



MORROW COUNTY-LEXINGTON AIRPORT | AIRPORT MASTER PLAN



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PREPARED BY

CENTURY WEST ENGINEERING



1020 SW Emkay Drive #100 | Bend, OR 97239 | 541.322.8962



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Chapter 1 – Introduction & Project Overview





Chapter 1 – Introduction and Project Overview

Introduction

Morrow County prepared an updated Airport Master Plan for Lexington Airport (9S9) in cooperation with the Federal Aviation Administration (FAA) to address the airport’s needs for the next twenty years. The Airport Master Plan provides specific guidance in making the improvements necessary to maintain a safe and efficient airport that is economically, environmentally, and socially sustainable.



Study Purpose

The purpose of the Airport Master Plan is to define the current, short-term, and long-term needs of the airport through a comprehensive evaluation of facilities, conditions, and FAA airport planning and design standards. The study also addresses elements of local planning (land use, transportation, environmental, economic development, etc.) that have the potential of affecting the planning, development and operation of the airport. [FAA Advisory Circular 150/5070-6B Airport Master Plans](#) defines the specific requirements and evaluation methods established by FAA for the study.

Project Need

This project enables Morrow County to meet the FAA’s requirement to maintain an up-to-date plan. This project updates the 2001 Airport Layout Plan Report (Century West Engineering), which has provided the primary airport planning guidance for the airport over the last twelve years. As many of the previous planning recommendations and facility improvements have been implemented, there is a need to update the long-term planning for the airport. In addition to addressing changing local conditions, recently



updated FAA standards and current trends within the aviation industry also need to be reflected in updated airport planning. The updated Airport Master Plan and Airport Layout Plan (ALP) replaces the previous airport layout plan report and drawings, and meets the FAA's requirement to maintain current planning.

National Airport System

Lexington Airport is included in the National Plan of Integrated Airport Systems (NPIAS). Participation in the NPIAS is limited to public use airports that meet specific FAA activity criteria. NPIAS airports are eligible for federal funding of improvements through FAA programs such as the current Airport Improvement Program (AIP). There are more than 3,300 NPIAS airports, of which more than 75 percent are general aviation airports similar to Lexington. Lexington Airport and Boardman are the only NPIAS airports in Morrow County.

The FAA has recognized NPIAS airports as being vital to serving the public needs of air transportation. In doing so, the FAA recognizes that access to the nation's air transportation system is not limited to commercial air service. The FAA requires that all NPIAS airports periodically update their airport plans to maintain effective long-term planning.

State Airport System

Lexington Airport is identified as a "Category IV- Local General Aviation" public use airport in the current Oregon Aviation System Plan. As part of the updated planning evaluation, the master plan examined how the airport's existing facilities and services compare to the "minimum criteria" and "desired criteria" defined for Category IV airports in the [2007 Oregon Aviation Plan](#). This information was factored into the updated facility requirements assessment.

Project Funding

Funding for the Airport Master Plan Update was provided through an FAA Airport Improvement Program (AIP) grant (90%) with a local match (10%) provided by Morrow County. The AIP is a dedicated fund administered by FAA with the specific purpose of maintaining and improving the nation's public use airports. The AIP is funded exclusively through fees paid by users of general aviation and commercial aviation and the funds can only be for eligible aviation related projects at NPIAS airports.

Airport History

Previous airport planning documents indicate that the airport site has been in aviation use since early 1945 and has been owned and operated by Morrow County since 1960. The airport has been a base for agricultural spraying operators for many years, in addition to accommodating general aviation, business, medevac, and charter activity.



Airport Planning and Development

Formal airport planning for Lexington Airport began in 1983 with the first FAA-funded Airport Layout Plan Report and Environmental Assessment¹. Through local efforts, a series of airfield improvements were completed leading up to the FAA-funded construction and lighting of the current Runway 8/26 and the conversion of the former runway to a parallel taxiway in 1988. An airport master plan/airport layout plan update was completed in 2001 (Century West), which led to several airfield improvement projects completed in recent years:

2003 Automated Weather Observation System (AWOS) Project

2003 Multi-unit hangar constructed by County

2006 Airport Improvement Project

- Demo/Relocate Existing Parallel Taxiway (2,500'x35');
- Reconstruct Existing Diagonal Taxiway (900'x35');
- Construct a New Taxiway Adjacent to Future Ag Loading Area (900'x35');
- Reconstruct Apron Adjacent to Hangars (Approx. 14,000 SY);
- Construct a new Public Use PCC Ag Loading Apron (accommodates 2 aircraft);
- Fill/Grading in the Runway Safety Area (Rwy 26 end);
- Extend Power, Lighting, and Water Utilities to new Ag Loading Area;
- Relocate Lighted Wind Cone and New Segmented Circle;
- Install Taxiway Reflectors; and
- Install Pavement Underdrains for New Pavement.

2011 Runway 8/26 Reconstruction Project

- Pulverize asphalt surface and repave Runway 8/26 and turnout (Rwy 8 end);
- Install pavement underdrains;
- Re-grade and compact runway safety area;
- New runway pavement markings: centerline stripe, runway end numbers, and taxi lead-in stripes;

¹ Ted Soliday, Aviation Consultant



- New Medium Intensity Runway lighting (MIRL) system (edge lights, threshold lights, conduit, conductor, and counterpoise);
- New 2-box Precision Approach Path Indicators (PAPIs) for both runway ends; and
- Supplemental non-lighted wind cone.

The previous airport planning studies, the 2001 ALP drawings, as revised, airfield design drawings, historic and recent aerial photography, county GIS mapping, and local planning studies were used as primary information sources for preparing the updated Airport Master Plan and ALP.

Study Organization

Work conducted during the Airport Master Plan Update was documented in a series of draft chapters to address each of the key study elements. The chapters reflect the FAA-approved scope of work and the content meets all FAA technical requirements. The draft chapters and supporting documents were prepared over a period of approximately 18 months. Each draft chapter was reviewed locally and by the FAA and Oregon Department of Aviation (ODA) for consistency with federal and state regulations, policies, and standards. The draft chapters were available for public review and comment throughout the project.

The updated Lexington Airport Master Plan includes the following chapters:

- *Chapter 1 – Introduction and Project Overview*
- *Chapter 2 – Inventory of Existing Conditions*
- *Chapter 3 – Aviation Activity Forecasts*
- *Chapter 4 – Airport Facility Requirements*
- *Chapter 5 – Airport Development Alternatives*
- *Chapter 6 – Environmental Review*
- *Chapter 7 – Financial and Development Program*
- *Chapter 8 – Airport Layout Plan*
- *Chapter 9 – Airport Land Use Compatibility*
- *Chapter 10 – Planning for Compliance and Solid Waste Recycling Plan*



Local Citizen Participation

Morrow County is committed to an inclusive, transparent planning process and made all project work products available for public review. The public involvement element of the Airport Master Plan Update provided several ways for all interested individuals, organizations, and groups to participate in the project.

First, all draft work products developed during the project were available for public review and comment. Links to the documents were posted on the project webpage to allow for convenient access, review, and comment. Copies of the draft work products were available for public review and comment at the Morrow County Public Works Department throughout the project. Comment forms were available for both electronic and printed versions of the draft work products.

Second, a series of public meetings were held during the project to facilitate public participation. The project team presented information, provided updates on study progress, and identified upcoming decision points in a workshop format to facilitate discussion.

Third, a local planning advisory committee (PAC) was formed to assist the project team in reviewing draft technical working papers and to provide input into the planning process. The composition of the PAC provided an effective blend of airport users, neighbors, local business, local government representation, and other interests. Representatives from the FAA Seattle Airports District Office and the Oregon Department of Aviation (ODA) served as *ex officio* members of the PAC. The PAC met throughout the project, reviewed and commented on draft work products, discussed key project issues and provided local knowledge and expertise to the planning process.

The PAC meetings were open to the public and each meeting provided opportunities for public comment.



Summary

The FAA-defined airport master planning process requires a sequential, systematic approach which led to the selection of a preferred development option for the airport that was integrated into the Airport Layout Plan (ALP) and Airport Capital Improvement Program (ACIP). To meet this goal, the Airport Master Plan Update:

- *Provides an updated assessment of existing facilities and activity;*
- *Forecasts of airport activity (design aircraft, based aircraft, aircraft operations, etc.) for the current 20-year planning period;*
- *Examined previous planning recommendations (2001 Airport Layout Plan Report) as appropriate, to meet the current and projected airport facility needs, consistent with FAA airport design standards;*
- *Determined current and future facility requirements for both demand-driven development and conformance with FAA design standards;*
- *Provides consistency between airport planning and land use planning to promote maximum compatibility between the airport and surrounding areas;*
- *Prepared an updated Airport Layout Plan (ALP) drawing set to accurately reflect current conditions and master plan facility recommendations;*
- *Developed an Airport Capital Improvement Program (ACIP) that prioritizes improvements and estimates project development costs and funding eligibility for the 20-year planning period; and*
- *Evaluated airport sponsor compliance with FAA Airport Improvement Program (AIP) grant assurances.*



The preparation of this document may have been supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration as provided under Title 49, United States Code, section 47104. The contents do not necessarily reflect the official views or policy 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 therein nor does it indicate that the proposed development is environmentally acceptable with appropriate public laws.

Chapter 2 – Inventory of Existing Conditions





Chapter 2 – Inventory of Existing Conditions

The purpose of this chapter is to document the existing facilities and conditions at Lexington Airport (Airport Identifier Code: 9S9). The airport is owned and operated by Morrow County, Oregon.



This project replaces the 2001 Airport Layout Plan Update, which serves as a primary source for inventory data.¹ When available, more recent information from various data sources is used to illustrate current conditions. Updated site visits were conducted to inspect existing airfield facilities. The consultant worked closely with Morrow County staff to review the current facility and operational data maintained by the County. A summary of data sources used in the updated inventory is provided at the end of the chapter.

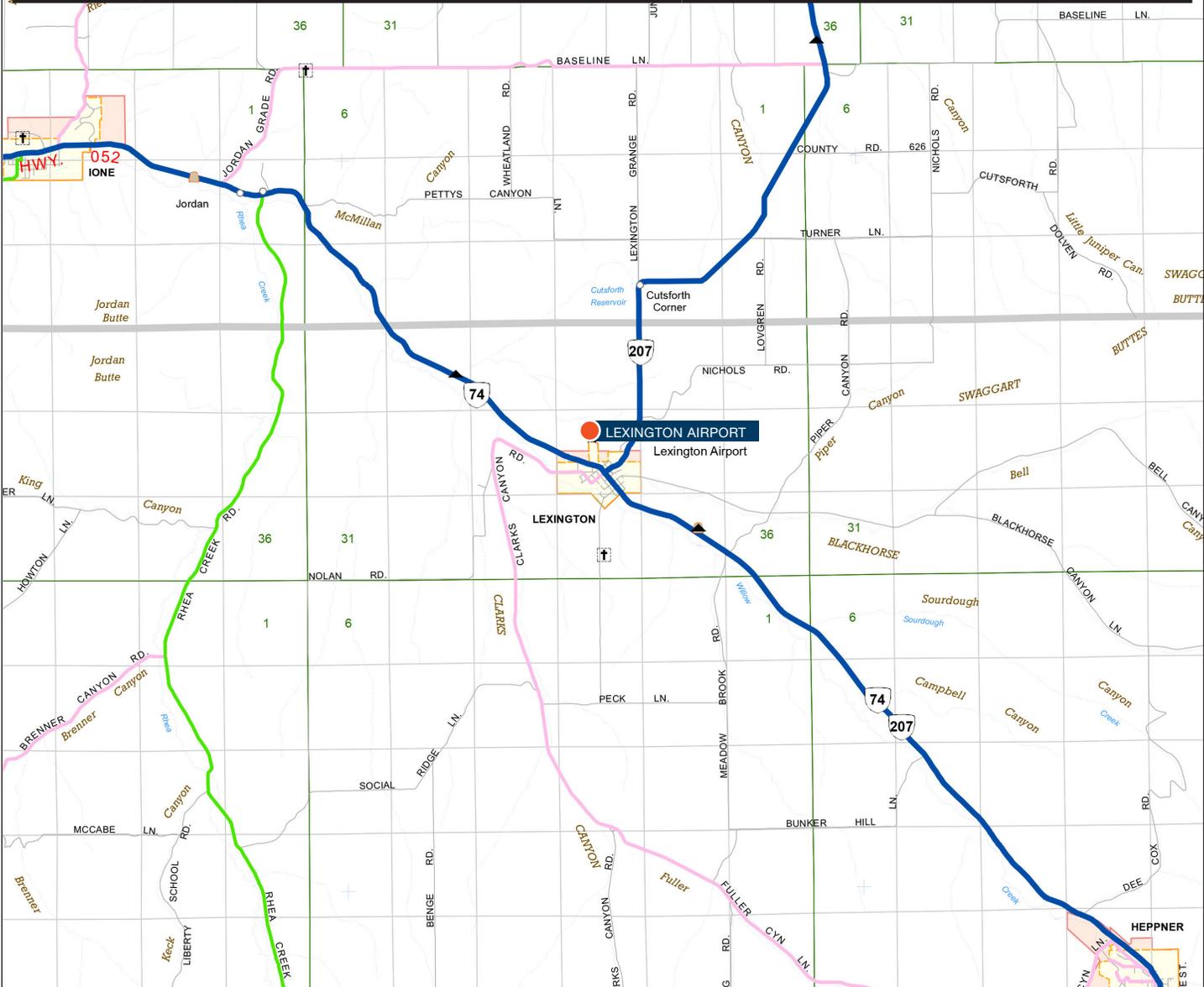
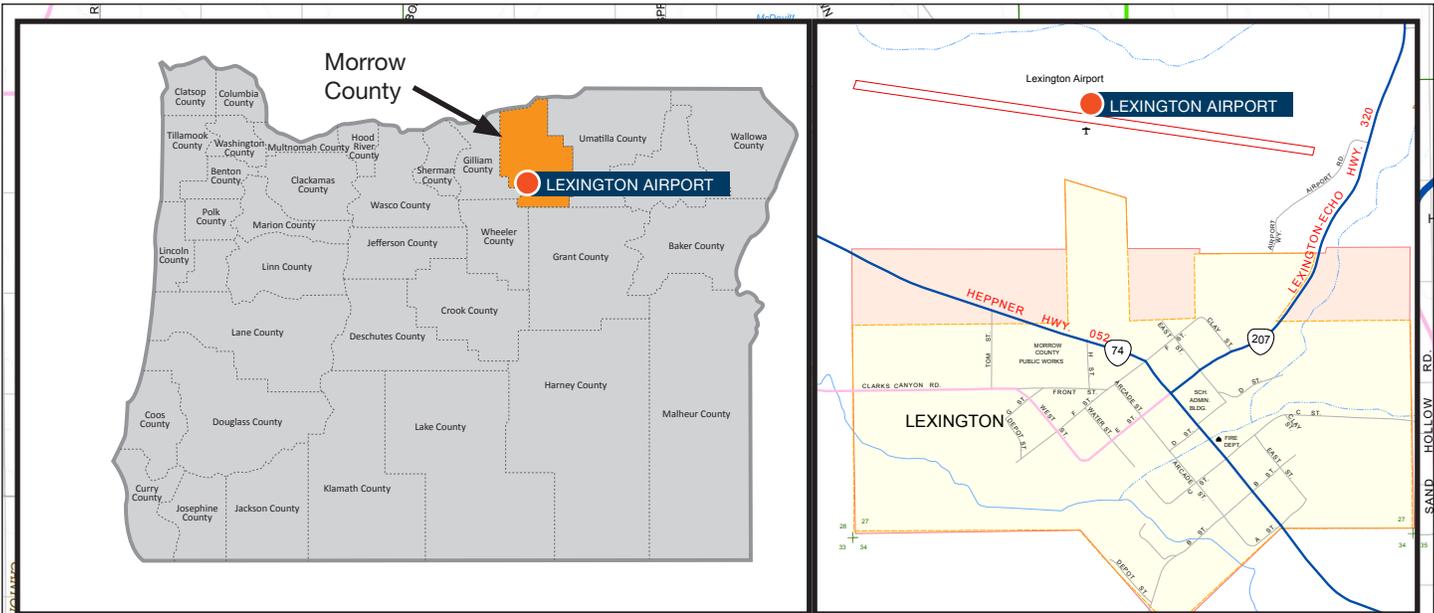
Airport Locale

Lexington is located in central Morrow County, between the Columbia River and the foothills of the Blue Mountains. Lexington is one of five incorporated cities in Morrow County and was originally established in 1885 as part of Umatilla County. Heppner is the County seat, located 9 miles southeast of Lexington. A location and vicinity map for Lexington Airport is provided in **Figure 2-1**.

The Town of Lexington consists of approximately 0.44 square miles within its incorporated area. Lexington Airport is located outside the Lexington city limits and Urban Growth Boundary (UGB), approximately a half mile north of the town center and immediately west of Oregon State Highway 207. The 2013 certified population estimate² for Lexington (incorporated area only) was 255; Morrow County was 11,425.

¹ Lexington Airport Layout Plan Report (Century West Engineering)

² Portland State University, Population Research Center, July 1, 2013.





Lexington is located at the junction of Oregon State Highways 207 and 74. Highway 207 runs from Mitchell to Cold Springs Junction and is part of the Blue Mountain Scenic Byway. Highway 74 extends southeast from U.S. Interstate 84 (I-84) at Heppner Junction, to Lexington and Heppner before heading east and connecting to U.S. Highway 395 in Umatilla County. Ione is located approximately 9 miles northwest and Heppner is 9 miles southeast of Lexington. Hermiston (38 miles) and Pendleton (60 miles) are located northeast of Lexington via Highway 207 and I-84. Portland is approximately 182 miles from Lexington via Highway 74 and I-84.

The Town of Lexington has a local volunteer fire department. Two rural fire districts (Ione and Heppner) serve the local area beyond the local fire department service area. Public safety and law enforcement is provided by the Morrow County Sheriff's Department. Pioneer Memorial Hospital, located in Heppner, is a Level IV trauma center. According to standards defined by the Oregon Health Authority, "The role of the *Level IV trauma center* is to provide resuscitation and stabilization of the severely injured adult or pediatric patient prior to transferring the patient to a higher level trauma system hospital." The nearest Level III trauma centers are located in Hermiston and Pendleton, with higher level facilities located in Bend, Portland/Vancouver and Boise. Lexington Airport is equipped to accommodate fixed wing and helicopter medevac flights for the region.

Climate

Moderate temperatures and low precipitation characterize the area. Although tabulated climate data is not available for Lexington, detailed data are available for Heppner (1893 to 2013) and limited data (precipitation only) are available for Ione (1935 to 2012).³ The overall weather patterns in the area are similar based on physical geography and the gradually rising elevations from the Columbia River heading south. Prevailing winds in Northern Oregon generally follow an east-west pattern, which is generally aligned with Runway 08/26.

Based on recorded climatic data, Heppner's average maximum temperature is 85.2 degrees Fahrenheit (July) and the average minimum temperature is 25.4 degrees (December). Heppner averages 13.49 inches of precipitation and 16.2 inches of snowfall annually. Approximately 32 percent of annual precipitation occurs during the three-month period of November, December and January. The year-round monthly average total is 1.1 inches, and the average during the summer months (June, July and August) is 0.51 inches. About 60 percent of annual snowfall in Heppner occurs in December and January. Ione averages 12.46 inches of precipitation and 15.8 inches of snowfall annually.

³ Western Regional Climate Center (Heppner, Oregon Station 353827)



Historical Aviation Activity

Lexington Airport accommodates a variety of aeronautical activity that includes locally-based agricultural aerial applicator operations, personal and business travel, recreational use, and medevac activity. The airport also accommodates limited military and charter activity. There are currently ten aircraft based at Lexington Airport.

The FAA aircraft registry currently lists 23 registered aircraft in Morrow County, with 21 aircraft owner addresses being in Lexington, Ione, or Heppner.⁴ The registered aircraft in Morrow County are all fixed wing and include single-engine piston (21), multi-engine piston (1), and single-engine turbine (1).

The **2007 Oregon Aviation Plan (OAP)** forecast update estimated 9 based aircraft and 2,829 annual aircraft operations (takeoffs and landings) at Lexington Airport in 2005. The **2001 Airport Layout Plan Report** utilized forecasts prepared in the **1997 Oregon Aviation System Plan (OASP)**. The OASP baseline estimate (1994) for Lexington Airport was 10 based aircraft and 2,500 aircraft operations.

Airfield

SITE CONFIGURATION

Lexington Airport consists of 109.8 acres of land that abuts the north edge of Lexington's incorporated area and is directly adjacent (west) to Highway 207. The airport is surrounded by agricultural lands to the west, north and east and the town center to the south. The airport property boundary closely follows the footprint of the developed facilities including the runway, which has an east-west alignment, and the primary development area to the south. Vehicle access to the airport is provided via Airport Road, also known as Tom Street, which connects with Highway 207 near the east end of the runway.

AIRFIELD FACILITIES

The airfield consists of a single runway, a partial-length parallel taxiway, three access taxiways, and aircraft aprons that accommodate agricultural aircraft loading, aircraft parking, aircraft fueling, and several hangars. All airfield pavements are asphalt. The runway is lighted and equipped to support day and night operations for visual and instrument weather conditions. All existing taxiways, structures and support facilities are located on the south side of the runway. The airport's automated weather observation system (AWOS) is located on the north side of runway. **Table 2-1** summarizes airport data. **Figure 2-2** depicts existing airfield facilities.

The published airfield elevation is 1,635 feet mean sea level (MSL) with an airport traffic pattern altitude 1,000 feet above ground level (AGL) (2,635 feet MSL).⁵ The airport utilizes standard left traffic patterns for

⁴ FAA Registry <http://registry.faa.gov>

⁵ FAA Airport/Facility Directory (A/FD)



both runway ends. Lexington Airport is a non-towered airport and pilots are responsible for communication and traffic monitoring through the use of the Unicom/common traffic advisory frequency (CTAF).

TABLE 2-1: AIRPORT DATA

AIRPORT NAME/DESIGNATION	LEXINGTON AIRPORT (9S9)
Airport Owner	Morrow County, Oregon
Date Established	July 1945
Federal Airport Category	National Plan of Integrated Airport Systems (NPIAS): General Aviation FAA Airport Reference Code: B-II (as depicted on 2001 ALP)
State Airport Category	Category IV – Local General Aviation Airport (Oregon Aviation Plan)
Airport Acreage	Approximately 109.8 acres (as indicated on 2015 Airport Property Plan (Exhibit “A”).
Airport Reference Point (ARP) Coordinates	N 45° 27.25' W 119° 41.42'
Airport Elevation	1,635 feet Mean Sea Level (MSL)
Airport Traffic Pattern Configuration/Altitude	Left Traffic (Rwy 08/26); 2,635 feet above mean sea level (MSL) / 1,000 feet above ground level (AGL)





Runway

RUNWAY 08/26

Runway 08/26 is 4,156 feet long and 75 feet wide, oriented on a 080-260 degree magnetic alignment. The runway was completely reconstructed in 2011 and is in excellent condition. The runway is equipped with edge lighting and visual approach aids. **Table 2-2** summarizes existing runway facilities.

The runway has visual markings (white) including runway designation numbers and centerline stripe. Taxiway lead-in lines (yellow) are located at the mid-runway exit taxiway. The runway markings were applied in the 2011 runway reconstruction project and are in very good condition.

The runway is served by a partial length south parallel taxiway with two exit taxiway connections located near mid-runway and at the east end. There is no direct taxiway access to the west end of the runway, although there is a small turnaround located at the Runway 8 threshold (south side) for aircraft back-taxiing on the runway (Runway 8 takeoffs) or rolling out past the mid-runway exit (Runway 26 landings).

TABLE 2-2: RUNWAY 08/26 DATA

Dimensions	4,156 x 75 feet; Aircraft Turnaround (130' x 85') located at west end of runway
Bearing	N 81° 43' W (True)
Effective Gradient	0.0126% (survey)
Surface/Condition	Asphalt Concrete (AC) / Excellent
Weight Bearing Capacity (WBC)	12,500 pounds – Single Wheel Landing Gear
Markings	Basic: Runway End Designation Numbers, Centerline Stripe (white); Taxiway Lead-in Lines (yellow)
Lighting	Runway Edge, Threshold
Signage	Guidance Signs
Wind Coverage	93.74% at 12mph (10.5 Kts). ⁶

Runway Pavement Strength

The runway, taxiways, taxilanes and apron pavements are designed to accommodate small general aviation aircraft. The asphalt pavements have a single wheel landing gear rating of 12,500 pounds, which is adequate to accommodate a wide range of aircraft used in general aviation.

