport Proposed Capital Improvement Projects (2011 – 2031)

Project Description	Funding Source				
	Total Cost	Airport Owner (5%)	FAA* (95%)	ODA* (95%)	Private/Other
Phase I (2011-2015)					
2011					
Pavement Maintenance Program (PMP)	99,000	4,950	-	94,050	-
Runway Rehabilitation - Complete	-	-	-	-	-
2012					
Conduct Environmental Assessment for Runway 12 extension ³	240,000	12,000	228,000	-	-
Hangar Taxiway Development in the Triangle Area	1,127,000	56,350	22,800	-	-
2013					
Extend Runway 12 & parallel taxiway by 2,000'	2,804,000	140,200	2,663,800	-	-
T-hangar construction in the Triangle Area	1,300,000	-	-	-	1,300,000
2014					
Install REILs & PAPIs	244,000	12,200	231,800	-	-
PMP	99,000	4,950	-	94,050	-
2015					
Relocate beacon & SuperAWOS	75,000	3,750	71,250	-	-
Subtotal Phase I	\$ 5,988,000	\$ 234,400	\$ 3,217,650	\$ 188,100	\$ 1,300,000
Phase II (2016-2020)					
Construct eastside parallel taxiway	4,914,000	245,700	4,668,300	-	-
Relocate fuel farm	886,000	44,300	-	-	841,700
Construct FBO / Terminal facility	4,000,000	800,000	-	-	3,200,000
Instrument approach survey	50,000	2,500	47,500	-	-
Install taxiway edge lights & taxilane edge reflectors	659,000	32,950	626,050	-	-
Install access road & parking area to triangle area	859,000	27,700	526,300	-	-
T-hangar construction in the triangle area	2,500,000	37,128	705,432	-	4,187,440
Install access road to Corporate Development Reserve	904,000	45,200	858,800	-	-
Construct helicopter operations area	436,000	21,800	414,200	-	-
Construct conventional hangars	1,931,000	11,633	221,018	-	1,698,350
PMP (2017)	99,000	4,950	-	94,050	-
PMP (2020)	99,000	4,950	-	94,050	-
Subtotal Phase II	\$ 17,337,000	\$ 1,278,811	\$ 8,067,600	\$ 188,100	\$ 9,927,490
Phase III (2021-2030)					
Realign Brookside Boulevard & expand parking area	856,000	42,800	813,200	-	-
Update Airport Master Plan	250,000	12,500	237,500	-	-
Expand Chipley Road (dead end Denver Avenue)	245,000	12,250	232,750	-	-
Acquire land for Runway 12 RPZ	232,000	11,600	220,400	-	-
PMP (2023)	99,000	4,950	-	94,050	-
PMP (2026)	99,000	4,950	-	94,050	-
PMP (2029)	99,000	4,950	-	94,050	-
Subtotal Phase III	\$ 1,880,000	\$ 94,000	\$ 1,503,850	\$ 282,150	\$ -
Cumulative Total	\$ 25,205,000	\$ 1,607,211	\$ 12,789,100	\$ 658,350	\$ 11,227,490
<i>* Eligibility for FAA or ODA funding does not insure that funds will be available or granted for the project.</i>					

³ Unless justified by the FAA, other funding sources may be appropriate.
Grants Pass Airport