⁶ National weather device-Lexington Airport (2009-2013 data)



Runway Wind Coverage

It is generally preferable for aircraft to land and takeoff directly into the wind, although varying wind conditions often require crosswind operations at airports. When wind conditions exceed the capabilities of a specific aircraft, use of a crosswind runway (when available) may occur. At airports with a single runway, occasional periods of strong crosswinds often limit operations until conditions improve.

The FAA-recommended planning standard states primary runways should be capable of accommodating at least 95 percent of wind conditions within the prescribed crosswind component. This component is based on a direct crosswind (90 degrees to the direction of flight) of 10.5 knots (12 miles per hour) for small aircraft and 13 knots (15 miles per hour) for larger general aviation aircraft. Aircraft are able to tolerate increasingly higher wind speeds as the crosswind angle is reduced and moves closer to the direction of flight.

An evaluation of wind data obtained by the automated weather observation system (installed in 2003) was performed as part of the master plan update. Wind data observations were collected and analyzed from 2009 to 2013. The data indicates that Runway 8/26 has 93.74 percent wind coverage based on a 12 miles per hour crosswind component. It appears Runway 8/26 is aligned with the most common wind patterns and reflects the practical limits of the airport site.

Taxiways/Taxilanes

The main apron, landside area, and all taxiways/taxilanes at Lexington Airport are located on the south side of the runway. The airport's taxiway system includes a partial-length parallel taxiway and three access taxiways connecting the main apron and parallel taxiway. The main apron has defined taxilanes to provide access to the apron, hangars, and fueling area. The major taxiways and apron taxilanes, excluding the eastern-most access taxiway were constructed/reconstructed and striped in 2007 and are in very good condition.

Table 2-3 summarizes existing taxiway facilities. **Figure 2-2**, presented earlier in the chapter, depicts the major taxiways on the airfield.

SOUTH PARALLEL TAXIWAY/RUNWAY EXITS

The parallel taxiway extends approximately 2,600 feet from the east end of the runway to near mid-runway. There is no direct taxiway access to the west end of the runway. Aircraft are required to back-taxi on the runway from the mid-runway exit to reach a turnaround adjacent to the Runway 8 threshold.

The parallel taxiway was constructed in 2007 (shifted south), replacing the original parallel taxiway to meet Airplane Design Group II standards, as recommended on the 2001 Airport Layout Plan. The parallel taxiway is 35 feet wide with a runway centerline-to-taxiway centerline separation of 240 feet.



The parallel taxiway has two 90-degree exit taxiways (40 feet wide) that connect to the runway (one at the Runway 26 end and one mid-runway). Both exit taxiways have aircraft hold lines (yellow) located 125 feet from runway centerline, which coincide with the outer edge of the runway obstacle free zone (OFZ) previously defined for small aircraft. The parallel taxiway and exit taxiways also have yellow centerline stripes.

An aircraft turnaround (approximately 130' x 85') is located at the Runway 8 threshold on the south side of the runway. The turnaround was reconstructed as part of the 2011 runway reconstruction project and is in excellent condition. For Runway 8 takeoffs, aircraft are required to taxi approximately 1,700 from the west end of the parallel taxiway to the turnaround at the end of the runway. The turnaround is also available for aircraft landing on Runway 26 that are unable to use the mid-runway exit.

ACCESS TAXIWAYS AND TAXILANES

Lexington Airport has a variety of taxiways and taxilanes serving landside facilities on the airfield.

Access Taxiways

The apron has three access taxiway connections to the eastern 1,500 feet of the parallel taxiway. The eastern-most access taxiway connects to the parallel taxiway at the Runway 26 threshold. The center and western-most access taxiway connections are located further down the parallel taxiway, about 450 and 1,400 feet west of the runway end. The access taxiways have yellow centerline stripes and lead-in striping (good condition) to the apron taxilane striping.

The access taxiways connect the landside areas to the runway-taxiway system and provide access within the landside area. The south end of the eastern access taxiway is adjacent to the aircraft fueling area and the western access taxiway serves the aerial applicator loading apron.

Apron/Hangar Taxilanes

The main apron has a primary east-west taxilane that provides access to hangars, aircraft tiedowns, and the fueling area. The taxilane is located on the north side of the multi-unit hangar on the west end of the main apron and extends along the northern edge of the apron. The taxilane connects to the three access taxiways connecting the apron and parallel taxiway. Other taxilanes provide access to adjacent hangars and tenant facilities on the apron.

A hangar owned by the local aerial applicator (Gar Aviation) is located off airport property and is served by a private paved taxiway that extends from the southeast corner of the main apron.



TABLE 2-3: TAXIWAY DATA (LEXINGTON AIRPORT)

TAXIWAY	DESCRIPTION	DIMENSIONS/CONFIGURATION
Parallel Taxiway	South Partial-Length Parallel Taxiway	2,565' x 35' with two exit taxiway connections (40' wide) to runway. Three exit taxiway connections to landside facilities. Asphalt surface w/ centerline stripe (yellow)
Exit Taxiways	2-90-degree Exit Taxiways for Runway 08/26 and Parallel Taxiway	185' x 40' Asphalt surface w/ centerline stripe; taxiway lead-in lines on runway at midfield; aircraft hold lines at each runway connection (125' from runway centerline). Exit Locations (distance from runway ends 08/26): West Exit Taxiway - (1,585'/2,565') East Exit Taxiway - (4,150'/0')
Access Taxiways	Taxiway connections (3) to main apron, AG apron and aircraft fueling.	East: 861' x 40' Center: 598' x 35' West: 1,160' x 35' Asphalt surface w/ centerline stripe
Apron Taxilanes	Taxilanes within the main apron.	Asphalt surface w/ centerline stripe
Hangar Taxiway (off airport)	A taxiway extending from the SE corner of main apron to an aircraft hangar.	Asphalt surface

Aircraft Aprons

The airport has a primary apron that includes aircraft tiedowns and provides access to adjacent hangars, fueling facilities, aerial applicator operations, and equipment storage. A second, smaller apron accommodates aerial applicator aircraft loading. **Table 2-4** summarizes the existing apron facilities at the airport.

The majority of the main apron was reconstructed in 2007 as part of the taxiway project and is in very good condition. Small sections of apron (and taxilanes) not included in the reconstruction project are in fair to poor condition. The main apron has a single row of aircraft tiedowns located in line with the east end of the multi-unit hangar on the apron that can accommodate approximately 3 to 4 small aircraft.



Parked aircraft are secured to two steel cables anchored to the apron. The apron taxilanes have yellow centerline stripes (good condition).

The AG aircraft loading apron is located adjacent to the western-most access taxiway (east side) and was constructed in 2007 (very good condition). The AG apron has lead-in lines to two loading positions and painted edge markings.

TABLE 2-4: AIRCRAFT APRONS (LEXINGTON AIRPORT)

<p>Main Apron</p>	<p>Approximately 600' x 250' (dimensions vary) Useable Apron Area: Approximately 10,200 square yards, plus additional taxilanes Current Use: Small airplane parking (3 to 4 positions), hangar frontage, and aircraft fueling</p>
<p>Agricultural Aircraft Loading Apron</p>	<p>100' x 50' (550 square yards), plus additional taxiway frontage. 2 aircraft loading positions Current Use: Agricultural aerial applicator aircraft loading</p>

Airport Lighting and Signage

The airfield lighting at Lexington Airport accommodates day-night operations in visual and instrument weather conditions. Existing lighting systems are described below and summarized in **Table 2-5**.

Airport Lighting: The airport has a rotating beacon mounted on a platform on the east side of the main apron. The beacon was replaced in 2014 with funding provided by a Connect Oregon grant. Rotating beacons are used to indicate the location of an airport to pilots at night or during reduced visibility. The beacon provides sequenced white and green flashing lights (representing a lighted land airport) that rotate 360 degrees to allow pilots to identify the airport from all directions from several miles.

One internally illuminated wind cone is located south of the runway near the east end in the segmented circle, between the center and west access taxiways. A supplemental wind cone (unlighted) is located on the north side of the runway, near the Runway 8 end.

Runway Lighting: Runway 08/26 has medium intensity runway edge lighting (MIRL) that was installed in 2011. The MIRL system includes white edge lights (with blue lights located near the exit taxiways) and runway threshold lights. The threshold lights consist of two sets of three fixtures near each corner of the runway ends. The fixtures have split lenses (green/red) indicating the beginning and end of the useable runway. The turnaround for Runway 8 is marked with blue taxiway edge reflectors.

Visual Guidance Indicators (VGI): VGIs are installed near the approach end of each runway and project light along a standard glide path leading to the runway end, with red and white colored lights indicating the aircraft's vertical position (above, below, or on glide path) relative to the defined glide path.



Runways 8 and 26 are equipped with precision approach path indicators (PAPI), the current FAA standard for general aviation runways. New PAPIs were installed in 2011.

Airfield Signage: The runway/taxiway signs are internally illuminated for night operations.

TABLE 2-5: TYPES OF AIRPORT LIGHTING USED AT LEXINGTON AIRPORT

CATEGORY	TYPE	CONDITION
Airport Lighting	Airport Rotating Beacon (white/green dual lens)	Excellent
Runway Lighting	Medium Intensity Runway Edge Lighting (MIRL) Threshold Lighting both runway ends Taxiway exit locator lights (blue fixtures) near exits to parallel taxiway	Excellent
Visual Guidance Indicators	2-Box PAPI (P2L) <ul style="list-style-type: none"> • Rwy 8: 3.0 degree glide path • Rwy 26: 3.5 degree glide path 	Excellent
Lighted Wind Cone	1 internally illuminated wind cone located in segmented circle. Supplemental wind cone (near Rwy 8 end) unlighted	Excellent
Taxiway Lighting	None (no reflectors)	--
Airfield Signage	2 Lumacurve Lighted Signs at Runway-Taxiway Exits	Excellent

The rotating beacon and the lighted wind cone operate on dusk-dawn automatic switches. The Runway 8/26 PAPI and MIRL are pilot-activated using the common traffic advisory frequency (CTAF) 122.9 MHz. All airfield lighting reportedly functions normally.

Agricultural Aircraft Facilities

Lexington Airport accommodates aerial applicator operations. Facilities include a designated loading apron located adjacent to the western access taxiway, lease areas located on the south side of main apron (hangars, equipment storage, fuel storage, etc.), and an off-airport hangar owned by Gar Aviation, a local aerial applicator based at Lexington Airport.

Airfield Pavement Condition

All airfield pavements at Lexington Airport are constructed of asphaltic concrete (AC) over a crushed aggregate base/subbase. According to available records, the original airfield pavements were constructed in 1967 and various sections were constructed, rehabilitated, or replaced over time. As noted earlier, with the exception of a section of the east exit taxiway, a section of the eastern access taxiway and small sections of the main apron, all other airfield pavements have been constructed or reconstructed since 2007 and are in very good or excellent condition. **Table 2-6** summarizes the typical section composition for each



airfield pavement area and the most recent pavement condition index (PCI) ratings based on inspections conducted in 2011 and 2006.

As part of the Oregon Aviation System Plan, the Pavement Evaluation/Maintenance Management Program was developed and applied to all Oregon general aviation airports. The evaluation takes into account historical pavement condition index (PCI) ratings, pavement features, and current conditions. The Pavement Condition Index (PCI) scale ranges from 0 to 100, with seven general condition categories ranging from “failed” to “good.” Through the use of MicroPAVER computer software, existing conditions data is entered and projections of future pavement condition and specific maintenance needs are approximated. For additional details, see *Oregon Aviation System Plan Pavement Evaluation/Maintenance Management Program* (2011) for Morrow County Airport.

TABLE 2-6: SUMMARY OF AIRFIELD PAVEMENT SECTIONS & PCI RATINGS (LEXINGTON)

AREA	CROSS SECTION	2011 PCI	2006 PCI
Runway and Aircraft Turnaround	2.5” AC (2011); 5” Aggregate Base (2011); 8” Aggregate Subbase (2011) Reconstruction included pulverization and re-use of old AC surface course	51 (100 after Reconstruction)	70
Parallel Taxiway and West Exit Taxiway	2” AC (2007); 6” Aggregate Base (2007); 8” Aggregate Subbase (2007)	100	100
East Exit Taxiway (north section)	1.5” AC (1989); Double BST (1985); 4” Aggregate Base (1985); 6”-10” Aggregate Subbase (1985)	47	74
East Exit Taxiway (section connects to parallel taxiway)	2” AC (2007); 6” Aggregate Base (2007); 8” Aggregate Subbase (2007)	100	100
West Access Taxiway	2” AC (2007); 6” Aggregate Base (2007); 8” Aggregate Subbase (2007)	97	100
Center Access Taxiway	2” AC (2007); 6” Aggregate Base (2007); 8” Aggregate Subbase (2007)	100	100
East Access Taxiway (main section)	1.5” AC (1989); Triple BST (1967); 3”-4” Aggregate Base (1967)	63	90
East Exit Taxiway (south section)	2” AC Overlay (2007); Fog Seal (2000); 1.5” AC (1989); Triple BST (1967); 3”-4” Aggregate Base (1967)	56	NR



Main Apron	South Section: Overlay 2” AC (2007); Triple BST (1967); 2”-3” Aggregate Base (1967)	100	13
	North Section: Overlay 2” AC (2007); 3” Cold Mixed AC (1995); Triple BST (1967); 3”-4” Aggregate Base (1967)	99	25
	North Section (east of Center Access Taxiway): 2” AC (2007); 6” Aggregate Base (2007); 8” Aggregate Subbase (2007)	100	100
	Southeast corner: Triple BST (1967); 2”-3” Aggregate Base (1967)	22	NR
	West Section (Taxilane): 2” AC (2007); 6” Aggregate Base (2007); 8” Aggregate Subbase (2007)	97	100
	Fuel Area: 2” AC Overlay (2007); 1.5” AC Overlay (1989); 4” Aggregate Base (1989); 8” Aggregate Subbase (1989)	61	75
	Agriculture Loading Apron	2” AC (2007); 4” Aggregate Base (2007); 6” Aggregate Subbase (2007)	100

NR – Not Rated. Pavement was not rated during inspection.

As noted earlier, the majority of airfield pavements at Lexington Airport have been constructed new, reconstructed, or rehabilitated since 2006. These pavements were all rated “good” in 2011, with PCI ratings of 97 to 100. The runway was reconstructed after the 2011 PCI inspection, which effectively increased its PCI from 51 to 100. The remaining sections of pavement that have not been rehabilitated in recent years include the eastern-most access taxiway (rated “fair” in 2011); a small section at the southeast corner of the main apron (rated “serious” in 2011); the apron adjacent to the AVGAS fuel tank (rated “fair” in 2011); and a short taxilane section located near the northeast corner of the multi-unit hangar (rated “satisfactory” in 2011). These pavement sections will likely require rehabilitation or reconstruction during the current 20-year planning period. The rate of pavement deterioration documented between the 2006 and 2011 PCI inspections for the older pavement sections appears to be consistent based on local conditions and type of aircraft use. The County conducts periodic vegetation control, crackfilling, sealcoating, and repainting (markings) of airfield pavements.

Landside Facilities

HANGARS AND AIRPORT BUILDINGS

Lexington Airport accommodates a variety of aviation-related buildings including three aircraft hangars and an office/terminal on airport property. A private hangar and residence are located off airport property, with existing through-the-fence (TTF) access. **Table 2-7** summarizes existing airport hangars and other airport buildings. **Figure 2-2**, presented earlier in this chapter, depicts the existing buildings on the airport.



TABLE 2-7: BUILDINGS AT LEXINGTON AIRPORT

BUILDING		EXISTING USE
1.	Multi-Unit Hangar (7-units)	Aircraft storage
2.	Conventional Hangar	Aircraft storage
3.	Quonset Hangar	Aircraft and equipment storage
4.	Office/Terminal Building	Pilot/Passenger Services; Restroom
5.	Fuel Pump House	Aircraft Fueling
6.	Conventional Hangar (off airport; TTF)	AG aircraft storage and maintenance; Commercial Use
7.	Residence (off airport; TTF)	Residence

Vehicle Access and Parking

VEHICLE ACCESS

Surface access to Lexington Airport is provided via Airport Road, also known as Tom Street, which enters the airport from Highway 207, near the east end of the runway. Airport Road provides access to the terminal area facilities and adjacent development. Portions of Airport Road and Highway 207 are located within the runway protection zone (RPZ) and beneath the approach surface for Runway 26. Vehicles travelling on these roads do not penetrate the runway approach due to a significant drop in terrain elevation beyond the east end of the runway.

VEHICLE PARKING

The terminal area has a gravel surfaced parking area with space for approximately 10 to 15 vehicles. Additional unpaved areas for vehicle parking space are available adjacent to individual hangars.

Airspace and Navigational Aids

Lexington Airport operates under both visual flight rules (VFR) and instrument flight rules (IFR) conditions with two published nonprecision instrument approaches.

AIRSPACE CLASSIFICATIONS

Airspace within the United States is classified by the FAA as “controlled” or “uncontrolled” with altitudes extending from the surface upward to 60,000 feet above mean sea level (MSL). Controlled airspace classifications include Class A, B, C, D, and E. Class G airspace is uncontrolled.



Aircraft operating within controlled airspace are subject to varying levels of positive air traffic control that are unique to each airspace classification. Requirements to operate within controlled airspace vary, with the most stringent requirements associated with very large commercial airports in high traffic areas. Uncontrolled airspace is typically found in remote areas or is limited to a 700 or 1,200-foot AGL layer above the surface and below controlled airspace. **Figure 2-3** illustrates and describes the characteristics of the airspace classifications defined by the FAA.

LOCAL AREA AIRSPACE STRUCTURE

Figure 2-4 depicts the airspace and airports in the vicinity of Lexington Airport, as identified on the FAA Seattle Sectional Aeronautical Chart. Lexington Airport is located in an area of Class E airspace that begins 700 feet above the ground surface. Class G airspace extends upward from the ground surface to the floor of the Class E airspace over the airport. The local Class E airspace consists of a 7-nautical mile radius surrounding the airport.

Radio communication is not required for visual flight rules (VFR) operations in Class E airspace, although pilots are encouraged to use the common traffic advisory frequency (CTAF) when operating at the airport. Aircraft are required to obtain an air traffic control (ATC) clearance prior to operating in Class E airspace during instrument flight rules (IFR).

Large areas of Class E airspace associated with enroute instrument airways and transition to terminal airspace extend in all directions beyond the Class E airspace associated with local area airports. This category of Class E airspace has a floor established at 700 feet MSL.

The nearest low altitude enroute instrument airway (Victor 112 – V112) passes approximately 5 nautical miles north of the airport. V112 is an airway that extends between the Pendleton and Klickitat VORs. The minimum enroute altitude (MEA) for the section of the airway passing nearest the airport is 4,000 feet MSL. Victor 182 (V182) passes approximately 6 miles south of the airport, with an MEA of 5,300 feet MSL. Victor 536 (V536) passes approximately 14 miles southeast of the airport, with an MEA of 6,000 feet MSL (eastbound) and 10,000 feet MSL (westbound). V536 and V182 intersect 5 nautical miles to the southwest of the airport.

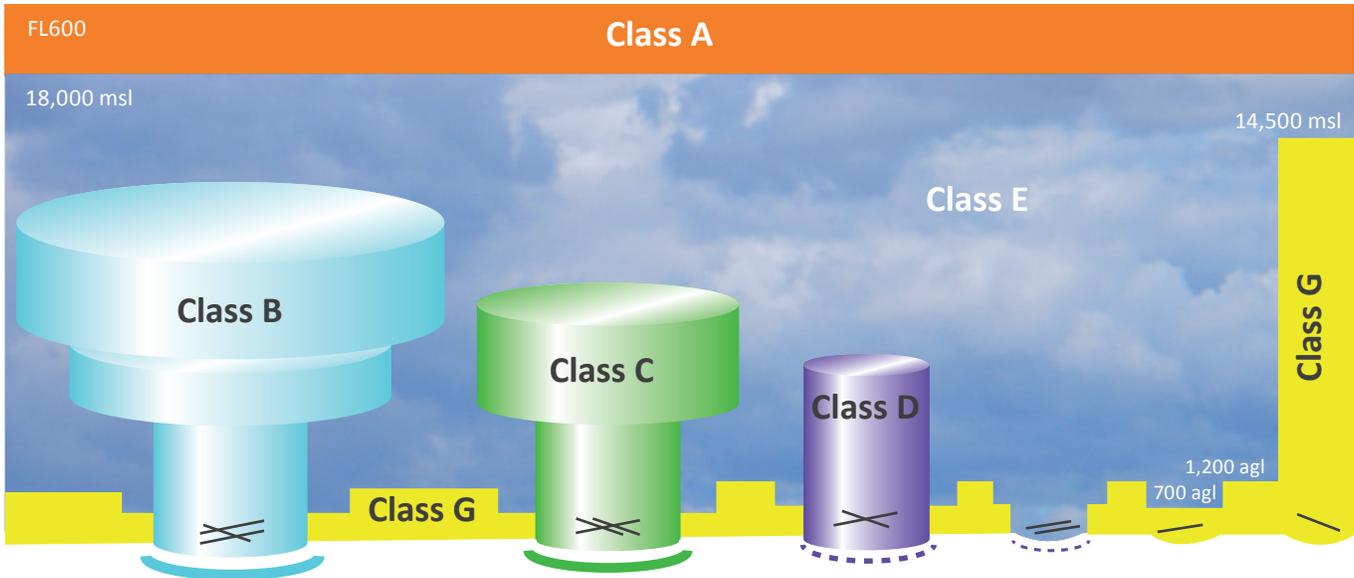
The local airport traffic pattern altitude is 1,000 feet above ground level (AGL) (2,635' MSL) with standard left traffic on Runway 8 and 26. The traffic patterns are located on the north and south sides of the runway, as depicted in **Figure 2-5**. Local airport operations and flight activity is not directly affected by the enroute airspace due to the minimum enroute altitudes that are well above the local airport traffic pattern altitude.



SPECIAL USE AIRSPACE

The nearest Military Operations Area (MOA) is the Boardman MOA (southern border: 10 miles north). The floor of the Boardman MOA begins at 4,000 feet MSL (extends upward to 18,000 MSL) and the published in use time are 0730 to 2359, Monday through Friday. MOAs are designated to segregate VFR and IFR traffic from military operations. When a MOA is active, IFR traffic may be cleared through the area when air traffic control can ensure IFR separation; otherwise traffic will be rerouted. Although VFR operations are not restricted in an MOA, pilots are advised to exercise extreme caution while flying within, near, or below an active MOA. Prior to entering an active MOA, pilots are encouraged to contact the controlling agency for traffic advisories due to the frequently changing status of these areas.

Within the Boardman MOA are separate Restricted Areas (R-5701 and R-5706). R-5701 extends upward from the surface to 6,000 or 10,000 feet MSL; R-5706 is located over the Boardman Airport and extends from 3,500 to 10,000 feet MSL. Access to restricted areas is controlled by the Seattle Center in order to segregate nonparticipating aircraft from hazardous activities. The Umatilla Chemical Weapons Depot, located 22 nautical miles NNE, is identified as an area of national security significance and pilots are requested to avoid flight at or below 5,000 feet MSL over the area.



COMMUNICATION REQUIREMENTS AND WEATHER MINIMUMS

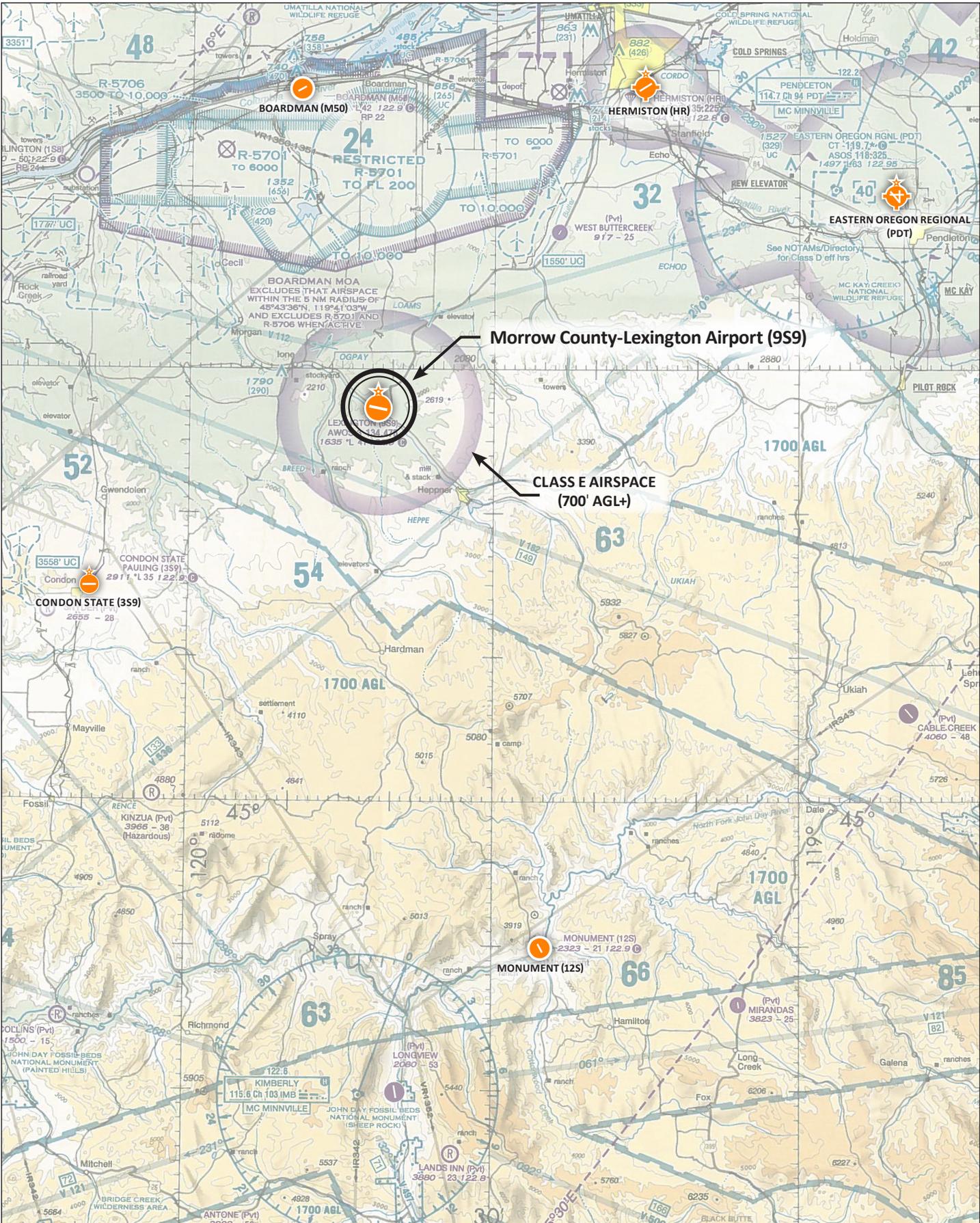
	Class A	Class B	Class C	Class D	Class E	Class G
Airspace Class Definition	Generally airspace above 18,000 feet MSL up to and including FL 600.	Generally multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports	Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control	Generally airspace from the surface to 2,500 feet AGL surrounding towered airports	Generally controlled airspace that is not Class A, Class B, Class C, or Class D	Generally uncontrolled airspace that is not Class A, Class B, Class C, Class D, or Class E
Minimum Pilot Qualifications	Instrument Rating	Student*	Student*	Student*	Student*	Student*
Entry Requirements	IFR: ATC Clearance VFR: Operations Prohibited	ATC Clearance	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: None	None
VFR Visibility Below 10,000 msl**	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	3 Statute Miles	Day: 1 Statute Mile Night: 3 Statute Miles
VFR Cloud Clearance Below 10,000 msl***	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal***
VFR Visibility 10,000 msl and Above**	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	5 Statute Miles	5 Statute Miles
VFR Cloud Clearance 10,000 msl and Above	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	1,000 Below 1,000 Above 1 Statute Mile Horizontal	1,000 Below 1,000 Above 1 Statute Mile Horizontal

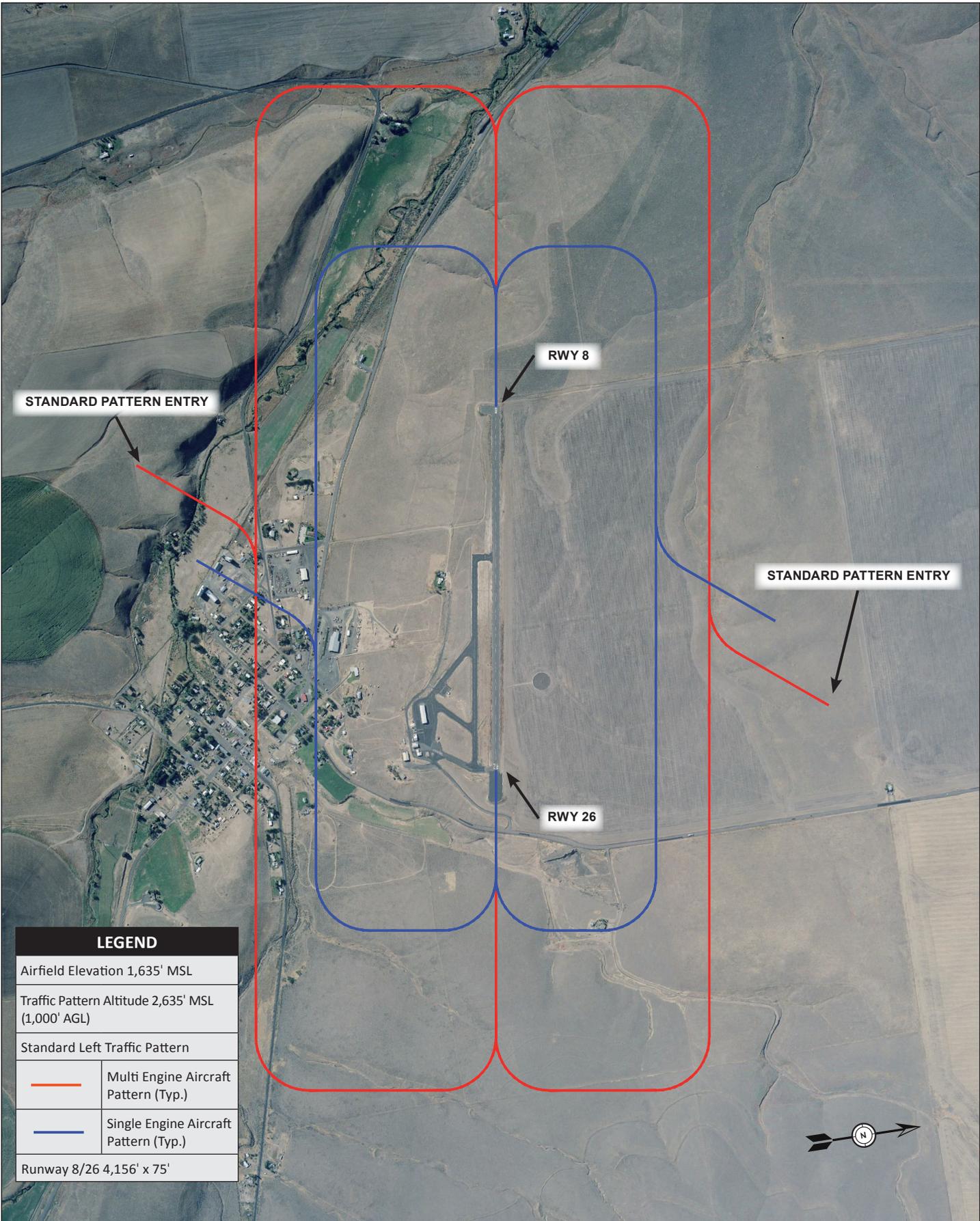
*Prior to operating within Class B, C or D airspace (or Class E airspace with an operating control tower), student, sport, and recreational pilots must meet the applicable FAR Part 61 training and endorsement requirements. Solo student, sport, and recreational pilot operations are prohibited at those airports listed in FAR Part 91, appendix D, section 4.

**Student pilot operations require at least 3 statute miles visibility during the day and 5 statute miles visibility at night.

***Class G VFR cloud clearance at 1,200 agl and below (day); clear of clouds.







LEGEND	
Airfield Elevation 1,635' MSL	
Traffic Pattern Altitude 2,635' MSL (1,000' AGL)	
Standard Left Traffic Pattern	
	Multi Engine Aircraft Pattern (Typ.)
	Single Engine Aircraft Pattern (Typ.)
Runway 8/26 4,156' x 75'	





Navigational Aids/Weather Observation

There are no electronic navigational aids located on the airport. The instrument approach procedures for Lexington Airport utilize satellite navigation global positioning system (GPS) technology that does not require any ground based equipment. **Table 2-8** summarizes existing navigational aids and related items.

The nearest ground based navigational aid in the area is the Pendleton VORTAC⁷ located 34.9 nautical miles east. Eastern Oregon Regional Airport in Pendleton also has an instrument landing system (ILS) localizer and glideslope for Runway 25. The Kimberly VORTAC is located 48 nautical miles south; the Klickitat VOR is located 61 nautical miles west-northwest.

Lexington Airport has on-site weather observation capabilities, with an Automated Weather Observation System (AWOS-3). The AWOS provides 24-hour weather observation that includes cloud ceiling, visibility, temperature, dew point, wind direction, wind speed, altimeter setting, and density altitude (airfield elevation corrected for temperature). The AWOS is located on the north side of the runway, off airport property.

TABLE 2-8: NAVIGATIONAL AIDS AND RELATED ITEMS

TYPE	FACILITIES
Electronic Navigational Aids	Pendleton VORTAC (PDT) 114.7 MHz (35 NM E) Pendleton ILS (I-PDT) 110.3 MHz Chan 94 (38 NM E) Klickitat VOR/DME (LTJ) 112.3 MHz (62 NM WNW) Kimberly VORTAC (IMB) 115.6 MHz (61 NM S)
Weather Observation	AWOS-3 (on Field) 134.475 MHz
Communication	Unicom/Common Traffic Advisory Frequency (CTAF)(122.9 MHz)

Instrument Procedures

Instrument approach and departure procedures are developed by the FAA using electronic navigational aids to guide aircraft through a series of prescribed maneuvers in and out of an airport’s terminal airspace. The procedures are designed to enable continued airport operation during instrument meteorological conditions (IMC), but are also used during visual conditions, particularly in conjunction with an instrument flight plan. The capabilities of each instrument approach are defined by the technical performance of the procedure platform (ground based navigational aids or satellite navigational aids) and the presence of nearby obstructions, which may affect the cloud ceiling and visibility minimums for the approach, and the routing for both the approach and missed

⁷ Very high frequency Omnidirectional Radio range (VOR) combined with UHF frequencies (Tactical Air Navigation – TACAN)



approach procedure segments. The aircraft approach speed and corresponding descent rate may also affect approach minimums for different types of aircraft.

Lexington Airport currently has two published nonprecision instrument approaches. Both instrument approaches are authorized for aircraft approach categories A through D, which includes all aircraft otherwise capable of operating on the runway.

The RNAV GPS approach to Runway 8 is classified as a “straight-in” approach with an inbound course of 82 degrees, which is closely aligned with Runway 8 (80 degrees). The procedure has a minimum descent altitude (MDA) of 2,120 feet MSL (502 feet above ground level) for Categories A-D aircraft. The minimum visibility required for the approach ranges from 1-mile for Category A, B and C aircraft, to 1.5 miles for Category D aircraft. The approach also has a “circling” procedure, which has higher MDA and approach visibility requirements.

The RNAV GPS –A approach is classified as a “circling” approach, which allows aircraft to land on either runway. The inbound approach course is 210 degrees, which is offset approximately 50 degrees from the approach end of Runway 26 (260 degrees). The MDA and minimum visibility requirements for the procedure vary by aircraft category. The approach minimums for Category A aircraft are 1-mile visibility and an MDA of 2,380 feet MSL (746 feet AGL).

The existing instrument approach capabilities and minimums for Lexington Airport are summarized in **Table 2-9**. The current instrument approach procedure charts and instrument departure procedure (obstacle clearance) are included in **Appendix A**.



TABLE 2-9: INSTRUMENT PROCEDURES (LEXINGTON AIRPORT)

APPROACH	APPROACH CATEGORY A		APPROACH CATEGORY B		APPROACH CATEGORY C		APPROACH CATEGORY D	
	Ceiling	Vis.	Ceiling	Vis.	Ceiling	Vis.	Ceiling	Vis.
RNAV GPS-A								
Straight-In	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Circling	746	1	826	1¼	846	2½	886	3
RNAV GPS Rwy 8								
LNAV MDA	502	1	502	1	502	1½	502	1½
Circling	746	1	826	1¼	846	2½	886	3

Approach Categories are based on the approach speed of an aircraft in the landing configuration (typically 1.3 times the stall speed V_{so}).

Approach Categories:

Category A: 0-90 knots (Cessna 172, Beechcraft Bonanza, Piper Seneca)

Category B: 91-120 knots (Beechcraft King Air, Cessna Citation)

Category C: 121-140 knots (Learjet 45, Canadair Challenger, Boeing 737, MD80)

Category D: 141-165 knots (Gulfstream 550)

Ceiling: Lowest permitted height of clouds in feet above ground level (AGL)

Vis: Minimum visibility required in statute miles

Source: FAA

Airport Support Facilities/Services

AVIATION FUEL

Lexington Airport has one 100LL aviation gasoline (AVGAS) aboveground fuel tank (owned by Morrow County). 24-hour self-service fueling (credit card) is available. The fuel tank is located on the north side of the main apron, between the center and eastern access taxiways.

Jet fuel is not available for sale at the airport, although the local agricultural aircraft operator, Gar Aviation has a private Jet Fuel storage tank for its turbine-engine Air Tractor spray plane.

Existing aviation fuel storage at the airport is summarized in **Table 2-10**.



TABLE 2-10: AVIATION FUEL STORAGE (LEXINGTON AIRPORT)

FUEL TYPE	FACILITIES	AVAILABILITY	OWNER
Aviation Gasoline (AVGAS) 100LL	6,000 gallon above ground tank	Public, 24-hour credit card service	Morrow County
Jet Fuel (Jet A)	12,000 gallon above ground tank	Privately owned	Gar Aviation

Public Restrooms

A public use restroom is located in the airport office terminal. The Town of Lexington does not have a sanitary sewer utility and individual septic systems are used throughout the community.

Fencing and Security

The airport has wire fencing located along portions of its property line.

Utilities

The developed areas of Lexington Airport have electric, water, and telephone service. The airport is not served by sanitary sewer and the office/terminal individual uses an individual septic system.

Water service is provided by the Town of Lexington through wells and a pump system. The higher elevation of the airport requires that water be pumped from the wells to individual connections. The local agricultural operator at the airport maintains a 20,000 gallon water storage tank for their use. Electric service is provided by Columbia Basin Electric. Telephone service is provided by CenturyLink.

Land Use Planning and Zoning

Lexington Airport is located outside the Town of Lexington city limits and urban growth boundary (UGB). Land use controls and zoning for the airport and in the immediate vicinity (west, north and east) are administered by Morrow County. The Town of Lexington city limit/UGB line abuts the South boundary of the airport (at its east end).

Land uses on the airport include private and commercial general aviation activities with a variety of structures including aircraft storage hangars, commercial hangars, and fuel storage facilities. Two private residences are located adjacent to the south side of the airport. The airport is elevated above the adjacent community to the south and is surrounded by open, hilly landscape in all directions. Highway 207 is located immediately beyond the east end of the runway, with airport property continuing on the east side of the highway.

Lexington Airport is zoned Exclusive Farm Use (EFU) by Morrow County. County planning staff indicates that “Air Industrial Park” overlay zoning was adopted in 2002 by the County and applied to the



Lexington and Boardman airports. The overlay zone is intended to allow uses recommended on each airport's current airport layout plans. Morrow County also maintains two airport-specific safety zones designed to protect airspace from penetrating obstructions and incompatible land uses.

Additional information about current zoning and comprehensive plan land use designations is provided in Chapter 9 - Airport Land Use Compatibility.



Data Sources:

- Morrow County airport records
- **Lexington Airport – Airport Layout Plan Report** (Century West Engineering, March 2001)
- **Lexington Airport – 2011 Pavement Management Report** (Pavement Consultants Inc., February 2012)
- **FAA Airport Master Record Form (5010-1)**
- **Airport/Facility Directory (AFD) –Northwest U.S.** (U.S. DOT, Federal Aviation Administration, Municipal Aeronautical Charting Office)
- **Seattle Sectional Aeronautical Chart and Terminal Area Chart; IFR Enroute Low Altitude (L-1/L-2) Chart** (U.S. DOT, Federal Aviation Administration, Municipal Aeronautical Charting Office)
- **Instrument Approach Procedure Charts (FAA NACO)**
- Town of Lexington Zoning and Land Use Plan Mapping
- Morrow County Zoning and Land Use Plan Mapping
- Local land use planning documents, zoning ordinances and mapping
- Historic airfield design drawings

Chapter 3 – Aviation Activity Forecasts





Chapter 3 – Aviation Activity Forecasts



Introduction

This chapter provides updated forecasts of aviation activity for Lexington Airport (9S9) for the twenty-year master plan horizon (2014-2034). The overall goal is to prepare forecasts that accurately reflect current conditions, relevant historic trends, and provide reasonable projections of future activity, which can be translated into specific airport facility needs anticipated during the next twenty years and beyond. The forecasts presented in this chapter are consistent with Lexington Airport’s current and historic role as a community general aviation airport.

Unless specifically noted, the forecasts of activity are unconstrained and assume that Morrow County will be able to make the facility improvements necessary to accommodate anticipated demand. Through the evaluation of airport development alternatives later in the master plan, Morrow County will consider if any unconstrained demand will not or cannot be reasonably met.

The FAA-defined airport master plan forecasting process for general aviation airports is designed to address elements critical to airport planning by focusing on two key activity segments: based aircraft and aircraft operations (takeoffs and landings). Detailed breakdowns of these are also provided including aircraft fleet mix, activity peaking, distribution of local and itinerant operations, and the determination of the critical aircraft, also referred to as the design aircraft.



The design aircraft represents the most demanding aircraft type or family of aircraft that uses an airport on a regular basis (a minimum of 500 annual takeoffs & landings). The existing and future design aircraft are used to define the (existing and future) airport reference codes (ARC) to be used in airfield planning. FAA airport design standards are organized into several different ARC groupings, each reflecting the physical requirements of that aircraft type. The activity forecasts also provide consistency in evaluating future demand-based facility requirements such as runway and taxiway capacity and capacity for aircraft parking and hangar storage.

Airport Service Area

The airport service area refers to the geographic area surrounding an airport that generates most “local” activity. The population, economic characteristics and number of competing airports within an airport’s service area are important factors in defining locally-generated demand for aviation facilities and services. With numerous airports nearby, service areas often overlap, creating competition between airports for items such as hangar space, fuel, and aviation services. These items are sensitive to cost, convenience and the quality of facilities or services. Demand generated by transient users can also be influenced by competition from nearby airports and can usually be measured in terms of cost, convenience or capabilities. In rural areas, these demand characteristics are often affected by fewer facility choices and significantly longer travel times.

A 30- or 60-minute surface travel time is used to approximate the boundaries of a service area for a typical general aviation airport. Central and southern Morrow County is sparsely populated and there are no other public use airports within a 30-minute drive time, and only two public use airports within a 60-minute drive time of Lexington Airport. **Figure 3-1** illustrates the approximate boundary of a 60-minute drive from Lexington Airport, which encompasses large areas of Morrow County and portions of adjacent counties in Oregon and south-central Washington. Hermiston Municipal Airport is located near the outer edge of Lexington’s airport service area, and its service area extends south and creates an overlap of service coverage for northern Morrow County. However, it is important to note that Lexington Airport is the closest general aviation airport for numerous small communities in central and southern Morrow County and is the only airport in Morrow County to provide day and night, all weather access for emergency fixed-wing medical evacuation (MEDEVAC) service or emergency response.

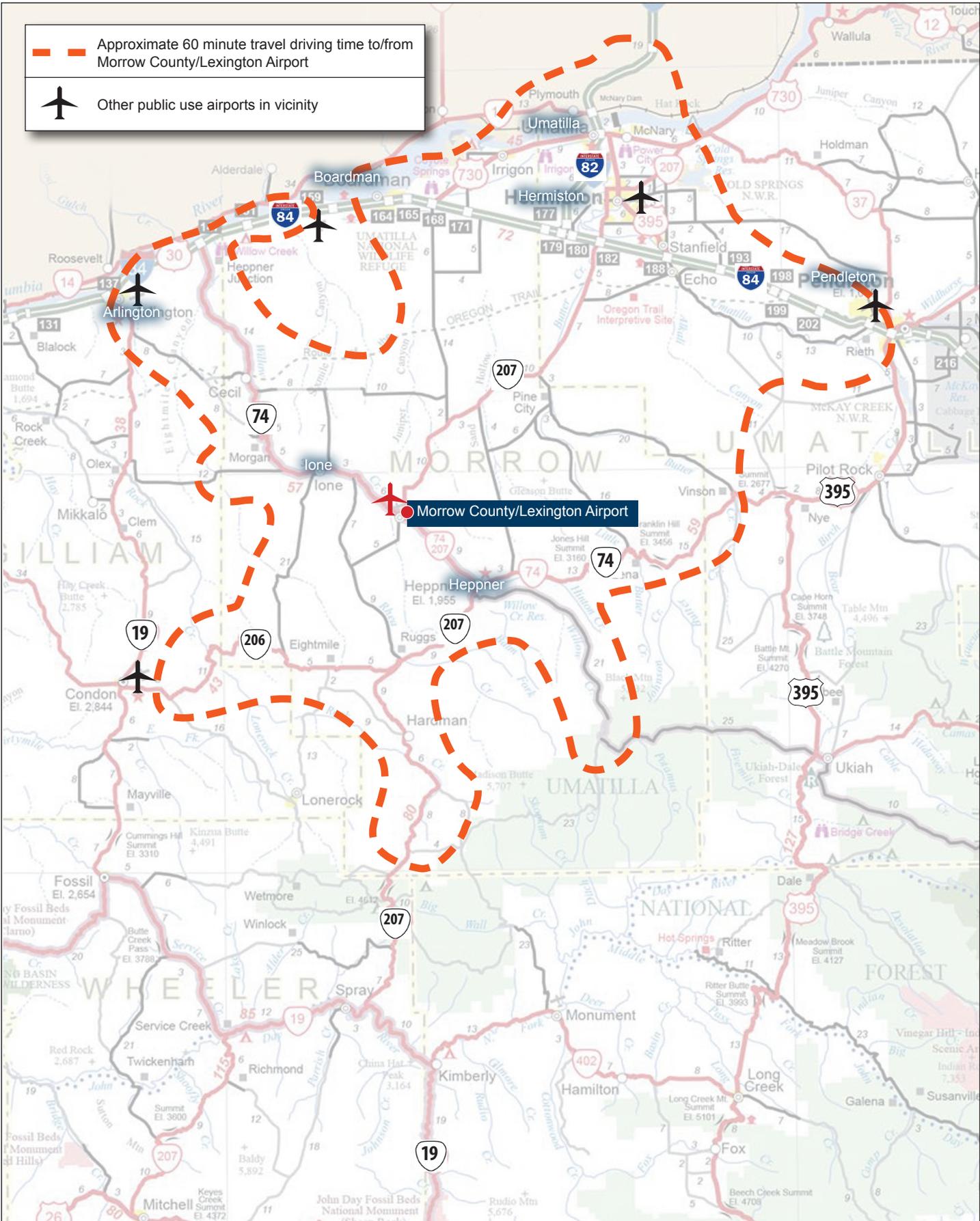




Table 3-1 lists the public use airports within a 40 nautical mile (flight) radius of Lexington. It is noted that several of the public use airports listed do not provide competitive facilities and services, although those that do, have master plans that provide for future facility expansion. Competing airports located beyond a 60-minute travel time typically have less impact on local airport activity due to the redundancy provided by closer facilities. In contrast, the service area for a commercial airport often extends beyond two hours due the relatively small number of airports with scheduled airline service. The region’s primary commercial air service options include two airports within 90 minutes of Lexington: Eastern Oregon Regional Airport (Pendleton) and Tri Cities Airport (Pasco).

TABLE 3-1: PUBLIC USE AIRPORTS IN VICINITY OF LEXINGTON AIRPORT (WITHIN 40 NAUTICAL MILES)

AIRPORT	LOCATION	RUNWAY DIMENSION (FEET)	SURFACE	LIGHTED RUNWAY?	INSTRUMENT APPROACH?	ON-SITE WEATHER?	FUEL AVAILABLE?
Boardman Airport	22 NM N	4,200 x 100	Asphalt	Yes	No	No	No
Hermiston Municipal	29 NM NE	4,500 x 75	Asphalt	Yes	Yes	Yes	Yes
Condon State	24 NM SW	3,500 x 60	Asphalt	Yes	No	No	No
Arlington Municipal	26 NM NW	5,000 x 50	Dirt	No	No	No	No
Eastern Oregon Regional (Pendleton)	39 NM ENE	6,301 x 150 (primary runway)	Asphalt	Yes	Yes	Yes	Yes

Socioeconomic Trends and Forecasts

AIRPORT SERVICE AREA ECONOMY

Historically, downturns in general aviation activity often occur during periods of weak economic conditions and growth typically coincides with favorable economic conditions. It is evident that recent economic recession and the slow recovery that followed, has constrained general aviation activity locally, statewide, and throughout the national airport system. However, as indicated in the FAA’s national long-term aviation forecasts, the overall strength of the U.S. economy is expected to sustain economic growth over the long-term, which will translate into modest to moderate growth in aviation activity.

In March 2014, Morrow County’s unemployment rate was 7.2 percent, down from 8.4 percent in March 2013. During this period, Oregon’s unemployment rate also declined (from 8 percent to 6.9 percent). In the recent recession, unemployment in Morrow County began at less than 6 percent, peaked at 9.9 percent (February



2010), then fluctuated downward to current levels. Despite periodic fluctuations in the economy, nonfarm employment in Morrow County has grown from 3,210 in 2001 to 3,720 in 2013. In 2013, the distribution of nonfarm employment was 77 percent private and 23 percent government. The leading employment sectors in 2013 were manufacturing; government; and trade, transport and utilities. The distribution of nonfarm employment in Morrow County appears to be consistent with population distribution between the north and south parts of the county. With an economy that heavily relies on agriculture, Morrow County experiences some relatively consistent seasonal employment trends in related industries.

The 2012-2022 Employment Projections by Industry and Occupation prepared by the Oregon Department of Employment projects modest growth in employment for the local two-county region (Morrow and Umatilla) over the next ten years. Total payroll is projected to increase from 35,130 in 2012 to 38,400 in 2022, an increase of 9 percent (average annual growth of 0.89 percent). The largest gains (by percentage) are expected in Construction (+28%); Nursing and Residential Care Facilities (+23%); Private Educational & Health Services (+19%); and Leisure & Hospitality (+18%). Declining employment levels are projected for Federal Government (-17%) and Professional and Business Services (-12%).

Morrow County is a strong agricultural producer with 401 farms and approximately 1.1 million acres in farm use.¹ Winter Wheat, Spring Wheat, Corn (for grain), and Cattle are among the leading commodities. In 2012, the market value of all agricultural products sold in Morrow County was over \$586 million. Agriculture is the leading generator of aviation activity at Lexington Airport, which supports one locally-based aerial applicator and occasional transient spray operators.

POPULATION

In broad terms, the population within an airport's service area affects the type and scale of aviation facilities and services that can be supported. Although a large number of airport-specific factors can affect activities at an airport, changes in population often reflect other broader economic conditions which may also affect airport activity.

Historic Population

Certified estimates of population for Oregon counties and incorporated cities are developed annually by the Portland State University (PSU) Population Research Center. The annual PSU estimates, coupled with the U.S. Census, conducted every ten years, provide an indication of local area population trends over an extended period.²

¹ 2012 USDA Census of Agriculture

² Portland State University Population Research Center, July 1, 2013 estimate; 1990, 2000, 2010 U.S. Census.



As noted earlier, the airport service area for Lexington Airport extends beyond Lexington and includes large portions of Morrow County. A significant factor in Morrow County population is the geographic distribution between northern and the central-southern parts of the county.

Population growth for Morrow County has been moderate over the last twenty years, typically at rates slightly lower than Oregon's statewide population, although the county has occasionally outpaced statewide growth. The majority of the growth has been experienced in northern Morrow County (Boardman, Irrigon, etc.), while the population of central and southern Morrow County (Lexington, Ione, Heppner, etc.) has fluctuated within a small range.

When combined, the incorporated areas of Lexington, Heppner, and Ione accounted for 16 percent of Morrow County's 2013 population, down from 18 percent in 2000 and 26 percent in 1990. In 1970, the three communities accounted for 45 percent of Morrow County's population. Although the population distribution trends within the county are evident, due largely to significant growth in the northern part of the county, the local area population has remained relatively stable and is currently within about a 5½ percent of its recent peak levels. For Lexington, the Census data indicate that the population range over the last 70+ years has fluctuated between 223 (1940) and 307 (1980), with an average (mean) population of 253 over the last eight decennial censuses. The most recent PSU population estimate for Lexington was 255 in 2013.

While a flat or slightly declining population base may not typically generate significant growth in aviation activity, a relatively stable population base is capable of sustaining aviation activity, particularly in rural areas with a limited number of airports. Other factors such as the availability of fuel or hangar space, or the presence of a commercial operation, such as an aerial applicator, will often have a more direct impact on airport activity than minor upward or downward shifts in population.

Recent historic population data and average growth rates for Morrow County, local area communities, and Oregon are summarized in **Table 3-2**.

**TABLE 3-2: HISTORIC POPULATION**

YEAR	MORROW COUNTY	CITY OF LEXINGTON <i>(incorporated area only)</i>	LEXINGTON-HEPPNER- IONE COMBINED POPULATION <i>(incorporated areas only)</i>	LEXINGTON-HEPPNER- IONE COMBINED SHARE (%) OF MORROW COUNTY POPULATION	OREGON
1990	7,625	286	1,953	25.6%	2,860,375
2000	10,955	263	1,979	18.1%	3,421,399
2010	11,173	238	1,858	16.6%	3,831,074
2013	11,425	255	1,875	16.4%	3,919,020
<u>Average Annual Rates (AAR) of Growth</u>	<u>Morrow County</u>	<u>City of Lexington</u>	<u>Combined Area</u>		<u>Oregon</u>
1990-2000	3.70%	-0.84%	-0.13%		1.81%
2000-2010	0.20%	-1.00%	-0.63%		1.14%
2000-2013	0.32%	-0.24%	-0.41%		1.05%
2010-2013	0.75%	2.33%	0.30%		0.76%

Source: U.S. Census data; Portland State University certified annual estimates.

POPULATION FORECASTS

Oregon Office of Economic Analysis (OEA)

Long-term population forecasts prepared by the Oregon Office of Economic Analysis (OEA) are periodically generated to support local and statewide planning. The most recent OEA long-term forecasts were released in March 2013, which project modest sustained growth for Morrow County through 2050. Morrow County population is projected to increase from 11,300 in 2012 to 16,098 in 2050. The projection reflects a net increase of 4,798 over the 38-year forecast period, with an average annual growth rate of 0.94 percent.

It is reasonable to assume that recent historic trends will continue and the majority of the forecast population growth will occur in northern Morrow County, with modest population growth occurring in the local communities and the unincorporated central and southern Morrow County. Based on this assumption, future population within the airport service area is not expected to be a significant factor in forecasting future activity at Lexington Airport.

National General Aviation Activity Trends

The first fifteen years of the 21st Century was a tumultuous time for General Aviation (GA). The industry was battered by poor economic conditions and steadily rising fuel prices that slowed growth and negatively affected elements such as aircraft manufacturing, on-demand air travel, aircraft ownership, and aircraft utilization levels. Ongoing concerns over the potential replacement and future availability of



100LL aviation gasoline (AVGAS) have also created uncertainty within general aviation. On a national level, most measures of GA activity declined sharply through the “great recession” and have only recently started to show modest signs of improvement.

The FAA’s long-term forecasts predict that the U.S. active GA aircraft fleet will grow modestly at an average annual rate of 0.4 percent between 2014 and 2035.³ The active GA fleet is expected to increase by approximately 15,400 aircraft over the next twenty years (+8 percent). The FAA forecasts reflect net growth that will be realized through a combination of new aircraft production and fleet attrition.

Data maintained by the FAA show significant system-wide declines of several key general aviation activity indicators between 2001 and 2014 (piston hours flown -34%; active piston aircraft -16%; active GA pilots -7%). AVGAS consumption levels dropped every year between 2001 and 2014, ending 30 percent below 2001 levels.

It is noted that within the overall forecast growth, several segments are projected to decline in actual numbers including single engine piston aircraft (-12%) and multi-engine piston aircraft (-8%). These declines reflect attrition of an aging fleet, which is not being fully offset by new aircraft production. Encouraging areas within the GA fleet are found in turboprops (particularly single engine) (+37%), experimental aircraft (+35%), sport aircraft (+144%), and business jets (+77%) growth through 2035. In addition to stronger production activity, these aircraft segments are experiencing lower levels of fleet attrition.

Aircraft manufacturing has shown positive gains in recent years after an extended period of weak sales. Worldwide GA aircraft deliveries in 2014 totaled 2,454 units, an increase of 4.3 percent over the previous year, but about 11 percent below recent peak of shipments in 2008.⁴ The adaptation of both turbine and diesel engines for small general aviation aircraft by several established manufacturers is positive indication that evolving engine technology may be a significant factor in the long-term future of general aviation. In addition, the resurgence of unleaded automobile gasoline powered small aircraft engines may provide a reliable power source for a growing Light Sport Aircraft (LSA) and experimental aircraft fleet.

Although the FAA maintains a moderately favorable long-term outlook, many activity segments associated with piston engine aircraft and AVGAS consumption are not projected to return to “pre-recession” levels until the 2025 to 2035 timeframe. Although some segments of general aviation are expected to grow at moderately high rates, most measures of the general aviation industry suggest modest, sustained growth in the range of 1 to 2 percent annually is expected over the next 20 years. The FAA’s annual growth assumptions for individual general aviation activity segments are summarized in **Table 3-3**.

³ FAA Aerospace Forecast Fiscal Years 2015-2035

⁴ General Aviation Manufacturers Association (GAMA), 2014 Delivery Report



TABLE 3-3: FAA LONG RANGE FORECAST ASSUMPTIONS (U.S. GENERAL AVIATION)

ACTIVITY COMPONENT	FORECAST ANNUAL AVERAGE GROWTH RATE (2014-2035)
Components with Annual Growth Forecast < 0%	
Single Engine Piston Aircraft in U.S. Fleet	-0.6%
Multi-Engine Piston Aircraft in U.S. Fleet	-0.4%
Hours Flown - GA Fleet (Piston AC)	-0.5%
Student Pilots (Indicator of flight training activity)	-0.3%
AVGAS (Gallons consumed - GA only)	-0.1%
Private Pilots	-0.3%
Components with Annual Growth Forecast < 1%	
Commercial Pilots / Airline Transport Pilots	0.4% / 0.5%
Instrument Rated Pilots	0.2%
Active Pilots (All Ratings, excluding Airline Transport)	0.1%
GA Operations at Towered Airports (all AC types)	0.9%
Active GA Fleet (# of Aircraft)	0.4%
Components with Annual Growth Forecast 1%-2%	
Experimental Aircraft in U.S. Fleet	1.4%
Turboprop Aircraft in U.S. Fleet	1.5%
Components with Annual Growth Forecast >2%	
Piston Helicopters in U.S. Fleet	2.1%
Sport Pilots	5.2%
Turbine Helicopters in U.S. Fleet	2.8%
Light Sport Aircraft in U.S. Fleet	4.3%
Turbojet Aircraft in U.S. Fleet	2.8%
Hours Flown - GA Fleet (Turbine AC)	2.9%
Hours Flown – Experimental AC	2.4%
Hours Flown – Light Sport AC	5.1%
Jet Fuel (Gallons consumed – GA only)	2.5%
Source: FAA Long Range Aerospace Forecasts (FY 2015-2035)	



Overview of Recent Local Events

AIRPORT FUEL SALES

A review of aviation fuel sale volumes at Lexington Airport was conducted to help evaluate the impact of activity trends on airport operations. The 2001 Airport Layout Plan report indicated that aviation gasoline (AVGAS) deliveries at the airport in 1998 totaled approximately 5,500 gallons. The airport had approximately 10 based aircraft in 1998, of which 9 were piston engine aircraft. A review of recent fuel delivery data (April 2012 to March 2013) shows a significant increase in volume (10,871 gallons), although the number of piston engine based aircraft at the airport is the same (9). Several factors could account for the increase, including higher aircraft utilization (more flight hours) for locally based aircraft, increased activity and/or fuel purchases by transient aircraft, and favorable fuel pricing within the airport service area. Other factors could include improvements to runway and airfield, the addition of instrument approach capabilities, on-site weather observation and amenities that make the airport more attractive to transient pilots flying through the area.

As an input into forecasting future aviation activity, the volume of fuel deliveries in relation to the based aircraft population is consistent with FAA-recommended “typical” activity ratios for small general aviation airports with normal activity. Many small rural airports have a significantly lower fuel volume to based aircraft ratios, which often justifies a lower activity ratio. For Lexington Airport, the fueling activity appears to negate the impact of flat or marginally declining local area population as a predominate driver of aviation activity, and is consistent with the nature of a large rural airport service area.

HANGAR CONSTRUCTION

One new 7-unit hangar has been constructed at the airport since the 2001 Airport Layout Plan was completed. The hangar currently accommodates a total of 8 aircraft. Airport management indicates that they have three individuals on a waiting list for hangar space (aircraft located at nearby airports).

All locally based aircraft at Lexington Airport are hangared (including 2 aircraft in an off-airport hangar). This suggests a strong relationship exists between the availability of hangar space and the ability to attract tenants at Lexington Airport. The market depth required to justify building additional hangar capacity should be evaluated periodically by airport management in order to verify and confirm demand (hangar deposits, etc.) based on current prices (development cost, etc.).

As an input into forecasting future aviation activity, the existing demand for hangar space suggests that some growth in based aircraft is reasonable to assume within the 20-year planning period, either as the result of airport- or privately-constructed hangars.



Historic Aviation Activity

Lexington Airport currently has 10 based aircraft, including 8 single-engine piston, 1 multi-engine piston, and 1 single-engine turboprop (aerial applicator). Although there have been some changes in the individual aircraft located at the airport, the overall based aircraft total is unchanged between 2000 and 2014. Lexington Airport has traditionally accommodated single- and multi-engine based aircraft, including a turbine aerial applicator aircraft.

For Lexington Airport, aircraft operational data (takeoffs and landings, touch and go landings, etc.) are limited to estimates. As a non-towered airport, no record of activity is regularly maintained. However, a review of estimates contained in state aviation system plans, previous airport master plans, historic on-site activity counts, and FAA Terminal Area Forecast (TAF) data provides a general indication of activity at the airport over time. Based aircraft counts are updated periodically either as part of a master plan or by airport management for other purposes.

AIRPORT TRAFFIC COUNTS

Beginning in the 1980s, aircraft operations (takeoffs and landings) counts at non-towered airports were conducted on a semi-regular basis by the Oregon Department of Aviation (ODA) through its “RENS” automated activity counting program. The RENS program methodology relied on four brief sample periods over a 12-month period to account for seasonal variation in activity. Recorders were placed next to runways to capture distinct engine sounds for takeoffs that could be identified by aircraft type. The acoustical events were tallied and the sample data was statistically extrapolated to provide a 12-month estimate of activity. The program was phased out in 2003, but provided two annual operations estimates for Lexington in 1986 and 1992. **Table 3-4** summarizes the RENS counts for Lexington Airport during the period, which ranged from a low of 2,527 to a high of 4,432. The operations levels are comparable to current estimates of activity described later in the chapter.

The based aircraft-operations ratios associated with the historic RENS counts are generally consistent with activity ratios currently defined by FAA for estimating activity at small non-towered general aviation airports. However, the ratios do not appear to adequately capture current commercial (aerial applicator) activity at Lexington. Therefore, for long-term forecasting purposes, future aircraft operations ratios that reflect both commercial and non-commercial activity should be developed.



TABLE 3-4: SUMMARY OF ODA RENS ACTIVITY COUNTS - LEXINGTON AIRPORT

YEAR	AIRCRAFT OPERATIONS ¹	BASED AIRCRAFT ²	RATIO: OPERATIONS PER BASED AIRCRAFT
1986	4,432	15	296
1992	2,527	10	252
2-Year Mean	3,480	12.5	274

1. ODA “RENS” Airport Activity Counting Program
2. FAA Terminal Area Forecast, Master Plan or Airport Management Estimates

FAA TERMINAL AREA FORECAST (TAF) DATA

The Federal Aviation Administration (FAA) Terminal Area Forecast (TAF) is maintained for airports that are included in the National Plan of Integrated Airport System (NPIAS). **Table 3-5** summarizes recent historic based aircraft and aircraft operations estimates for Lexington Airport contained in the TAF. The TAF is periodically updated and adjusted as more specific airport activity data are available. When reviewing FAA TAF data, it is important to note that when there is no change from year to year it often indicates a lack of data, rather than no change in activity. A large change in data in a single year may follow updated reporting that captures changes that occurred over several years. Small changes in year-to-year activity that extend through the forecast typically reflect an assumed fixed growth rate.

TABLE 3-5: FAA TAF DATA – LEXINGTON AIRPORT

YEAR	AIRCRAFT OPERATIONS ¹	BASED AIRCRAFT ¹	RATIO: OPERATIONS PER BASED AIRCRAFT
2000	2,632	10	263
2001	2,671	10	267
2002	2,710	9	301
2003	2,750	9	306
2004	2,789	9	310
2005	2,829	9	314
2006	2,865	9	318
2007	2,903	11	264
2008	4,432	9	492
2009	4,432	9	492
2010	4,432	9	492
2011	4,432	9	492
2012	4,432	9	492

1. FAA Terminal Area Historic (Estimated) Activity



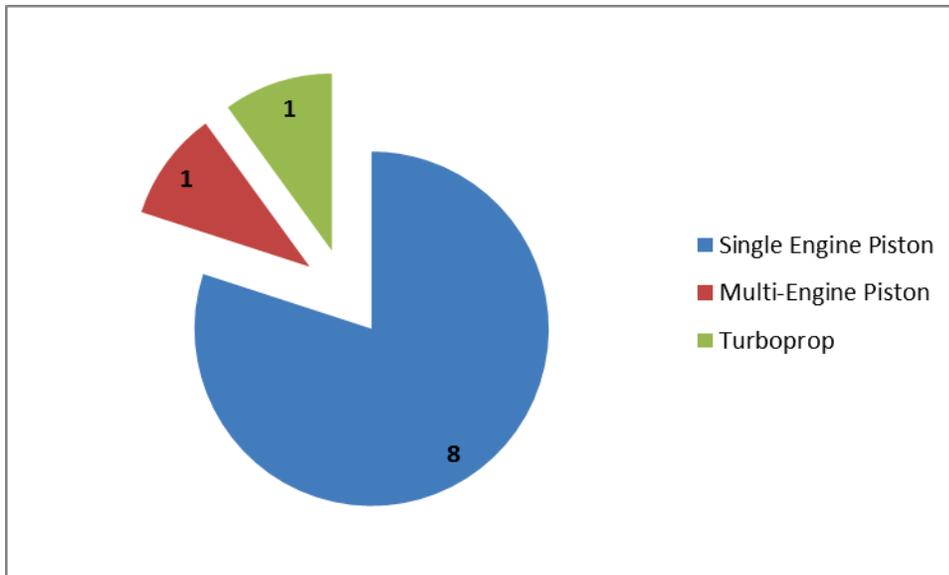
The TAF operations level (4,432) listed for 1990 through 1999 is identical to the RENS activity count conducted in 1986, which indicates that the TAF was adjusted to reflect the on-site activity county and maintained without change for several years. Since no RENS counts have been conducted at the airport during the last twenty years, the TAF operations estimates have not been “adjusted” recently to reflect updated activity data. However, an adjustment to the TAF operations estimate was made in 2000, which reflected the state aviation system plan forecasts prepared in 1997. TAF operations gradually increased until 2008, then were unchanged through 2012. The TAF estimate for 2013 (4,489 operations) reflects a ratio of 449 operations per based aircraft.

CURRENT ESTIMATE OF ACTIVITY

Based Aircraft

A count coordinated with airport management in April 2014 identified 10 aircraft based at Lexington Airport, including 8 single-engine piston, 1 multi-engine piston, and 1 single-engine turboprop. Although there have been changes in individual aircraft, the overall number of based aircraft has not increased since the previous airport plan was completed in 2001. **Figure 3-2** depicts the current distribution of based aircraft by type.

FIGURE 3-2: LEXINGTON AIRPORT - BASED AIRCRAFT SUMMARY (APRIL 2014)



The aircraft that currently generates the highest activity volume at Lexington Airport is a locally-based single-engine turboprop (aerial applicator). The airplane has a maximum takeoff weight of 16,000 pounds and a wingspan of 59.2 feet, and is included in Airplane Design Group II (ADG II). All of the other based aircraft at the airport weigh 12,500 pounds or less and are included in Airplane Design Group I (ADG I).



A description of aircraft classifications and the existing/future design aircraft is provided later in the chapter.

Aircraft Operations

FAA GUIDANCE FOR ESTIMATING AIR TRAFFIC AT NON-TOWERED AIRPORTS

The FAA provides planning guidance for estimating activity at general aviation airports without control towers, including the use of activity ratios to project aircraft operations from the number of based aircraft at the airport. In the absence of actual aircraft operations counts, the ratios of activity are generally adequate for airport planning purposes. The FAA developed “typical” operations ratios for general aviation airports based on their observations at airports throughout the United States. The recommended ratios are 250 operations per based aircraft for small airports with low activity; 350 operations per based aircraft for airports with moderate local and itinerant activity; and 450 operations per based aircraft for high activity airports in urban areas. The ratios are intended to reflect operations from both locally-based and transient aircraft. However, the presence of unique activities such as a large flight school or other commercial operations can increase traffic volumes based on significantly higher aircraft utilization levels (annual flight hours per aircraft, etc.). Conversely, the absence of aviation fuel or a fixed base operator (FBO) can contribute to lower activity levels.

As noted earlier in the chapter, a review of recent fuel deliveries at the airport identified a significant increase in AVGAS consumption relative to the number of based aircraft, compared to the levels in the late 1990s described in the 2001 Airport Layout Plan report. Increased fuel consumption translates into increased aircraft flight activity—whether from locally based aircraft, transient aircraft, or a combination of both.

Considering the airport’s historic aircraft utilization levels, recent fuel data, relevant national trends, and the FAA’s current guidance on estimating aircraft activity at non-towered airports, it appears that an average aircraft utilization level of 250 operations per based aircraft (piston) would be reasonable for estimating the current level of locally-based and transient non-commercial activity at the airport (9 based aircraft x 250 = 2,250 operations).

The aerial applicator at Lexington Airport indicates that they average approximately 1,000 takeoffs annually, which translates into 2,000 annual operations. When combined with 2,250 annual operations generated by other aircraft, **current (2013) activity at Lexington Airport is estimated at 4,250 annual aircraft operations** and an activity ratio of 425 operations per based aircraft. The aerial applicator activity is heavily seasonal and coincides with various growing cycles. A detailed distribution of current traffic is provided in the preferred forecast of operations later in the chapter.



Aviation Activity Forecasting

EXISTING FORECASTS

Existing aviation activity forecasts are available for comparison with current activity, recent historic trends, and the updated forecast scenarios prepared for the master plan. The existing forecasts have not been modified to reflect the recent events and therefore some may be obsolete (in actual numbers). However, the long-term growth rates reflected in the existing forecasts are typically within the range found at many general aviation airports and provide a useful basis of comparison. The existing forecasts and their respective average annual growth rates are summarized below and later in **Table 3-6**.

2001 Airport Layout Plan (2001-2021)

The 2001 Airport Layout Plan Report relied on aviation activity forecasts developed in the Oregon Aviation System Plan (1997 Forecast Update). Based aircraft at Lexington Airport were projected to increase from 10 to 13 between 1994 and 2014, which reflected an average annual growth rate of **1.32 percent**. Annual aircraft operations were projected to increase from 2,500 to 3,130 during the same period, reflecting an average annual growth rate of **1.13 percent**. The OASP forecast base year (1994) operations estimate was based on the 1992 ODA RENS activity count, the most recent available at the time.

The forecasts have reached the end of their projected timeline and provide an opportunity to assess the accuracy of the growth assumptions. The current total of 10 based aircraft results in no net increase from 1994 levels and is 3 aircraft below the 2014 OASP forecast. The current operations estimate of 4,250 noted earlier is 36 percent above the OASP forecast for 2014, but relatively close to the FAA TAF projection for 2014 that was available at the time.

FAA Terminal Area Forecast (TAF)

The FAA's 2013 TAF forecast update projects based aircraft at Lexington Airport to increase from 9 to 11 (+22%) between 2012 and 2040, which represents average annual growth of **0.72 percent**. The 2013 TAF forecast for based aircraft (9) is one less than the current based aircraft count. Aircraft operations are projected to increase from 4,432 to 6,331 between 2012 and 2040, which represents average annual growth of **1.28 percent**. The TAF operations forecast for 2013 (4,489) is approximately 5 percent above the current master plan estimate of 4,250 operations noted earlier in the chapter. The TAF operations forecasts reflect steadily increasing ratios of operations (492 to 575) to based aircraft through 2040. Although the steadily increasing activity ratios appear optimistic, the average annual growth rates are reasonable and provide valid projections for comparison with other forecasts.

On a regional level, the 2013-2040 Terminal Area Forecast projects the number of based aircraft (general aviation) in the Northwest-Mountain Region to increase at an annual average rate of 0.96 percent through



2040. All itinerant operations (commercial, GA, military) in the region are projected to increase at an annual average rate of 1.1 percent through 2040.

2007 Oregon Aviation Plan

The 2007 Oregon Aviation Plan (OAP) contains based aircraft forecasts for Oregon's public use airports for the 2005-2025 timeframe. For Lexington Airport, the OAP forecasts used the 2005 FAA TAF based aircraft and annual operations estimates as the base for its forecast. Based aircraft were projected to increase from 9 to 12 (+33%) between 2005 and 2025, which represents average annual growth of **1.45 percent**. The airport's 2014 based aircraft count (10) matches both the 2010 and 2015 OAP projections. The based aircraft forecast is tracking with actual activity. Annual aircraft operations were projected to increase from 2,829 to 3,633 during the same period, reflecting an average annual growth rate of **1.26 percent**. Although the annual growth rates used are reasonable, the OAP baseline and forecast operations levels do not appear to reflect the volume of commercial (aerial applicator) activity at Lexington Airport, and appear to be running about 25 percent below current levels.

Updated Forecasts

BASED AIRCRAFT

Updated projections of based aircraft at Lexington Airport have been prepared based on a review of recent socioeconomic data, existing aviation activity forecasts and current conditions. The updated forecasts are summarized in **Table 3-6**. Note that the previously prepared forecasts (OAP, TAF, etc.) summarized in **Table 3-6** are not adjusted to reflect the 2014 based aircraft count (10).

LOCAL MARKET GROWTH SCENARIO (1.32% ANNUAL GROWTH)

Airport management indicates that they have a waiting list for hangar space that has a small number of individuals with aircraft located at other airports within Lexington's airport service area. As noted earlier, demand for hangar space appears to be a relatively reliable indicator of growth potential for based aircraft. 100 percent of Lexington's current based aircraft fleet is stored in hangars; no based aircraft are currently parked on the aircraft apron.

The commitment of the individuals on the hangar waiting list to relocate their aircraft to Lexington has not been determined through a formal agreement or by placing a deposit for a future hangar space. It is assumed that these aircraft would be candidates for any vacancies in the airport's existing multi-unit hangar or for new construction, if available. However, it is unknown whether the individuals currently on the waiting list would be willing to pay higher rent for a new hangar, if required by higher construction cost. It is also unknown if these prospective tenants are interested in constructing their own hangar space on leased ground.



While considering these factors, it is reasonable to assume that some portion of the current expressed demand (assume 3 individuals) or other similar future demand could be realized at Lexington Airport in the current planning period. This projection assumes that an increase in based aircraft equal to 2/3 of the current hangar waiting list will be occur by 2024, followed by nominal growth of less than 1 percent (0.80%) annually through 2034. This projection assumes that at least 2 new hangar units are constructed (private or County) at the airport by 2024. Based aircraft increase from 10 in 2014 to 13 in 2034, which reflects an average annual growth rate of **1.32 percent**.

MAINTAIN MARKET SHARE (OREGON) (1.32% ANNUAL GROWTH)

Lexington Airport accounted for approximately 0.185 percent of Oregon’s general aviation fleet in 2005⁵ (Oregon Aviation Plan Forecast Update – 2007). Based on the current (2014) based aircraft count, Lexington now accounts for approximately 0.182 percent of the projected statewide total. This projection assumes that Lexington’s share of Oregon’s general aviation aircraft fleet will be maintained at 0.182 percent over the next twenty years. A net increase of 2.5 based aircraft at Lexington Airport over the next 20 years is required to hit this market share level in 2034.

The 2007 Oregon Aviation Plan (OAP) forecast projects the number of general aviation aircraft in Oregon will increase from 4,875 in 2005 to 6,225 in 2025. The OAP projection was extrapolated to 2034 (6,881) to match the master plan forecast horizon using the average annual growth forecast between 2015 and 2025. In this projection, based aircraft at Lexington Airport increase from 10 in 2014 to 13 (rounded up from 12.5) in 2034, which reflects an average annual growth rate of **1.32 percent**.

FAA 2013-2040 TAF REGIONAL GROWTH (0.96% ANNUAL GROWTH)

This projection utilizes the average annual growth rate used by FAA in the current Terminal Area Forecast (TAF) to forecast based aircraft in the Northwest-Mountain Region. The average annual rate of growth (0.96%) is applied to Lexington’s base year total of 10 based aircraft and maintained through the entire planning period. In this projection, based aircraft at Lexington Airport increase from 10 in 2014 to 12 in 2034, which reflects an average annual growth rate of **0.96 percent**.

⁵ Oregon Aviation Plan Forecast Update – 2007



TABLE 3-6: SUMMARY OF BASED AIRCRAFT FORECASTS (LEXINGTON AIRPORT)

EXISTING FORECASTS	2010	2015	2020	2025	2030
Oregon Aviation Plan (1.44% AAR 2005-2025)	10	10	11 ¹	12	--
FAA Terminal Area Forecast (0.72% AAR 2012-2040)	9	9	10	11	11
UPDATED BASED AIRCRAFT FORECASTS	2014	2019	2024	2029	2034
Local Market Growth Scenario (1.32% AAR 2014-2034) <i>Preferred Forecast</i>	10	11	12	13	13
FAA NW Regional TAF Growth Rate (0.96% AAR 2013-2034)	10	11	11	12	12
Oregon Market Share - Maintain Current Share % (1.32% AAR 2014-2034)	10	11	11	12 ²	13 ²

1. Interpolated. 2. Extrapolated.

The Local Market Share projection is recommended as the preferred based aircraft forecast for use in the airport master plan. The projected growth recognizes the potential to accommodate existing demand for hangar space, but is tempered somewhat in the long-term to reflect the airport’s historic growth trends.

It is important to note that each increment of growth (one aircraft) represents a larger net increase at an airport with a smaller user base. For example, one additional based aircraft at Lexington represents a 10 percent increase over current levels (10 based aircraft) while the same increase at Hermiston Municipal (38 based aircraft) would represent a 2.6 percent increase. This illustrates the potential impact of new hangar construction or events that can attract multiple new aircraft over relatively short periods of time and skew average growth rates.

AIRCRAFT OPERATIONS

For forecasting purposes, the “typical” activity range defined by FAA for small general aviation airports (ratio of 250 operations per based aircraft) provides a reasonable indication of baseline non-commercial activity that could increase through an increase in based aircraft. This component of activity combined with established commercial activity appears to provide a reasonable measure of future activity at Lexington Airport.

An updated aircraft operations forecast has been developed for comparison with existing forecasts by applying the current ratio of 425 operations per based aircraft, which reflects both the commercial and



non-commercial activity, to the preferred based aircraft forecast noted above. Several factors suggest that this approach is appropriate for Lexington Airport:

- The local aerial applicator estimates their flight activity averages 2,000 operations per year, generated by one aircraft. The operator indicates that the current level of flight activity is expected to remain the same in the foreseeable future and they have no plans to expand their operations at this time.
- The operations generated by transient aerial applicators at the airport occur on an occasional basis and can be captured in the overall based aircraft to operations ratio (noted below).
- The “typical” activity ratio defined by FAA for small general aviation airports (250 operations per based aircraft) provides a reasonable projection of activity (excluding the locally based aerial applicator) at Lexington Airport, currently and through the current planning period. This appears to capture the local and transient non-commercial flight activity at the airport, transient commercial activity (other aerial applicators, medevac flights, etc.), law enforcement and other government agencies, and military.

The use of activity ratios to project future aircraft operations provides a reasonable forecasting method for Lexington Airport. Existing state aviation system planning or FAA forecasts rely on a more complex array of forecast inputs and model assumptions, yet have produced similar results for Lexington Airport. The application of other forecast models for aircraft operations that are built on population growth or external factors such as national or regional growth rates does not appear relevant for Lexington Airport. It appears that current airport operations levels are well established and can be sustained or marginally increased during the current planning period based on modest growth in based aircraft, the airport’s functional role and the nature of the airport service area.

The following formula is recommended to forecast future aircraft operations at Lexington Airport:

$$(x * y) + z = \text{Annual Operations}$$

$$x = \text{Non Commercial Based Aircraft}$$

$$y = 250 \text{ (GA Operations Ratio)}$$

$$z = 2000 \text{ (Local Commercial Aircraft Operations)}$$

Using the recommended based aircraft forecast noted in **Table 3-6**, aircraft operations are projected to gradually increase from 4,250 in 2014 to 5,000 in 2034, which reflects an average annual growth rate of **0.82 percent**. The aircraft operations forecasts are summarized in **Table 3-7**.

**TABLE 3-7: SUMMARY OF AIRCRAFT OPERATIONS FORECASTS (LEXINGTON AIRPORT)**

EXISTING FORECASTS	2010	2015	2020	2025	2030
Oregon Aviation Plan (1.26% AAR 2005-2025)	3,082	3,266	3,450 ¹	3,633	--
FAA Terminal Area Forecast (1.28% AAR 2012-2040)	4,432	4,604	4,908	5,234	5,578
UPDATED BASED AIRCRAFT FORECASTS	2014	2019	2024	2029	2034
Fixed Operations : Based Aircraft Ratio (0.82% AAR 2014-2034)	4,250	4,500	4,750	5,000	5,000

1. Interpolated.

Local and Itinerant Operations

The current [FAA 5010-1 Airport Record Form](#) for Lexington Airport estimates the air traffic distribution to be 77 percent local and 23 percent itinerant. The FAA TAF and the 2001 Airport Layout Plan forecasts reflect similar traffic distributions for forecast operations. Local operations are conducted in the vicinity of an airport and include flights that begin and end at the airport. These include local area aerial applicator flights, flight training, touch and go landings, flightseeing, and other flights that do not involve a landing at another airport. Itinerant operations include flights between airports, including cross country flights. While a 77%/23% split between local and itinerant operations at Lexington Airport appears to be on the high side, it is adequate for forecasting purposes. Local and itinerant data for each forecast year are summarized in **Table 3-12**, at the end of the chapter.

Design Aircraft

The FAA groups aircraft into five categories (A-E) based upon their approach speeds. Aircraft Approach Categories A and B include small propeller aircraft, many small or medium business jet aircraft, and some larger aircraft with approach speeds of less than 121 knots (nautical miles per hour). Categories C, D, and E consist of the remaining business jets as well as larger jet and propeller aircraft generally associated with commercial and military use with approach speeds of 121 knots or more. The FAA also establishes six airplane design groups (I-VI), based on the wingspan and tail height of the aircraft. The categories range from Airplane Design Group (ADG) I, for aircraft with wingspans of less than 49 feet, to ADG VI for the largest commercial and military aircraft.

A list of typical general aviation and business aviation aircraft and their respective design categories is presented in **Table 3-8**. **Figure 3-3** illustrates representative aircraft in various design groups.



The selection of design standards for airfield facilities is based upon the characteristics of the aircraft that are expected to use the airport. The **design aircraft** is defined as the most demanding aircraft type operating at the airport with a minimum of 500 annual itinerant operations, as described by the Federal Aviation Administration (FAA):

“Substantial Use Threshold. Federally funded projects require that critical design airplanes have at least 500 or more annual itinerant operations at the airport (landings and takeoffs are considered as separate operations) for an individual airplane or a family grouping of airplanes. Under unusual circumstances, adjustments may be made to the 500 total annual itinerant operations threshold after considering the circumstances of a particular airport. Two examples are airports with demonstrated seasonal traffic variations, or airports situated in isolated or remote areas that have special needs.”

The unique operational needs of Lexington Airport include providing the only all-weather fixed wing medevac access within a large, sparsely populated geographic area. This condition speaks to the example noted above regarding “isolated or remote areas that have special needs.” The medevac activity is typically provided by single-engine and multi-engine turboprop aircraft included in Airplane Design Group II (ADG II). Although this activity is well below the “substantial use” level required for the design aircraft, maintaining the medevac capabilities serves a critical public need. Providing this level of capability at Lexington Airport is also reflected in the “desired performance standards” defined in current state aviation system planning. As noted earlier, Lexington Airport also generates a significant volume (approximately 2,000 annual operations) of ADG II operations by a locally-based aerial applicator. The overall operations levels exceed the “substantial use” threshold defined by FAA, although much of the activity consists of local operations performed within 50 miles of the airport. However, there is no significant distinction between these operations and typical itinerant operations in terms of airport facility needs. These factors create sufficient justification to consider local and itinerant ADG II operations when identifying the design aircraft. It is also noted that all existing runway and taxiway facilities at the airport have been rehabilitated or reconstructed within the last five years based on ADG II standards.

**TABLE 3-8: GENERAL AVIATION AIRCRAFT & DESIGN CATEGORIES**

AIRCRAFT	AIRCRAFT APPROACH CATEGORY	AIRPLANE DESIGN GROUP	MAXIMUM GROSS TAKEOFF WEIGHT (LBS)
Cessna 182 (Skylane)	A	I	3,100
Cirrus Design SR22	A	I	3,400
Cessna 206 (Stationair)	A	I	3,614
Beechcraft Bonanza A36	A	I	3,650
Socata/Aerospatiale TBM 700	A	I	6,579
Beechcraft Baron 58	B	I	5,500
Cessna 340	B	I	5,990
Beechcraft Duke (B60)	B	I	6,775
Cessna Citation CJ1+	B	I	10,700
Beech King Air B200	B	I	11,800
Piper Malibu (PA-46)	A	II	4,340
Cessna Caravan 675	A	II	8,000
Pilatus PC-12	A	II	10,450
Cessna Citation II	B	II	13,300
Beech King Air 350	B	II	15,000
Cessna Citation Bravo	B	II	15,000
Air Tractor 802 (Lexington Design Aircraft*)	B	II	16,000
Bombardier Learjet 55	C	I	21,500
Beechcraft Hawker 800XP	C	II	28,000
Gulfstream III	C	II	69,700
Learjet 35A/36A	D	I	18,300
Gulfstream G450	D	II	73,900

Source: AC 150/5300-13, as amended; aircraft manufacturer data. * The Air Tractor is the design aircraft for use in determining physical dimensions, other than runway length, and for pavement strength. Runway length requirements based on typical multi-engine aircraft as represented by 95 percent of small airplane fleet.

The combination of airplane design group and aircraft approach speed for the design aircraft creates the Airport Reference Code (ARC), which is used to define applicable airfield design standards. Aircraft with a maximum gross takeoff weight greater than 12,500 pounds are classified as “large aircraft” by the FAA; aircraft 12,500 pounds and less are classified as “small aircraft.”



CURRENT AND FUTURE DESIGN AIRCRAFT

Based on existing and forecast activity levels, the appropriate design aircraft for Runway 8/26 is a single-engine turboprop (Air Tractor 802) aerial applicator based at the airport. The Air Tractor 802 is included in Aircraft Approach Category B and Airplane Design Group II (Airport Reference Code: B-II). The Air Tractor 802 represents the largest physical aircraft in terms of wingspan and weight, but its runway length requirements are nominal compared to a typical light twin-engine aircraft such as a Beechcraft Baron. For the purposes of defining runway length requirements, the needs of a typical light twin engine aircraft (ARC B-I) would generally be adequate to accommodate most users. A detailed discussion of design aircraft considerations will be provided in the Facility Requirements chapter.



A-I

12,500 lbs. or less (small)

- Beech Baron 55
- Beech Bonanza
- Cessna 182**
- Piper Archer
- Piper Seneca



B-I

12,500 lbs. or less (small)

- Beech Baron 58**
- Beech King Air 100
- Cessna 402
- Cessna 421
- Piper Navajo
- Piper Cheyenne
- Cessna Citation I



A-II, B-II

12,500 lbs. or less (small)

- Air Tractor 802**
- Super King Air 200
- Cessna 441
- DHC Twin Otter
- Cessna Caravan
- King Air C90



B-II

Greater than 12,500 lbs.

- Super King Air 300, 350
- Beech 1900
- Jetstream 31**
- Falcon 20, 50
- Falcon 200, 900
- Citation II, Bravo XLS+
- Citation CJ3



A-III, B-III

Greater than 12,500 lbs.

- DHC Dash 7
- DHC Dash 8
- Q-300, Q-400**
- DC-3
- Convair 580
- Fairchild F-27
- ATR 72
- ATP



C-I, D-I

- Lear 25, 35, 55, 60
- Israeli Westwind
- HS 125-700



C-II, D-II

- Gulfstream II, III, IV
- Canadair 600**
- Canadair Regional Jet
- Lockheed JetStar
- Citation X
- Citation Sovereign
- Hawker 800 XP



C-III, D-III

- Boeing Business Jet
- B 727-200**
- B 737-300 Series
- MD-80, DC-9
- Fokker 70, 100
- A319, A320
- Gulfstream V
- Global Express



C-IV, D-IV

- B-757**
- B-767
- DC - 8-70
- DC - 10
- MD - 11
- L 1011



D-V

- B - 747 Series**
- B - 777





Operational Peaks

It is estimated that peak month activity at Lexington Airport occurs during the summer (typically July or August) and accounts for approximately 15 percent of annual aircraft operations. This level of peaking is consistent with the mix of airport traffic and is expected to remain relatively unchanged during the planning period. Peak day operations are defined by the average day in the peak month (design day). Operational peaks for each of the forecast years are summarized in **Table 3-9**.

TABLE 3-9: PEAK OPERATIONS FORECAST

ACTIVITY	2014	2019	2024	2029	2034
Annual Operations	4,250	4,500	4,750	5,000	5,000
Peak Month Operations (15%)	638	675	713	750	750
Design Day (average day in peak month)	21	23	24	25	25
Design Hour Operations (assumed 30% of design day)	6	7	7	8	8

Instrument Flight Activity

Based on current traffic estimates, instrument operations currently appear to account for about 1 to 2 percent of overall airport operations. This percentage is expected to remain relatively steady through the planning period.

Aircraft Fleet Mix

BASED AIRCRAFT

The airport’s current mix of based aircraft is predominantly single-engine piston (80 percent), followed by multi-engine piston (10%), and turboprop (10%). The current distribution of the based aircraft fleet is expected to remain relatively unchanged during the twenty-year planning period. Some changes in the small airplane fleet, such as the increased presence of light sport aircraft (LSA) or experimental aircraft, are anticipated but these aircraft have similar facility needs as traditional single-engine aircraft. The forecast based aircraft fleet mix is summarized in **Table 3-10**.



TABLE 3-10: FORECAST BASED AIRCRAFT FLEET MIX

ACTIVITY	2014	2019	2024	2029	2034
Single-Engine Piston <i>(including Light Sport Aircraft)</i>	8 (90%)	9 (82%)	10 (83%)	11 (85%)	11 (85%)
Multi-Engine Piston	1 (10%)	1 (9%)	1 (8%)	1 (8%)	1 (8%)
Turboprop	1 (10%)	1 (9%)	1 (8%)	1 (8%)	1 (8%)
Business Jet/VLJ	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Other (Ultralights, etc.)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Helicopter	0 (0%)	0 (0%)	0 (2%)	0 (0%)	0 (0%)
Total Based Aircraft (100%)	10	11	12	13	13

Note: Percentages may not sum due to independent rounding

AIRCRAFT OPERATIONS

The current aircraft operations fleet mix is estimated to closely follow the airport’s based aircraft composition, with aerial applicator turboprops accounting for nearly half of current operations. Some growth in transient multi-engine, turboprop, jet and helicopter operations is anticipated based on current aircraft manufacturing trends and activity within the airport service area. The forecast aircraft operations fleet mix is summarized in **Table 3-11**.

TABLE 3-11: FORECAST AIRCRAFT OPERATIONS FLEET MIX

AIRCRAFT TYPE	2014	2019	2024	2029	2034
Single Engine Piston	1,870 (44%)	2,040 (45%)	2,220 (47%)	2,410 (48%)	2,360 (47%)
Multi Engine Piston	200 (5%)	220 (5%)	240 (5%)	260 (5%)	280 (6%)
Single Engine Turboprop	2,100 (49%)	2,140 (48%)	2,160 (46%)	2,180 (44%)	2,200 (44%)
Multi-Engine Turboprop	20 (<.5%)	30 (<1%)	40 (<1%)	40 (<1%)	40 (<1%)
Jet	10 (<.5%)	10 (<.5%)	20 (<.5%)	30 (<1%)	30 (<1%)
Helicopter	50 (1%)	60 (1%)	70 (2%)	80 (2%)	90 (2%)
Total Operations (100%)	4,250	4,500	4,750	5,000	5,000

Note: Percentages may not sum due to independent rounding



Forecast Summary

The recommended based aircraft forecast for Lexington Airport is the **Local Market Growth Scenario** projection, which reflects anticipated demand for hangar space among users in the airport service area. The recommended forecast reflects an average annual growth rate of **1.32 percent**. This projection assumes that existing demand for hangar space will be absorbed in the first ten years of the planning period, followed by slower growth through the remainder of the planning period.

The recommended forecast for aircraft operations is based on an activity ratio of 250 annual operations per based aircraft combined with 2,000 annual operations generated by the local aerial applicator. The recommended forecast reflects an average annual growth rate of **0.82 percent**. The majority of activity at Lexington Airport is general aviation, with a small amount of air taxi and military activity. The preferred forecasts are summarized in **Table 3-12**.

TABLE 3-12: FORECAST SUMMARY

ACTIVITY	2014	2019	2024	2029	2034
Based Aircraft	10	11	12	13	13
Itinerant Operations					
General Aviation	948	1,005	1,062	1,120	1,120
Air Taxi	20	20	20	20	20
Military	10	10	10	10	10
Total Itinerant Operations	978	1,035	1,092	1,150	1,150
Local Operations (all GA)	3,272	3,465	3,658	3,850	3,850
Total Local & Itinerant Operations	4,250	4,500	4,750	5,000	5,000
Operations by ARC/Type					
A-I (Single Engine Piston)	1,870	2,040	2,220	2,410	2,360
A/B-I (Multi-Engine Piston)	200	220	240	260	280
B-I/B-II (Jet)	10	10	20	30	30
A/B-I (Turboprop)	20	20	30	30	30
A/B-II (Turboprop)	2,100	2,150	2,170	2,190	2,210
Helicopter (ARC: N/A)	50	60	70	80	90



As with any long-term facility demand forecast, it is recommended that long-term development reserves be protected to accommodate demand that may exceed current projections. For planning purposes, a reserve capable of accommodating a doubling of the 20-year preferred forecast demand should be adequate to accommodate unforeseen facility needs during the current planning period. However, should demand significantly deviate from the airport's recent historical trend, updated forecasts should be prepared to ensure that adequate facility planning is maintained.

Chapter 4 – Airport Facility Requirements





Chapter 4 – Airport Facility Requirements

The airport facility requirements analysis uses the results of the inventory and forecasts contained in Chapters 2 and 3, as well as established planning criteria, to determine the future facility needs for Lexington Airport for the current twenty-year planning period.



Introduction

The evaluation of airport facility requirements can be divided into two broad primary categories: airside and landside. **Airside** facilities include runways, taxiways, navigational aids, and lighting systems. **Landside** facilities include hangars, fixed base operator (FBO) facilities, aircraft parking apron, aircraft fueling, surface access and automobile parking, utilities, and other related items. All airfield items are evaluated based on established standards from the Federal Aviation Administration (FAA).

The facility requirements evaluation is used to identify the adequacy or inadequacy of existing airport facilities and identify what new facilities may be needed during the planning period based on forecast demand. Potential options and preliminary costs for providing these facilities will be evaluated in the Airport Development Alternatives (Chapter 5), to determine the most cost effective and efficient means for meeting projected facility needs.



Organization of Materials

This chapter evaluates facility requirements from two perspectives: (1) conformance of existing facilities with Federal Aviation Administration (FAA) airport design and airspace planning standards; and (2) new demand based facility needs that reflect the updated aviation activity forecasts presented in Chapter 3.

FAA DESIGN STANDARDS CONFORMANCE

A key element in airport master planning is the evaluation of existing facilities for conformance with current FAA design standards, which may have changed since the previous plan was completed or when facilities were constructed. The evaluation of current and future conformance with FAA airport design standards will be reflected on the updated FAA approved Airport Layout Plan. The evaluation of demand driven items will reflect in gross numbers, new facility needs such as hangar spaces and aircraft parking positions based on forecast demand and the needs of the design aircraft. Items such as lighting and navigational aids are evaluated based on the type of airport activity, airport classification, and capabilities.

The updated inventory of existing facilities presented in Chapter 2 was used to evaluate conformance with FAA standards. **Figure 4-1** illustrates the location of the non-conforming items identified for the airport design standards described in this chapter.

Runway Protection Zone (RPZ)

In October 2012, the FAA released new guidance regarding runway protection zones and roads. In short, the policy directs airport sponsors to evaluate any planned changes to existing RPZs that introduce or increase the presence of roads in RPZs. Existing roads within RPZs are also to be evaluated during master planning to determine if feasible alternatives exist for realignment of roads outside RPZs or for changes to the RPZs themselves. However, the FAA Seattle Airports District Office (ADO) has indicated that the agency does not plan on addressing existing road/RPZ conflicts unless there is a proposed change in the location or size of the RPZ, or a change to the roads or other incompatible land uses located within the RPZ. Any proposed change in road or runway configuration affecting an RPZ is subject to review by FAA headquarters in Washington D.C.

Two public roadways (State Highway 207 and the airport access road) are located in the inner half of the Runway 26 RPZ. The airport access road extends approximately 1,000 feet from State Highway 207 to the airport main apron and hangar area, with approximately 550 feet located in the RPZ. The road climbs approximately 35 feet from the highway to the terminal area and exits the RPZ approximately 100 feet from the inner end, which is about 18 feet lower than the Runway 26 threshold. Since vehicles traveling on the access road do not penetrate the Runway 26 approach surface, displacement of the runway threshold and the addition of a second (arrival) RPZ are not required. State Highway 207 traverses the Runway 26 RPZ near its midpoint at an elevation approximately 35 feet lower than the Runway 26 threshold. This section of highway follows a natural depression in the topography, with rising terrain located on both



sides. Vehicles traveling on the highway do not penetrate the Runway 26 approach surface and no changes to the threshold and RPZ location are required.

Based on the airport's topography, property ownership, and facility configuration, realigning the existing roads outside the Runway 26 RPZ is not considered feasible. Options for shifting the runway (and the Runway 26 RPZ) west are not considered highly feasible due to the significant property acquisition and construction cost involved, but could be considered if FAA required the County to actively mitigate the existing road/RPZ conflicts. However, since no changes to the existing runway and roadways are anticipated and current FAA policy does not prioritize modification of existing RPZ/road conflicts, no changes to the existing RPZ-road configuration are recommended at this time.

Apron Taxilane Object Free Area

The main apron has a taxilane extending along the north edge that connects to three access taxiways, which connect the runway-taxiway system and the apron. The taxilane is used by both ADG I and ADG II aircraft and therefore needs to meet ADG II standards. A portion of the taxilane object free area (TOFA) extends over the adjacent small airplane tiedown area on its south side. Per FAA standards, the TOFA should be free of obstructions including parked aircraft or other temporary or permanent obstructions (vehicles, structures, fuel tanks, etc.). Options for reconfiguring/expanding the main apron and taxilane to conform to applicable design standards will be included in the development alternatives analysis.

Detailed definitions of the standards and their application at the airport are provided throughout the chapter. The reader is encouraged to consult the Glossary of Aviation Terms provided to clarify technical information.

Runway Obstacle Free Zone and Aircraft Hold Lines

Runway 8/26 accommodates aircraft weighing more than 12,500 pounds on a regular basis. This change in activity occurred after the previous plan was prepared in 2001, when the local aerial applicator upgraded to a larger aircraft. The FAA standard obstacle free zone (OFZ) width for runways that accommodate large airplanes is 400 feet, compared to the previous standard of 250 feet (runways serving small aircraft). The existing aircraft hold lines on two exit taxiways and the aircraft hold area connected to the runway are located 125 feet from runway centerline. The hold lines will need to be relocated to 200 feet from runway centerline to allow holding aircraft to remain clear of the OFZ. The aircraft hold area adjacent to the Runway 8 end is not currently large enough to accommodate an aircraft south of the relocated hold line 200 feet from the runway centerline. Options for expanding the hold area will be evaluated in the development alternatives analysis.

- 1 TAXILANE OFA (AIRCRAFT PARKING)
- 2 RPZ (ROADWAYS)
- 3 AIRCRAFT HOLD LINE (RUNWAY OFZ)

--- TAXILANE/TAXIWAY OBJECT FREE AREA
 --- EXISTING PROPERTY LINE

AIRCRAFT APPROACH CATEGORY B
 AIRPLANE DESIGN GROUP II
 AIRPORT REFERENCE CODE (ARC): B-II





2001 Airport Layout Plan Overview

The 2001 Lexington Airport Layout Plan Report provided recommendations for airport facility improvements for the twenty-year planning period that extended to 2020. As noted in Master Plan Chapter 1 – Introduction, virtually the entire airfield has been upgraded, reconfigured or reconstructed since the 2001 ALP Report was completed.

Major projects completed in 2006 and 2011 included the following airfield improvements:

- Demo/Relocate Existing Parallel Taxiway;
- Reconstruct Existing Diagonal Taxiway;
- New Taxiway Adjacent to Future AG Loading Area;
- Reconstruct Apron Adjacent to Hangars;
- New Public Use PCC AG Loading Apron;
- Fill/Grading in the Runway Safety Area (Runway 26 end);
- Relocated Lighted Wind Cone and New Segmented Circle;
- Taxiway Reflectors (Runway 8 turnaround);
- Reconstruct and repave Runway 8/26 and turnout (Runway 8 end);
- New runway pavement markings: centerline stripe, runway end numbers, and taxi lead-in stripes;
- Re-grade and compact runway safety area;
- New Medium Intensity Runway lighting (MIRL) system (edge lights, threshold lights, conduit, conductor, and counterpoise);
- New 2-box Precision Approach Path Indicators (PAPIs) for both runway ends; and
- Supplemental non-lighted wind cone.

In addition to these projects, the County removed an old hangar and constructed a new 7-unit hangar in its place, constructed a new county equipment storage building and airport office/terminal, and renovated an existing Quonset hangar. An automated weather observation system (AWOS) was installed off airport property, on adjacent farm land utilizing an easement. Two nonprecision instrument approaches were established at the airport by FAA in 2003. A new airport rotating beacon was installed in 2014.

Only a handful of development projects from the twenty-year capital improvement program (CIP) have not been completed to date, including:

- Runway End Identifier Lights (REIL);
- New Airport Well;
- North Parallel Taxiway;
- Property Acquisition (17 acres on north side of runway); and
- Water Storage Tank (180,000 gal.).



The improvements which have not been implemented will be revalidated, modified, or eliminated based on the updated assessment of facility needs, current FAA guidelines, and the elements of the current Airport Master Plan preferred development alternative.

Design Aircraft

The design aircraft represents the most demanding aircraft using the airport on a regular basis (minimum of 500 annual operations) and determines the appropriate airport design standards for the current twenty-year planning period. As indicated in Chapter 3 (Aviation Activity Forecasts), the current and future design aircraft identified for Lexington Airport is a single-engine turboprop (Air Tractor 802) aerial applicator that is based at the airport. The Air Tractor 802 (AT-802) is included in **Aircraft Approach Category B** and **Airplane Design Group II (Airport Reference Code: B-II)**. The AT-802 has a maximum takeoff weight of 16,000 pounds, which places it in the “large” airplane category (aircraft weighing more than 12,500 pounds). It is noted that a smaller aerial applicator aircraft (Air Tractor 502B - maximum takeoff weight 9,700 pounds) was identified as the design aircraft in the 2001 ALP Report. The AT-502B is also an ADG II aircraft, but is classified as a “small” aircraft based on its operating weight.

As the current and future design aircraft, the AT-802 requires use of “other than utility” airspace standards under Federal Aviation Regulations (FAR) Part 77.25. This represents a change from the previous planning effort, where FAR Part 77 airspace standards consistent with “small aircraft” and “utility” runways were applied to Runway 8/26. The change to a larger design aircraft requires an upgrade in FAR Part 77 airspace to comply with FAA standards. This change in airspace is reflected in the updated airport layout plan drawing set (Airspace Plan). Existing airport overlay zoning that is based on the defined FAR Part 77 surfaces for Lexington Airport will need to be reviewed to ensure consistency with the updated ALP.

The AT-802 represents the largest physical aircraft in terms of wingspan and weight using the airport on a regular basis. These physical characteristics determine most runway and taxiway dimensional standards and pavement strength. However, this aircraft is capable of operating on very short runways, which is not typical of most business use ADG I or II aircraft. For this reason, it is recommended that a typical light twin-engine aircraft such as a Beechcraft Baron (ARC B-I) be used to determine runway length requirements. This type of aircraft is represented in the FAA runway length model in the 95 percent of the small airplane fleet (aircraft under 12,500 pounds) segment.



Airport Design Standards

Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5300-13A, Airport Design, serves as the primary reference in planning airfield facilities. Federal Aviation Regulation (FAR) Part 77.25, Objects Affecting Navigable Airspace, defines airport imaginary surfaces which are established to protect the airspace immediately surrounding a runway. The airspace and ground areas surrounding a runway should be free of obstructions (i.e., structures, parked aircraft, trees, etc.) to the greatest extent possible to provide a safe operating environment for aircraft. FAA Order 8260.3B - United States Standard for Terminal Instrument Procedures (TERPS) defines protected airspace surfaces associated with instrument approaches and departures.

Table 4-1 summarizes existing facility dimensions and standards based on small airplanes included in Airplane Design Group II (ADG II) and Aircraft Approach Category B. **Figure 4-1** presented earlier in the chapter illustrates nonstandard conditions noted in the sections below and also depicts the footprint of the runway safety area, object free area, obstacle free zone, and runway protection zones that are associated with the current runway based on 1-mile approach visibility minimums and ARC B-II.

TABLE 4-1: AIRPORT DESIGN STANDARDS SUMMARY (DIMENSIONS IN FEET)

FAA DESIGN STANDARD	RUNWAY 8/26 EXISTING CONDITIONS ¹	RUNWAY DESIGN CODE A/B-II AIRPLANE DESIGN GROUP II (A&B) TAXIWAY DESIGN GROUP 2 <i>APPROACH VISIBILITY NOT LOWER THAN 1 MILE</i>	EXISTING FACILITY CONFIGURATION CONFORMS TO CURRENT FAA STANDARD (YES/NO)
Runway Length	4,156	3,580/4,210 ⁵	Yes
Runway Width	75	75	Yes
Runway Shoulder Width	10	10	Yes
Runway Safety Area (RSA)			
Width	150	150	Yes
Length Beyond Departure End	300	300	Yes
Length Prior to Landing Threshold	300	300	Yes
Runway Obstacle Free Zone (ROFZ)			
Width	250	400	No ⁹
Length Beyond Runway End	200	200	Yes
Length Prior to Landing Threshold	200	200	Yes



Runway Object Free Area (ROFA)			
Width	500	500	Yes
Length Beyond Runway End	300	300	Yes
Length Prior to Landing Threshold	300	300	Yes
Approach/Departure Runway Protection Zone (RPZ)			
Length	1,000	1,000	Yes
Inner Width	500	500	Yes
Outer Width	700	700	Yes
Runway Centerline to:			
Parallel Taxiway/Taxilane Centerline	240	240	Yes
Aircraft Parking Line	250/305.5 ²	250/320 ⁶	Yes
Building Restriction Line	404 ³	404 ⁷	Yes
Taxiway Width	35	35	Yes
Taxiway Shoulder Width	10	10	Yes
Taxiway Safety Area Width	79	79	Yes
Taxiway Object Free Area Width	131	131	Yes
Taxiway Centerline to Fixed/Movable Object	65.5	65.5	Yes
Taxilane Object Free Area Width	<115 ⁴	115 ⁸	No ⁴
Taxilane Centerline to Fixed/Movable Object	<57.5 ⁴	57.5 ⁸	No ⁴

Table 4-1 Notes:

- Existing airfield dimensions as depicted on current ALP (October 2011 revision of 2001 drawing)
- The portion of the south aircraft parking line (APL) located adjacent the south parallel taxiway is 305.5' feet from runway centerline on the current ALP. Nearest aircraft parking (aerial applicator loading apron) is located approximately 530 feet south of runway centerline.
- The north and south BRLs are based on clearance for a 22-foot building height (above runway elevation).
- Main apron taxilane clearance to aircraft tiedowns (less than ADG II standard).
- Per FAA Runway Length Model: Runway lengths required to accommodate 95 and 100 percent of the small airplane fleet (12,500 pounds or less) at Lexington Airport. 85.2 degrees F, 52-foot change in runway centerline elevation.
- 320 feet is required to clear the parallel taxiway object free area for the existing 240-foot runway separation and accommodate an aircraft tail height of 10 feet (typical single engine airplane) at the APL without penetrating the 7:1 transitional surface. Setbacks for larger aircraft are greater and would depend on tail height and clearance of transitional surface slope. 250 feet is the minimum standard for ADG II runways without a parallel taxiway.
- Distance required to accommodate 22-foot structure (typical small/medium hangar roof heights) without penetrating the 7:1 transitional surface and to remain clear of the object free area established for the parallel taxiways. Setbacks for larger hangars are greater and would depend on roof elevation and clearance of transitional surface slope.
- ADG I taxilane OFA standards (79 feet) apply to the taxilane that provides access to the south side of the multi-unit hangar.
- Based on current and forecast activity, the runway OFZ width increases to 400 feet. The aircraft hold lines located on the two exit taxiways and on the aircraft hold area adjacent to the runway are 125 feet from runway centerline, which coincided with the outer edge of the previous OFZ (250 feet wide) based on small aircraft. The aircraft hold lines will need to be relocated 200 feet from runway centerline to clear the current OFZ (400 feet wide).

***Airport Planning & Design Standards Note:***

The following FAA standards are recommended for use in evaluating Runway 8/26 and its taxiway system:

- *Runway Design Code (RDC) A/B-II (not lower than 1 mile approach visibility minimums)*
- *Taxiway Design Group 2*
- *Airport Reference Code (ARC) B-II*
- *FAR Part 77 Other-Than-Utility, Nonprecision Instrument Runway*

All references to the “standards” are based on these assumptions, unless otherwise noted. (Per FAA Advisory Circular 150/5300-13a and FAR Part 77.25)

Runway Safety Area (RSA)

The FAA defines runway safety area (RSA) as “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.” Runway safety areas are most commonly used by aircraft that inadvertently leave (or miss) the runway environment during landing or takeoff.

By FAA design standard, the runway safety area “shall be:

- (1) cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;*
- (2) drained by grading or storm sewers to prevent water accumulation;*
- (3) capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and*
- (4) free of objects, except for objects that need to be located in the runway safety area because of their function. Objects higher than 3 inches above grade should be constructed on low impact resistant supports (frangible mounted structures) of the lowest practical height with the frangible point no higher than 3 inches. Other objects such as manholes, should be constructed at grade. In no case should their height exceed 3 inches.”*

The recommended transverse grade for the RSA located along the sides of a runway ranges between 1½ and 5 percent from runway shoulder edges. The recommended longitudinal grade for the first 200 feet of RSA beyond the runway end is 0 to 3 percent. The remainder of the RSA must remain below the runway



approach surface slope. The maximum negative grade is 5 percent. Limits on longitudinal grade changes are plus or minus 2 percent per 100 feet within the RSA.

The RSA for Runway 8/26 (150 feet wide, extending 300 feet beyond each runway end) was designed to meet FAA (ADG II) dimensional and surface condition standards as part of the recent runway reconstruction project. The RSA is free of physical obstructions, except items permitted by FAA that are installed on frangible (break away) supports (runway lights, information/directional signs, precision approach path indicators, etc.).

Runway pavement edges should be periodically inspected to ensure that grass, dirt or gravel build ups do not exceed 3 inches. The RSA should be regularly cleared of brush or other debris and periodically graded and/or compacted to maintain FAA standards, as needed. Any future runway extensions would require corresponding RSA improvements based on the applicable design standard.

Runway Object Free Area (ROFA)

Runway object free areas (ROFA) are two dimensional surfaces intended to be clear of ground objects that protrude above the runway safety area edge elevation. Obstructions within the object free area may interfere with aircraft flight in the immediate vicinity of the runway. The FAA defines the object free area clearing standard:

“The object free area clearing standard requires clearing the object free area of above ground objects protruding above the runway safety area edge elevation. Except where precluded by other clearing standards, it is acceptable to place objects that need to be located in the object free area for air navigation or aircraft ground maneuvering purposes and to taxi and hold aircraft in the object free area. Objects non-essential for air navigation or aircraft ground maneuvering purposes are not to be placed in the object free area. This includes parked airplanes and agricultural operations.”

The ROFA for Runway 8/26 (500 feet wide, extending 300 feet beyond each runway end) appears to be free of physical obstructions (excluding navigational aids, lighting, airfield signs, etc.) and meets FAA dimensional standards. FAA OFA grading standards were revised with the most recent revision of the FAA Airport Design Standards (AC 150-5300-13A). Based on current standards, the portion of the OFA that extends outward beyond the sides of the runway safety area (RSA) for Runway 8/26 requires additional grading. Any future runway extensions would require corresponding object free area improvements based on the applicable design standard. The ROFA should be periodically inspected to remove any protruding objects and clear vegetation.



Obstacle Free Zone (OFZ)

Obstacle free zones (OFZ) are planes of clear airspace extending upward above runways that are intended to protect close-in obstructions that may create hazards for aircraft. The FAA defines the following clearing standard for the OFZ:

“The obstacle free zone clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible visual NAVAIDs [navigational aids] that need to be located in the obstacle free zone because of their function.”

The FAA defines four types of obstacle free zones based on approach capabilities, runway configuration, and type of aircraft use. For Runway 8/26 only the *Runway* OFZ is required. Other OFZ types designed for runway ends with approach lights, significantly lower approach visibility minimums, or precision instrument approaches are not applicable to Runway 8/26.

The FAA defines the Runway Obstacle Free Zone as:

“The runway OFZ [obstacle free zone] is a defined volume of airspace centered above the runway centerline. The runway OFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet beyond each end of the runway.”

For Runway 8/26, the runway OFZ has a width of 400 feet based on the runway accommodating large airplanes (weighing more than 12,500 pounds). A review of terrain surrounding the runway will be conducted to determine if any grading is required to meet FAA clearing standards.

Based on a recent visual inspection conducted during the master plan inventory, no other penetrations to the existing runway OFZ were observed, other than the runway lights, precision approach path indicator units, and directional signage which have locations fixed by function. All items currently located within the runway OFZ meet the FAA frangibility (break away) standard.

The existing aircraft hold lines are located 125 feet from runway centerline on each of the exit taxiways connecting to the runway. The hold lines will need to be relocated to 200 feet from runway centerline to clear the 400-foot wide ROFZ. The aircraft turnout at the end of Runway 8 is located entirely within the ROFZ. Options for expanding the hold area will be considered in the alternatives analysis to address the FAA design standard.



Taxiway Safety Area (TSA)

Taxiway safety areas (TSA) serve a similar function as runway safety areas and use the same design criteria for surface condition with varying dimensions based on airplane design group. The parallel taxiway, exit taxiways, and the three access taxiways on the airfield are designed to accommodate the same design aircraft as the runway (Airplane Design Group II). The ADG II standard TSA dimension is 79 feet, centered on the taxiway, extending 39.5 feet each side of centerline. Based on the existing 35-foot width on the main taxiways, the TSA extends outward 22 feet beyond the taxiway pavement edges.

Items within TSAs that have locations fixed by function (taxiway reflectors, edge lights, signs, etc.) must be mounted on frangible (break away) mounts. Based on a recent visual inspection conducted during the master plan inventory, all of the taxiways appear to meet the surface condition and obstruction clearing standards required for taxiway safety areas.

The ground surface located immediately adjacent to taxiways requires periodic maintenance to adequately support the weight of an aircraft or an airport vehicle. Grading and/or soil compaction within taxiway safety areas should be completed as needed, and grass, brush or other debris should be regularly cleared to maintain FAA standards. Taxiway pavement edges should be periodically inspected to ensure that grass, dirt or gravel build ups do not exceed 3 inches.

It is noted that safety area standards do not apply to *taxilanes* typically located within hangar developments or aircraft parking aprons. Taxilanes provide aircraft access within a parking or hangar area; taxiways provide aircraft access between points on the airfield and serve runways (e.g. parallel taxiways and exit taxiways).

Taxiway/Taxilane Object Free Area

Taxiway and taxilane object free areas (OFA) are intended to provide unobstructed taxi routes (adequate wingtip clearance) for aircraft. The outer edge of the OFA defines the recommended standard distance from taxiway or taxilane centerline to a fixed or moveable object. The FAA clearing standard prohibits service vehicle roads, holding or parked aircraft, and above ground objects (hangars, other built items, etc.), except for objects with locations that are fixed by function (navigational aids, airfield signs, etc.).

The major taxiways and taxilanes at Lexington Airport accommodate ADG II aircraft. The taxilane located at the west end of main apron provides access to the south side of the multi-unit hangar, which accommodates only small (ADG I) airplanes.



TAXIWAYS

The standard ADG II taxiway OFA width dimension is 131 feet, which extends outward 65.5 feet from centerline in both directions. As with the taxiway safety area, any items within the taxiway OFA that have locations fixed by function, must be frangible (break away mount) to meet the FAA clearing standard. There are no known obstructions located in any existing taxiway OFAs on the airport.

TAXILANES

The standard ADG II taxilane OFA width dimension is 115 feet, which extends outward 57.5 feet from centerline in both directions. The standard ADG I taxilane OFA width dimension is 79 feet (39.5 feet from centerline in both directions).

A portion of the small airplane tiedown area on the main apron is located within the main access taxilane OFA on its south side. The aviation fuel storage tank, pumps, and a small portion of the aircraft fueling apron are located beyond the 115-foot ADG II OFA for the two adjacent taxilanes (east and south).

Figure 4-1, presented earlier in the chapter, illustrates the nonstandard taxilane OFA clearances on the apron. Options for reconfiguring/expanding the main apron and taxilanes to conform to applicable design standards will be included in the development alternatives analysis. When required to meet FAA design standards, changes in existing apron configurations are typically implemented when the apron areas are rehabilitated, reconfigured, or expanded. New aircraft parking aprons should be designed to provide standard taxilane OFA clearances to the adjacent parked aircraft.

Building Restriction Line (BRL)

A building restriction line (BRL) identifies the minimum setback required to accommodate a typical building height, such as a T-hangar or large conventional hangar, based on the ability to remain clear of all runway and taxiway clearances on the ground, and the protected airspace surrounding a runway. Taller buildings are located progressively farther from a runway in order to remain beneath the 7:1 Transitional Surface slopes that extend laterally from both sides of a runway.

The 2001 Airport Layout Plan depicts 250-foot BRLs on both sides of the Runway 8/26. The 250-foot BRLs accommodate structures with roof heights up to 22 feet above runway elevation (at the BRL) without penetrating the runway transitional surface. Taller structures require increased setback distances from the runway in order to avoid penetrating the runway transitional surface.

All new construction on the airport and in the immediate vicinity of the airport requires FAA review for airspace compatibility. FAA Form 7460-1, Notice of Proposed Construction or Alternation, should be prepared and submitted to FAA at least 45 days prior to planned construction. The 7460 form should be submitted by the County for any projects located on the airport and submitted by the applicant for any



projects located off airport property (coordinated with Morrow County). The FAA reviews all proposed development to determine if the proposed action would create any obstructions to FAR Part 77 airspace surfaces, airspace associated with instrument approach and departure procedures, airspace defined for visual landing aids (PAPI, VASI, etc.), and visual airport traffic patterns. The FAA will generally object (notice of presumed hazard) to proposals that result in a penetration to any defined airspace surfaces on the basis of safety. The Oregon Department of Aviation (ODA) also requires coordination of the 7460s through their agency.

Local officials responsible for land use or building permit approvals are encouraged to require the applicant to obtain a written “no objection” or “mitigated hazard” determination from FAA for all development proposals as a condition of permit approval. Permitting development in accordance with FAA technical findings is recommended to address issues related to public safety, legal responsibility for land use actions, and the protection of federally-defined airspace.

Runway Protection Zones (RPZ)

The FAA provides the following definition for runway protection zones:

“The RPZ’s [runway protection zone] function is to enhance the protection of people and property on the ground. This is best achieved through airport owner control over RPZs. Control is preferably exercised through the acquisition of property interest in the RPZ. The RPZ is trapezoidal in shape and centered about the extended runway centerline. Such control includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities. The RPZs begin approach and departure 200 feet beyond the runway threshold or runway end.”

Runway protection zones (RPZ) with buildings, roadways, or other items do not fully comply with FAA standards. It is recognized that realigning major surface roads located within the runway protection zone may not always be feasible. It is recommended that airport sponsors control the RPZs through ownership whenever possible. Alternatively, avigation easements¹ should be acquired where the airport purchases an easement that limits the height of any constructed items and may limit types of uses or activities that are allowed in the area.

The existing RPZs for Runway 8 and 26 are consistent with approach visibility minimums not lower than 1-mile. The RPZ dimensions are 1,000 feet (length), 500 feet (inner end), and 700 feet (outer end), totaling 13.8 acres each. Portions of both RPZs extend off airport property. Morrow County has acquired avigation easements for all portions of the RPZs that are not in ownership.

¹ An avigation easement (*avigation = aviation + navigation*) involves the purchase of airspace rights over a particular defined ground area. The easement normally limits the maximum height of any natural or built items and may include provisions restricting the type of activities permitted. Compensation is negotiated between the airport owner and property owner.



As noted in the conformance section at the beginning of the chapter, the FAA has recently released new guidance regarding runway protection zones and roads, which have previously been discouraged within RPZs but not prohibited. The policy directs airport sponsors to evaluate alternatives to any planned changes to existing RPZs that would introduce or increase the presence of roads in RPZs. No changes to, or within the RPZs for Runway 8/26 are anticipated and no further action is recommended at this time.

Aircraft Parking Line

The aircraft parking line (APL) represents the minimum setback required for locating aircraft parking in order to clear the adjacent runway-taxiway system. The location of the APL is generally determined by the more demanding of runway airspace clearance and taxiway obstruction clearance.

Based on current approach capabilities, Runway 8/26 has a 500-foot wide primary surface. The runway transitional surface extends outward from the edges of the primary surface at a slope of 7:1 to an elevation 150 feet above the published airport elevation (typically the high point on the runway).

The current ALP depicts an aircraft parking line (APL) 65.5 feet south of the south parallel taxiway, which is 305.5 feet from runway centerline. At this location an aircraft tail height of 7.9 feet could be accommodated at the APL without penetrating the runway transitional surface (assuming the same ground elevation as the runway). The APL location has not been an issue since the nearest aircraft parking area is located 530 feet from runway centerline.

Relocating the APL to 320 feet from runway centerline should be considered in the event that future apron expansion options are considered between the parallel taxiway and the existing apron. At 320 feet, tail heights up to 10 feet, typical of small aircraft, could be accommodated without penetrating the transitional surface. Larger aircraft parking areas should be located accordingly based on the typical tail height of the aircraft being accommodated. Common tail heights for small single-engine aircraft are 10 feet or less; 10 to 15 feet for multi-engine piston and business class turboprops; and up to 25 feet for large business jets. For example, a parking area for a medevac multi-engine turboprop with a 15-foot tail height should be at least 355 feet from runway centerline. This distance captures $\frac{1}{2}$ of the 500-foot wide runway primary surface (250 feet) plus 105 feet to account for the distance needed to clear a 15-foot high tail under the 7:1 transitional surface slope.

Runway - Parallel Taxiway Separation

Runway 8/26 has a partial-length south parallel taxiway with a runway separation of 240 feet, which meets the B-II standard 240 feet.



FAR Part 77 Surfaces

Airspace planning for U.S. airports is defined by Federal Aviation Regulations (FAR) Part 77 – Objects Affecting Navigable Airspace. FAR Part 77 defines imaginary surfaces (airspace) to be protected surrounding airports. **Figures 4-2 and 4-3** on the following pages illustrate plan and isometric views of generic FAR Part 77 surfaces.

The change in design aircraft described in the forecast chapter triggers a change in runway designation, as defined in FAR Part 77. The 2001 Airspace Plan depicts airspace surfaces based on “utility” nonprecision approaches for Runway 8/26. The runway now routinely accommodates large airplanes and requires use of “other-than-utility” FAR Part 77 airspace surfaces for the updated Airspace Plan drawing.

The 2001 Airspace Plan depicts areas of terrain penetration in the outer edge of the horizontal surface and conical surface, east of the runway. It is anticipated that the “other-than-utility” airspace will have larger areas of terrain penetration in the horizontal and conical surfaces.

A review of topographical mapping will be conducted to verify the obstruction clearance for all airspace surfaces associated with Lexington Airport as part of the drawing update. Updated obstruction data (where available) will be added to the updated airspace plan being prepared in the master plan update. Data gathered during future obstruction surveys should be added to the airspace plan drawing through periodic updates.

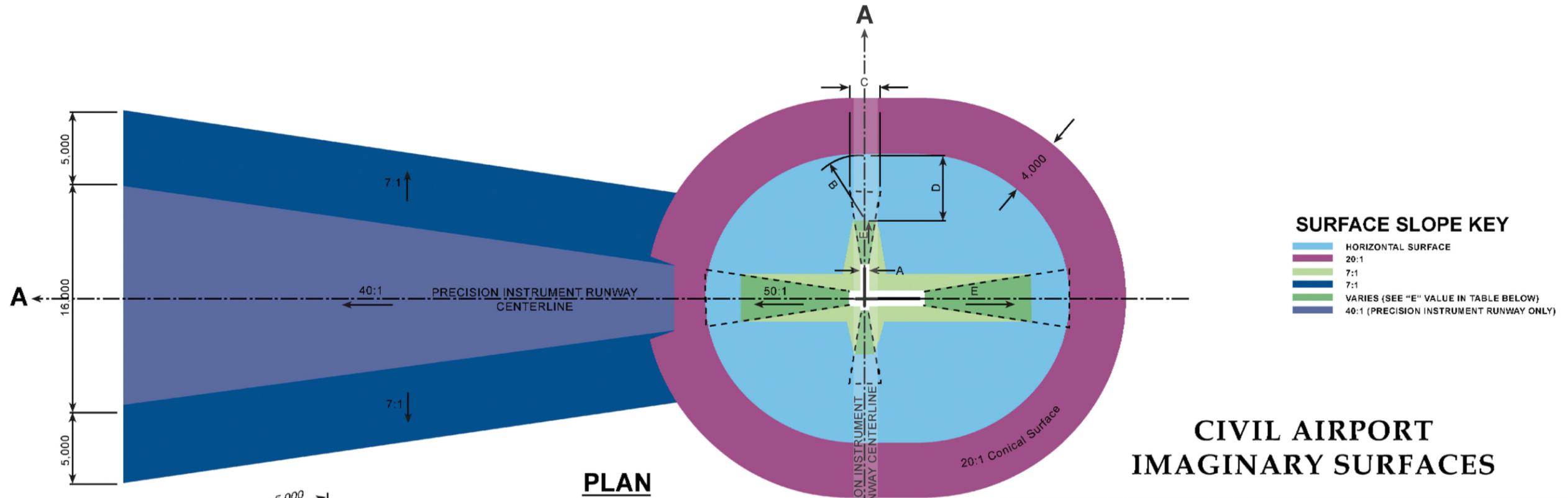
Note: For instrument runways, the FAA establishes a 40:1 departure surface that extends 10,200 feet from far end of each runway authorized for departures in instrument flight rules (IFR) conditions. The departure surfaces and other airspace defined in FAA Order 8260.3B Terminal Instrument Procedures have been in place since the airport’s instrument procedures were published by the FAA in 2003. The Terminal Instrument Procedures (TERPS) airspace for the existing instrument approach and departure procedures are not affected by the change in FAR Part 77 airspace designation.

Table 4-2 summarizes the FAR Part 77 airspace surface dimensions required for Runway 8/26 based on existing and planned approach capabilities. Runway 8 has a straight-in nonprecision approach, which requires a nonprecision approach surface. Runway 26 accommodates visual approaches from instrument approaches with a “circling” procedure. A “circling” approach procedure guides aircraft to the airport environment, rather than to a particular runway end. Once the pilot establishes visual contact with the airport environment, they proceed to land on the runway in use. Based on this configuration, Runway 26 requires a visual approach surface.



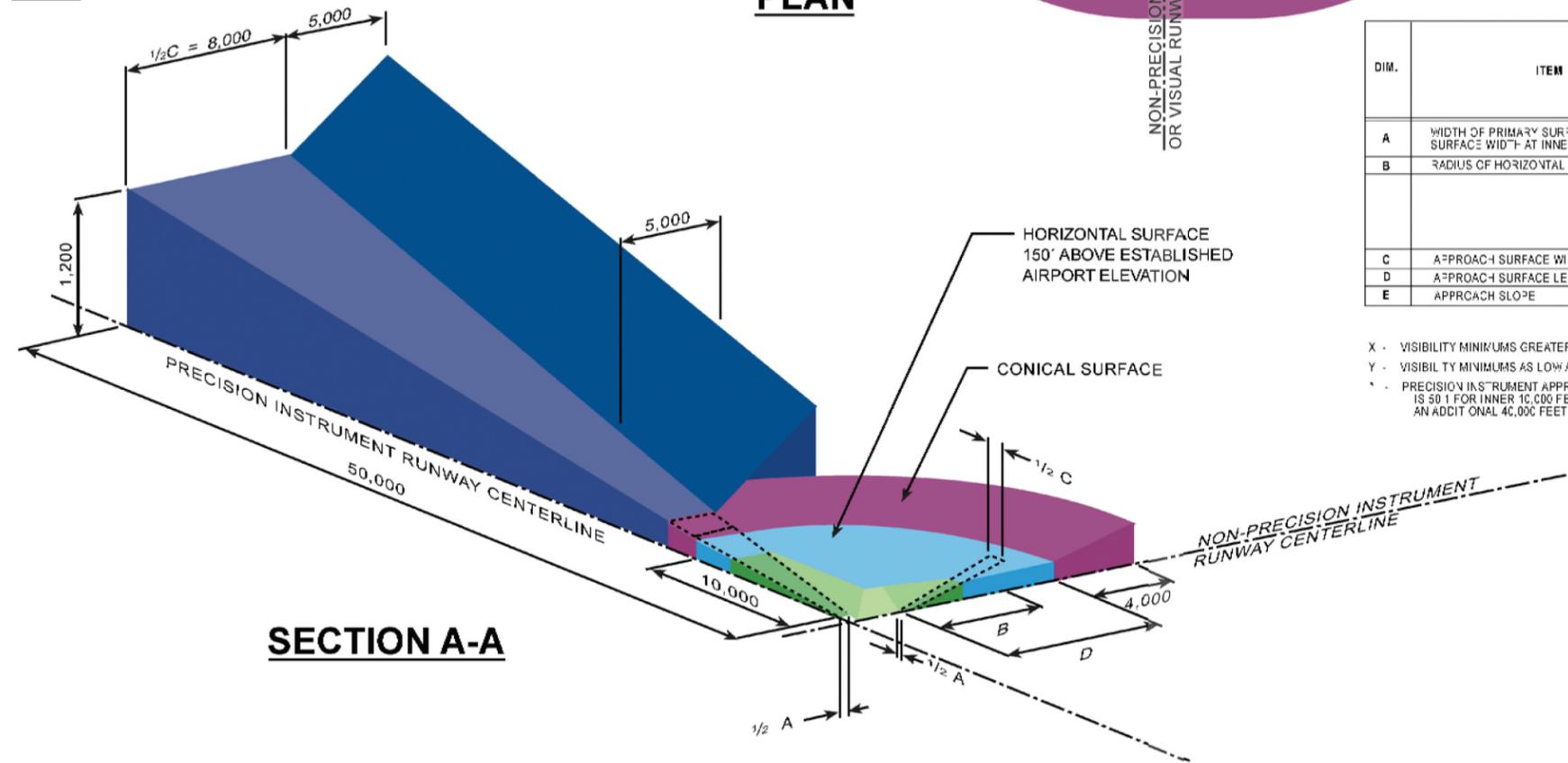
TABLE 4-2: FAR PART 77 AIRSPACE SURFACES

ITEM	RUNWAY 8/26 <i>Other than Utility (Nonprecision) (Standard Based on Current Approach Capabilities)</i>
Primary Surface Width	500 feet
Transitional Surface	7:1 Slope to 150 feet above runway
Horizontal Surface Elevation/Radius	150 feet above airport elevation/10,000 feet from each runway end
Conical Surface	20:1 for 4,000 feet
Approach Surface Length	Rwy 8: 10,000 feet Rwy 26: 5,000 feet
Approach Surface Slope	Rwy 8: 34:1 Rwy 26: 20:1
Approach Surface Width at End	Rwy 8: 3,500 feet Rwy 26: 1,500 feet



PLAN

CIVIL AIRPORT IMAGINARY SURFACES

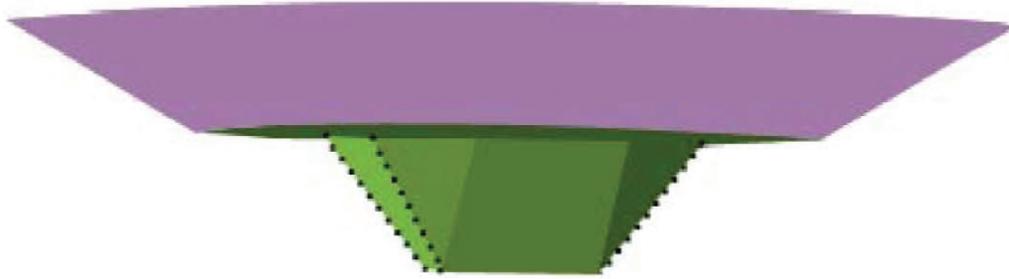


SECTION A-A

DIM.	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY		PRECISION INSTRUMENT RUNWAY	
		UTILITY	LARGER THAN UTILITY	UTILITY	LARGER THAN UTILITY		
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
C	APPROACH SURFACE LENGTH	VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH		PRECISION INSTRUMENT APPROACH	
		UTILITY	LARGER THAN UTILITY	UTILITY	LARGER THAN UTILITY		
D	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	15,000
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

X - VISIBILITY MINIMUMS GREATER THAN 1/4 MILE
 Y - VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
 * - PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET





PROTECTED AIRSPACE

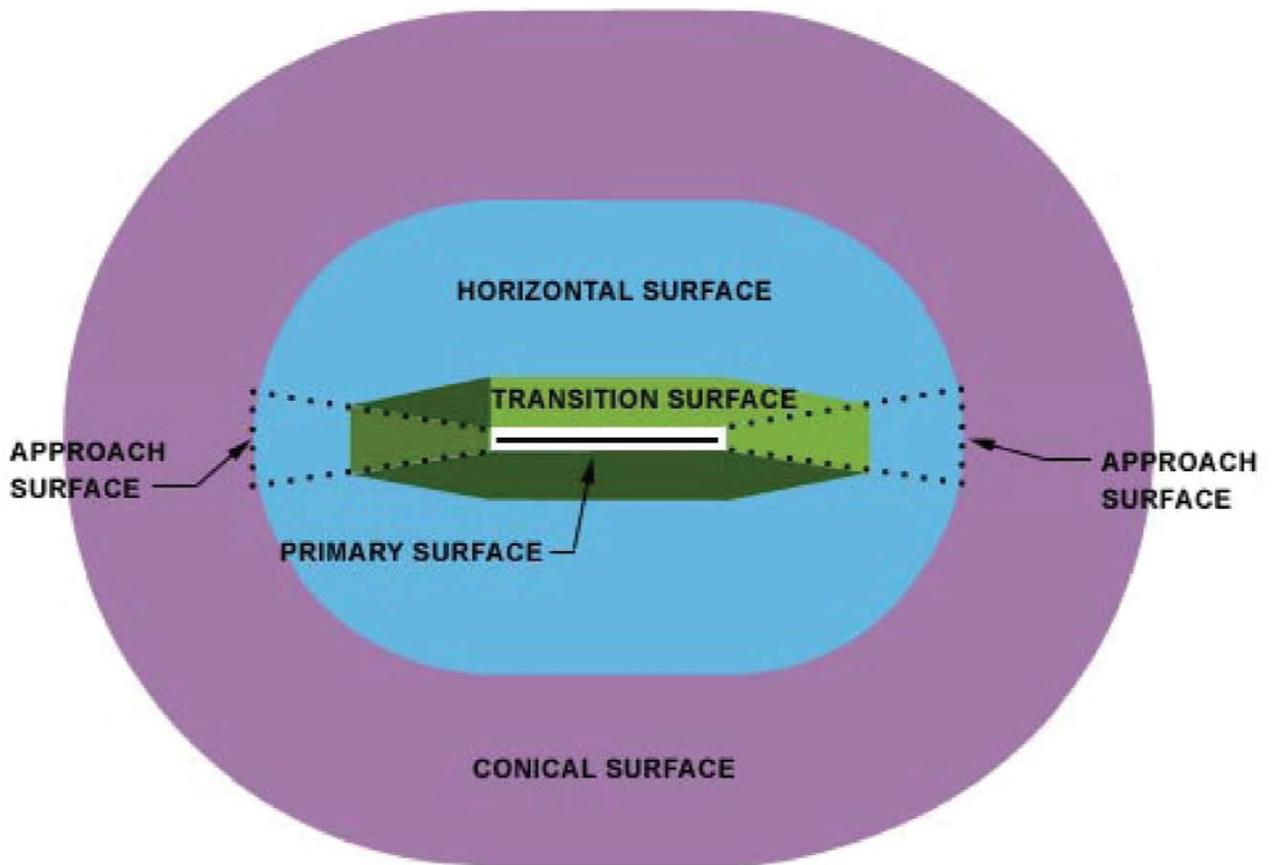


IMAGE SOURCE: WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (AVIATION DIVISION).





APPROACH SURFACES

Runway approach surfaces extend outward and upward from each end of the primary surface, along the extended runway centerline. As noted earlier, the dimensions and slope of approach surfaces are determined by the type of aircraft intended to use the runway and most demanding approach planned for the runway.

Based on current capabilities, the approach surface required for Runway 8 is 10,000 feet long with a slope of 34:1. The approach surface required for Runway 26 is 5,000 feet long with a slope of 20:1. Elevation data and locations of terrain and built item penetrations will be added to the airspace plan and the obstruction data for these items will be reviewed to determine if any obstruction removal or mitigation (e.g., red obstruction lighting) is recommended. Vehicles traveling on the airport access road and Highway 207 do not penetrate the Runway 26 approach surface. Highway 74 is located approximately 3,300 feet from the Runway 8 threshold and vehicles traveling on the highway do not appear to penetrate the 34:1 approach surface.

PRIMARY SURFACE

The primary surface is a rectangular plane of airspace, which rests on the runway (at centerline elevation) and extends 200 feet beyond the runway end. The primary surface width depends on the runway approach capabilities (visual, nonprecision instrument, precision instrument). The primary surface should be free of any penetrations, except items with locations fixed by function (i.e., PAPI, runway or taxiway edge lights, etc.). The primary surface end connects to the inner portion of the runway approach surface.

Based on current capabilities, the primary surface required for Runway 8/26 is 500 feet wide. This width was depicted on the 2001 Airspace Plan based on the planned instrument approach capabilities and obstructions to the primary surface were identified.

TRANSITIONAL SURFACE

The transitional surface is located at the outer edge of the primary surface, represented by a plane of airspace that rises perpendicularly at a slope of 7 to 1, until reaching an elevation 150 feet above runway elevation. This surface should be free of obstructions (i.e., parked aircraft, structures, trees, etc.). No terrain, tree, building, or parked aircraft penetrations were identified within the Runway 8/26 transitional surfaces on the 2001 Airspace Plan.

HORIZONTAL SURFACE

The horizontal surface is a flat plane of airspace located 150 feet above runway elevation with its boundaries defined by radii that extend from each runway end. The outer points of the radii for each runway are connected to form an oval, which is defined as the horizontal surface.



Based on current capabilities, the horizontal surface required for Runway 8/26 extends 10,000 feet from each runway end. Elevation data and locations for any terrain or built item penetrations will be added to the Airspace Plan and the obstruction data for these items will be reviewed to determine if any obstruction removal or mitigation (e.g., red obstruction lighting) is recommended. The elevation of the horizontal surface is 1,785 feet MSL, which is 150 feet above the (surveyed) high point on the runway 1,634.5 feet MSL. As noted earlier, it is anticipated that the larger “other-than-utility” horizontal surface will have larger areas of terrain penetration east of the runway than the surface previously defined for “utility” runways.

CONICAL SURFACE

The conical surface is an outer band of airspace, which abuts the horizontal surface. The conical surface begins at the elevation of the horizontal surface and extends outward 4,000 feet at a slope of 20:1. The top elevation of the conical surface for Runway 8/26 is 1,985 feet MSL, 200 feet above the horizontal surface and 350 feet above airport elevation. The larger horizontal surface now required will shift the conical surface outward by 5,000 feet, compared to location previously defined for “utility” runways. Terrain penetrations to the east and northeast of the runway were depicted within the conical surface on the 2001 Airspace Plan. The terrain penetrations did not prevent development of the airport’s two instrument approaches and identifying larger areas of terrain penetration east of the runway is not expected to affect the current instrument procedures.

Airside Requirements

Airside facilities are those directly related to the arrival and departure and movement of aircraft:

- Runways
- Taxiways
- Airfield Instrumentation and Lighting

RUNWAYS

The adequacy of the existing runway system at Lexington Airport was analyzed from a number of perspectives including runway orientation, airfield capacity, runway length, and pavement strength.

RUNWAY ORIENTATION & WIND COVERAGE

The orientation of runways for takeoff and landing operations is primarily a function of wind velocity and direction, combined with the ability of aircraft to operate under adverse wind conditions. A runway’s wind coverage is measured by an aircraft’s ability to operate with a “direct” crosswind, which is defined as 90 degrees to the direction of travel. For runway planning purposes, the maximum direct crosswind for small aircraft is 12 miles per hour; larger general aviation aircraft are typically designed to accommodate a 15 mile-per hour direct crosswind. Aircraft are able to operate safely in progressively higher wind speeds as the



crosswind angle decreases and the wind direction turns more closely to the direction of flight. In addition, some aircraft are designed to safely operate with higher crosswind components. Ideally, an aircraft will take off and land directly into the wind or with light crosswind. The FAA recommends that primary runways accommodate at least 95 percent of local wind conditions; when this level of coverage is not provided, the FAA recommends development of a secondary (crosswind) runway if demand justifies the cost.

The 2001 Airport Layout Plan indicates that Runway 8/26 has estimated wind coverage of 95 percent at 12 miles per hour. The source of the wind data was from analysis of airports in Pendleton, Condon, and The Dalles in 1983. Wind data collected from the on-site automated weather observation system (AWOS) was obtained from the National Weather Service and analyzed to determine wind coverage for Runway 8/26 based on actual observations. The data indicates that Runway 8/26 has 93.74 percent coverage based on a 12-mile per hour crosswind component. Local pilots indicate that northeast-southwest crosswinds are common and landing on 8/26 can sometimes be difficult in high wind situations. A wind rose will be developed and depicted on the updated ALP drawing set. Since the existing wind coverage is below the FAA-recommended threshold of 95 percent, an updated assessment of airside development options will be performed to determine feasibility and need.

RUNWAY LENGTH

Runway length requirements are based primarily upon airport elevation, mean maximum daily temperature of the hottest month, runway gradient, and the critical aircraft type expected to use the runway.

The existing and future design aircraft identified in the updated aviation activity forecasts (Chapter 3) is an Air Tractor 802 (AT-802) single-engine turboprop aerial applicator aircraft. The AT-802 is equipped with a 1,295 horsepower turbine engine and 5-bladed propeller, which allows it to safely operate from very short runways. As such this aircraft does not represent the most demanding aircraft in terms of runway length requirements.

A common planning approach for general aviation runways accommodating a combination of single-engine and multi-engine aircraft is to base future runway length planning on 95 or 100 percent of the small airplane fleet (aircraft 12,500 pounds and less). The 95 percent threshold appears reasonable for Runway 8/26 and will also allow the runway to accommodate transient turbine aircraft (turboprops and business jets) in a variety operating conditions.

FAA Advisory Circular (AC) 150-5325-4B, [Runway Length Requirements for Airport Design](#) provides the following guidance on determining the appropriate percentage of the fleet for runway length planning for small aircraft:



- (a) **Selecting Percentage of Fleet.** The differences between the two percentage categories are based on the airport’s location and the amount of existing or planned aviation activities. The airport designer should make the selection based on the following criteria.
- (1) **95 Percent of Fleet.** This category applies to airports that are primarily intended to serve medium size population communities with a diversity of usage and a greater potential for increased aviation activities. Also included in this category are those airports that are primarily intended to serve low-activity locations, small population communities, and remote recreational areas. Their inclusion recognizes that these airports in many cases develop into airports with higher levels of aviation activities.
 - (2) **100 Percent of Fleet.** This type of airport is primarily intended to serve communities located on the fringe of a metropolitan area or a relatively large population remote from a metropolitan area.
- (b) **Future Airport Expansion Considerations.** Airports serving small airplanes remain fairly constant in terms of the types of small airplane using the airport and their associated operational requirements. However, it is recommended that the airport designer assess and verify the airport’s ultimate development plan for realistic changes that, if overlooked, could result in future operational limitations to customers. The airport designer should at least assess and verify the impacts of:
- (1) Expansions to accommodate airplanes of more than 12,500 pounds (5,670 kg). Failure to consider this change during an initial development phase may lead to the additional expense of reconstructing or relocating facilities in the future.
 - (2) Requirements to operate the runway during periods of Instrument Meteorological Conditions (IMC). The requirement for this capability is highest among airplanes used for business and air taxi purposes.

A summary of FAA recommended runway lengths for planning based on the requirements of small aircraft is presented in **Table 4-3**.

TABLE 4-3: FAA RECOMMENDED RUNWAY LENGTHS FOR PLANNING (FROM FAA COMPUTER MODEL)

Runway Length Parameters for Lexington Airport	
•	Airport Elevation: 1,634 feet MSL
•	Mean Max Temperature in Hottest Month: 85.2 F
•	Maximum Difference in Runway Centerline Elevation: 52 Feet
•	Existing Runway Length: 4,155 feet
Small Airplanes with less than 10 seats	
➤	75 percent of these airplanes 3,010 feet
➤	95 percent of these airplanes 3,580 feet
➤	100 percent of these airplanes 4,210 feet
➤	Small airplanes with 10 or more seats 4,500 feet



Based on local conditions and the methodology outlined in **AC 150/5324-4B**, the current runway length of 4,155 can accommodate approximately 99.5 percent of small airplane fleet (12,500 pounds or less maximum gross takeoff weight) and is only 55 feet less than the length required to accommodate 100 percent of the small airplane fleet. A runway length of approximately 5,400 feet is needed to accommodate a wide range of business aircraft. The updated aviation activity forecasts do not identify sufficient activity of this type to meet the FAA’s “substantial use” threshold of 500 annual operations. However, the County may wish to consider depicting a runway extension reserve beyond the west end of Runway 8/26 on the updated Airport Layout Plan if there is a desire to protect long-term development options for the airport.

RUNWAY WIDTH

Runway 8/26 is 75 feet wide, which meets the ADG II standard (75 feet).

AIRFIELD PAVEMENT

As noted in the Inventory Chapter, the runway, aircraft hold area, parallel taxiway, exit taxiways, the western and center access taxiways, and most of the main apron have been constructed, reconstructed, or rehabilitated since 2006. The 2011 Pavement Evaluation / Maintenance Management Program for Lexington Airport includes pavement inspections conducted in June 2011 (prior to the runway reconstruction). **Table 4-4** summarizes the pavement condition index (PCI) ratings for 2011 and the predicted conditions for 2016 and 2021, assuming no maintenance is performed. The PCI rating scale is 0 to 100. 100 represents new pavement and 0 represents “failed” pavement.

Prior to reconstruction later in 2011, the runway was rated “poor” and the aircraft hold area at the west end of the runway was rated “fair.” Following reconstruction these pavements would be rated “good” with a PCI of 100. All of the taxiways on the airfield, with the exception of the eastern access taxiway, were rated “good.” The eastern access taxiway and the aircraft fueling apron were rated “fair.” A small section of the main apron (near the NE corner of the multi-unit hangar) was rated “satisfactory” and the southeast corner of the apron was rated “serious,” with a PCI of 22. This section of apron is projected to “fail” by 2016 and will require reconstruction, rather than rehabilitation. The other sections of the main apron were rated “good.”

All airfield pavements require periodic crackfilling, vegetation removal and sealcoating to optimize useful life. With effective maintenance, the runway and other recently rehabilitated pavements should not require rehabilitation in the current twenty-year planning period. The eastern access taxiway, aircraft fueling apron, and southeast corner of the main apron will require rehabilitation or reconstruction during the planning period.

**TABLE 4-4: SUMMARY OF AIRFIELD PAVEMENT CONDITION (PCI RATINGS)**

AREA	2011	2016	2021
Runway and Aircraft Turnaround	51/57 (100 after Reconstruction)	Not rated since reconstruction	Not rated since reconstruction
Parallel Taxiway and West Exit Taxiway	100	86	76
East Exit Taxiway (north section)	47 (100 after Reconstruction)	Not rated since reconstruction	Not rated since reconstruction
East Exit Taxiway (section connects to parallel taxiway.)	100	86	76
West Access Taxiway	97	84	74
Center Access Taxiway	100	86	76
East Access Taxiway (main section)	60	52	41
East Exit Taxiway (south section)	56	52	47
Main Apron (Main Section)	100	86	76
SE Section	22	0	0
Fuel Apron	61	54	43
Agriculture Loading Apron	100	86	76

TAXIWAYS

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access between apron and runways, while other taxiways become necessary as activity increases and safer and more efficient use of the airfield is needed. The existing taxiway system at Lexington Airport provides aircraft access to the runway and all landside facilities.

The FAA added taxiway design groups (TDG) in the last major update (9/28/12) of its Airport Design Advisory Circular (AC 150/5300-13A). The standards are based on the outer main gear width and cockpit to main gear distance. Some design elements associated with taxiways remain under airplane design group, while others are included under taxiway design group. With very few exceptions, most aircraft that



are included in ADG II will also be included in TDG 2. For the purposes of this discussion, the standards will be combined (ADG II/TDG 2).

Parallel Taxiway and Access Taxiways

The partial-length south parallel taxiway serving Runway 8/26 provides access to the east 2/3 of the runway from the airport's landside facilities. The parallel taxiway has two 90-degree exit taxiways which facilitate movement of aircraft between the runway and parallel taxiway. The parallel taxiway is 35 feet wide and meets the TDG 2 and ADG II standard. The 240 foot runway-to-parallel taxiway separation also meets ADG II Standards (240 feet).

There is no taxiway access to the west end of the runway. Aircraft are required to back-taxiway on the runway from the west end the parallel taxiway to reach the aircraft turnaround/holding area located adjacent to the Runway 8 threshold. The addition of north-side parallel taxiway extension to reach Runway 8 is depicted on the 2001 ALP and was recommended to improve safety by eliminating runway back-taxiing. An updated evaluation of the taxiway options will be included in the alternatives analysis, although no major capacity or service related improvements are anticipated.

The existing access taxiways that connect the main apron to the parallel taxiway appear to provide efficient aircraft movement and airfield access. The access taxiways are 35 feet wide and meet ADG II and TDG 2 standards.

Taxilanes

As noted earlier, the object free area for the taxilane located on the north side of the main apron and the adjacent aircraft tiedown area conflict. The taxilanes located within the main apron should be configured to provide the standard object free area clearances noted earlier in the chapter. An evaluation of the taxiway and apron reconfiguration options will be included in the alternatives analysis.

AIRFIELD INSTRUMENTATION, LIGHTING AND MARKING

Navigational Aids. There are no ground-based electronic navigational aids located on the airport.

Runway 8/26 currently supports a straight-in nonprecision instrument approach to the Runway 8 end; and a second circling nonprecision instrument approach to the airport environment. Both approaches utilize global positioning system (GPS) satellite technology. The ongoing development and evolution of satellite-based instrument approach platforms has largely eliminated the need for airports to install and maintain conventional navigational aids, such as VORs, localizers or instrument landing systems (ILS). The FAA is currently implementing "NextGen" capabilities in the national airspace system that will eventually allow more efficient movement of aircraft between airports and provide more innovative instrument approach and departure routing and other capabilities.



Runway/Taxiway Lighting. The lighting systems associated with Runway 8/26 were installed new as part of the recent runway reconstruction. The lighting systems include medium intensity runway edge lighting (MIRL), and precision approach slope indicators (PAPI). The systems meet the standard for general aviation runways with visual or nonprecision instrument approaches.

The parallel taxiway and access taxiways are not equipped with blue edge reflectors or edge lighting. Stake-mounted edge reflectors are recommended as a basic safety related improvement. Medium-intensity taxiway lighting (MITL) may be considered if an upgrade from edge reflectors was desired or the level of night operations increased significantly.

Runway Markings. Runway 8/26 has basic (visual) markings. The markings (threshold marking bars, runway end numbers, and centerline stripe) were applied in the 2011 rehabilitation project and are in very good condition. The Runway 8 markings should be upgraded to nonprecision instrument to be consistent with existing instrument approach capabilities (threshold marking bars, runway end numbers and aiming point markings located approximately 1,000 feet from each end of the runway). The Runway 26 markings are consistent with current approach capabilities.

The runway exit taxiways and aircraft hold area have yellow aircraft hold line markings located 125 feet from runway centerline. To comply with the clearance requirements of the 400-foot runway obstacle free zone (OFZ), the hold lines should be moved to 200 feet from runway centerline.

Airfield Signage. The lighted airfield signage (location, mandatory, directional, destination, and distance remaining signs) are internally illuminated and were installed new during the runway and lighting rehabilitation projects and meet all current needs.

Airfield Lighting. The airport rotating beacon was replaced in 2014.

The lighted wind cone on the south side of the runway is in excellent condition.

ON FIELD WEATHER DATA

The airport has an Automated Weather Observation System (AWOS-3), which allows aircraft licensed under FAR Part 135 (air taxi/charter) and private aircraft operating under FAR Part 91 to operate in IFR conditions. The AWOS provides weather data to support airport operations in both visual and instrument conditions.



Landside Facilities

For general aviation airports, landside facilities are generally defined as those that serve aircraft, passenger needs and their related functions. At Lexington Airport, landside facilities include aircraft aprons, hangars, and fixed base operator (FBO) space, and aircraft fueling facilities. The airport does not currently have an FBO to provide services to local or transient general aviation users and all fueling is self-service.

As noted in the Inventory chapter, one 7-unit hangar with taxilane access and a new agricultural aircraft loading apron have been constructed since the last master plan was completed. Portions of the main apron have also been reconfigured.

AIRCRAFT PARKING AND TIEDOWN APRON

Aircraft aprons provide parking for locally based aircraft that are not stored in hangars and for transient aircraft visiting the airport and ground operations such as aircraft fueling. At Lexington Airport, the main apron area accommodates small airplane tiedowns, aircraft fueling, and aerial applicator activity. Larger aircraft parking is also accommodated on the apron (in small airplane tiedown rows), although there are no parking positions designed for larger aircraft.

The main apron tiedown area is arranged with cables to allow flexible aircraft parking for 3 to 4 aircraft. As noted earlier, the existing apron configuration does not meet FAA ADG II taxilane object free area clearance standards. Options for reconfiguring the apron to meet standards will be included in the alternatives evaluation.

All based aircraft at Lexington Airport are currently stored in hangars and no based aircraft are regularly parked in the tiedown area.

Aircraft Parking Demand (Local and Itinerant)

For long-term planning purposes, it is assumed that 95 percent of forecast based aircraft will be stored in hangars and 5 percent will use apron parking. Based on these assumptions, only 1 light aircraft tiedown (rounded up from 0.15) will be required for locally-based aircraft by 2034. This estimate may prove to be overly optimistic in gauging apron parking demand for based aircraft as additional hangar space is developed at the airport. However, this approach will ensure that adequate apron is preserved for long-term use.

FAA Advisory Circular 150/5300-13 suggests a methodology by which itinerant parking requirements can be determined from knowledge of busy day operations. Future demand for itinerant parking spaces was estimated based on 50 percent of design day itinerant operations (50% of daily itinerant operations divided by two, to identify peak parking demand). The FAA planning criterion of 360 square yards per itinerant aircraft was applied to the number itinerant spaces to determine future itinerant ramp



requirements. By 2034, itinerant aircraft parking requirements are estimated to be 3 aircraft parking positions including small airplane tiedowns and large aircraft parking. **Table 4-5** summarizes projected aircraft parking requirements based on the updated aviation activity forecasts.

In order to address the uncertainty associated with predicting long-term demand, aircraft apron reserve areas should be identified to preserve the airport's ability to accommodate user needs. A development reserve area equal to 100 percent of the twenty-year parking demand is recommended as a conservative planning guideline to accommodate unanticipated demand, changes in existing apron configurations, and demand beyond the current planning period. The location and configuration of the development reserves will be addressed in the alternatives analysis.

Aircraft Fueling Apron

The existing aircraft fueling area can accommodate one or two small aircraft on the apron located on the east side of the fuel tanks. However, as noted earlier, the required clearance for the adjacent ADG II taxilane object free area (OFA) reduces the amount of the fueling apron that can be used without conflicting with the taxilane clearance. Options for reconfiguring, expanding or relocating the fueling apron will be addressed in the airport development alternatives.

Aerial Applicator Loading Area

The agricultural apron located adjacent to the western access taxiway has two loading positions and is used periodically by transient agricultural aircraft operators. The locally-based aerial applicator maintains separate facilities on the south end of the main apron and does not use the separate apron. No other facility needs are identified for the apron.

AIRCRAFT HANGARS

Lexington Airport accommodates two aircraft hangars on airport property and one hangar located off airport property. The on-airport hangar used for aircraft storage is a newer 7-unit building that includes six T-hangar units and one larger unit. Eight aircraft are currently accommodated in the multi-unit hangar. The second on-airport hangar is a conventional hangar used for commercial activities and no aircraft storage. The off-airport conventional hangar accommodates the local aerial applicator with two aircraft.

These hangars accommodate 100 percent of the airport's based aircraft fleet. For planning purposes, it is assumed that existing hangar space is committed and all additional (forecast) demand would need to be met through new construction. Airport management indicates that they have a waiting list for hangar space and current demand for long-term tiedown rentals.



As indicated in the aviation activity forecasts, the number of based aircraft at Lexington Airport is projected to increase by 3 aircraft during the twenty-year planning period. Based on a projected 95 percent hangar utilization level, additional long term demand for new hangar space is estimated to be 3 spaces (rounded up from 2.85). A planning standard of 1,500 square feet per based aircraft stored in hangars is used to project gross space requirements (3 aircraft = 4,500 square feet). The projected hangar requirements for aircraft storage at Lexington Airport are presented in **Table 4-5**.

In addition to aircraft storage, additional demand for business related and commercial hangar needs may occur during the planning period. While there is no specific formula to predict demand for business hangars, reserving space for a variety of conventional hangars is recommended.



TABLE 4-5: APRON AND HANGAR FACILITY REQUIREMENTS SUMMARY

ITEM	BASE YEAR (2014)	2019	2024	2029	2034
Based Aircraft Forecast	10	11	12	13	13
Aircraft Parking Apron <i>(Note: capacities reflect current configuration of existing apron areas, actual capacity when reconfigured may be significantly different.)</i>					
Small Aircraft Tiedowns	3-4				
Other Designated Parking Positions	0				
Total Designated Parking Spaces Available					
Ag Aircraft Parking Positions	3				
Total Apron Area <i>(includes taxilanes and unusable space required for hangars access)</i>	10,790 sy				
Projected Needs (Gross Demand)¹					
Itinerant Single Engine Aircraft Tiedowns (@ 360 SY each)		1 space / 360 sy	2 spaces / 720 sy	2 spaces / 720 sy	2 spaces / 720 sy
Locally Based Tiedowns (@ 300 SY each)		1 space / 300 sy	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy
Multi-Engine Aircraft Parking (@ 625 SY each)		1 space / 625 sy	1 space / 625 sy	1 space / 625 sy	1 space / 625 sy
Small Helicopter Parking Positions (@ 380 SY each)		0 space / 0 sy	0 space / 0 sy	0 space / 0 sy	0 space / 0 sy
Total Apron Needs		3 spaces / 1,285 SY	4 spaces / 1,645 SY	4 spaces / 1,645 SY	4 spaces / 1,645 SY
Aircraft Hangars (Existing Hangar Spaces)	10				
Projected Needs (Net Increase in Demand)²					
(New) Hangar Space Demand (@ 1,500 SF per space) <i>(Cumulative twenty year projected demand: 3 spaces / 4,500 SF)</i>		+1 space / 1,500 sf	+1 space / 1,500 sf	+1 spaces / 1,500 sf	+0 spaces / 0 sf

Aircraft parking demand levels identified for each forecast year represent forecast gross demand.
 Hangar demand levels identified for each forecast year represent the net increase above current hangar capacity.

Individual aircraft owners needs vary and demand can be influenced by a wide range of factors beyond the control of an airport. In addition, the very modest forecast growth in based aircraft may be exceeded if conditions are favorable. For this reason, it is recommended that hangar development reserves be identified to address the uncertainty of hangar market conditions and demand factors. Conservative development reserves should be established to accommodate a combination of conventional hangars and T-hangars, roughly equal to 100 percent of the twenty-year forecast (net) demand. The location and configuration of the development reserves will be addressed in the alternatives analysis.



SURFACE ACCESS AND VEHICLE PARKING

The surface access to the terminal area is provided by a paved access road that connects to Highway 207. The roadway continues (unpaved) behind the buildings located on the south side of main apron. Existing access to all developed areas is adequate, although some road improvements may be required to accommodate hangar development on the west end of the terminal area. The paved access road connects directly to the east end of the main apron. Some improvements may be needed to separate adjacent vehicle parking and the aircraft apron in this area.

Support Facilities

AVIATION FUEL STORAGE

The county-owned aviation fuel storage (6,000 gallon Aviation Gasoline) and dispensing facilities appear to be adequate to accommodate current demand. However, it is recommended that additional space be reserved to accommodate additional tanks if demand for jet fuel or automobile gasoline grows. The growth in manufacturing of small turbine aircraft, particularly single-engine turboprops, very light jets, and turbine helicopters will increase demand for jet fuel for transient aircraft, in addition to demand from locally-based turbine aircraft. It is also noted that several light airplane manufacturers are now offering diesel engines (that burn jet fuel) as an alternative to conventional AVGAS-fueled piston engines.

AIRPORT UTILITIES

The existing utilities on the airport appear to be adequate both in capacity and service within the developed areas of the airport. The addition of a large capacity water storage tank should be evaluated for potential benefits for fire protection. Extensions of water and electrical service to serve future landside developments may be required. All power lines located in the vicinity of the airfield should be buried. Expansion or upgrade of existing stormwater systems will be required as the impervious surface on the airport increases through development.

SECURITY

There are no known security issues at the airport. The airport has limited wire fencing on the property line. The AWOS (off airport property) has a chain link fence around the installation.

Additional flood lighting should be considered in expanded aircraft parking and hangar areas and any other new development areas on the airport to maintain adequate security. The use of full or partial cutoff light fixtures is recommended for all exterior lighting on the airport to limit upward glare.



Facility Requirements Summary

The projected twenty-year facility needs for Lexington Airport are summarized in **Table 4-6**. As noted in the table, maintaining existing pavements represents a significant, ongoing facility need. The updated forecasts of aviation activity anticipate modest growth in activity that will result in similarly modest airside and landside facility demands beyond existing capabilities. The existing airfield facilities have the ability to accommodate a significant increase in activity, with targeted facility improvements. For the most part, the need for new or expanded facilities, such as aircraft hangars, will be market driven, although there will be significant front end investments required in preparation, utility extensions, road extensions, and taxiway/taxilane construction. The nonconforming items noted at the beginning of this chapter are relatively minor and can be addressed systematically during the current planning period to improve overall safety for all users.

TABLE 4-6: FACILITY REQUIREMENTS SUMMARY

ITEM	SHORT-TERM	LONG-TERM
Runway 8/26	Pavement Maintenance ¹	Pavement Maintenance ¹
Taxiways	Expand Runway 8 aircraft holding area Pavement Maintenance ¹	Pavement Maintenance ¹ Parallel Taxiway Extension (west)
Aircraft Aprons	Reconfigure/Expand Main Apron and Aircraft Fueling Apron to meet FAA Design Standards Pavement Maintenance ¹	Pavement Maintenance ¹ Apron Development Reserves
Hangars	Define development areas for multi-unit and conventional hangars.	Hangar development reserves
Navigational Aids and Lighting	None	Optional: Taxiway Edge Lighting (MITL)
Fuel Storage	Reconfigure Fueling Area (address taxilane clearances)	Define Reserve Area for additional fuel tanks/grades
FBO	None	Same
Utilities	Extend Service to New Development Areas	Same
Roadways	Extend/Improve Roads to New Development Areas	Same
Security	Flood Lighting	Same

Note: Vegetation control, crackfill, sealcoat, slurry seal, localized patching, joint rehabilitation, etc., as required.



AIRFIELD CAPACITY

Annual service volume (ASV) is a measure of estimated airport capacity and delay used for long-term planning. ASV, as defined in FAA Advisory Circular (AC) 150/5060-5, Airport Capacity and Delay, provides a reasonable estimate of an airport's operational capacity. The ratio between demand and capacity helps to define a timeline to address potential runway capacity constraints before they reach a critical point. If average delay becomes excessive (greater than 3 minutes per aircraft), significant congestion can occur on a regular basis, which significantly reduces the efficient movement of air traffic. ASV is calculated based on the runway and taxiway configuration, percent of VFR/IFR traffic, aircraft mix, lighting, instrumentation, the availability of terminal radar coverage and the level of air traffic control at an airport.

For long-term planning purposes, the FAA estimates ASV for a single runway with no air carrier traffic is approximately 230,000; hourly capacity is estimated to be 98 operations during visual flight rules (VFR) conditions and 59 operations during instrument flight rules (IFR) conditions. Although these estimates assume optimal conditions (air traffic control, full length parallel taxiway, adequate number and location of runway exit taxiways, etc.), they provide a reasonable basis for approximating existing and future capacity:

Existing Capacity: 4,250 Annual Operations / 230,000 ASV = 1.9% (demand/capacity ratio)

Future Capacity: 5,000 Annual Operations / 230,000 ASV = 2.2% (demand/capacity ratio)

Based on these ratios, the average delay per aircraft would be expected to remain below one minute through the planning period. The FAA recommends that airports proceed with planning to provide additional capacity when 60 percent of ASV is reached. Even applying a more realistic annual capacity in the range of 80,000 to 100,000 operations, forecast demand is expected to remain well below available capacity during the current planning period and beyond.

Chapter 5 – Airport Development Alternatives





Chapter 5 – Airport Development Alternatives

The evaluation of future development options represents a critical step in the airport master planning process. The primary goal is to define a path for future development that provides an efficient use of resources and is capable of accommodating the forecast demand and facility needs defined in the master plan.



Introduction

As noted in the facility requirements evaluation, current and long-term planning for Lexington Airport is based on maintaining and improving the airport's ability to serve a wide range of general aviation and business aviation aircraft.

All proposed facility improvements are consistent with applicable FAA airport design standards and FAR Part 77 airspace planning standards. Airplane Design Group II (ADG II) standards are recommended for all primary facilities including the runway, parallel taxiway, access taxiways, and major taxilanes. All proposed improvements are compatible with the airport's existing nonprecision instrument approach capabilities.

Evaluation Process

Creating preliminary alternatives represents the first step in a multi-step process that leads to the selection of a preferred alternative. An important part of the master plan update process is the evaluation of previous master plan recommendations and actual facility development that subsequently occurred. Major improvements completed in the last ten years include runway reconstruction, new lighting, taxiway construction and rehabilitation, apron and taxilane reconfiguration, and hangar construction.



Improvements that have not been completed are reevaluated to determine to if they remain relevant to current needs.

The preliminary alternatives are prepared and evaluated to identify general preferences for both individual items and the overall concepts being presented. The process allows the widest range of ideas to be considered and the most effective facility development concept to be defined. From this evaluation process, elements of a preferred alternative will emerge that best accommodate all required facility improvements. The Consultant will integrate these items into a draft preferred alternative that will be reviewed and refined as the County proceeds through the process of selecting a final preferred development alternative for Lexington Airport. Throughout this process, public input and coordination with the FAA will also help to shape the preferred alternative.

Once the preferred alternative is selected by the County, a detailed capital improvement program will be created that identifies and prioritizes specific projects that can be implemented. The elements of the preferred alternative are integrated into the updated airport layout plan (ALP) drawings that will be used to guide future improvements at the airport.

Final Report Note: A preferred alternative was developed through the evaluation process described above. A description of the preferred alternative begins on page 12 of this chapter. The original sequence and descriptions of the preliminary alternatives presented in the draft working paper are maintained without revision to illustrate the process used.

No-Action Alternative

In addition to proactive options that are designed to respond to future facility needs, a “no-action” option also exists, in which the County may choose to maintain existing facilities and capabilities without investing in facility upgrades or expansion to address future demand. The existing airfield configuration would remain unchanged from its present configuration and the airport would essentially be operated in a “maintenance-only” mode.

The no-action alternative concept establishes a baseline from which the action alternatives can be compared. The purpose and need for the action alternatives is defined by the findings of the forecasts and facilities requirements analyses. Forecast aviation activity and the factors associated with increased activity (potential for congestion, safety, etc.) are the underlying rationale for making facility improvements. Market factors (demand) effectively determine the level and pace of private investment (hangar construction, business relocation to the airport, etc.) at an airport. Public investment in facilities is driven by safety, capacity and the need to operate an airport on a financially sustainable basis.



Based on the factors noted above, the no-action alternative is inconsistent with the management and development policies of Morrow County and its long-established commitment to provide a safe and efficient public air transportation facility that is socially, environmentally, and economically sustainable.

Preliminary Development Alternatives

The primary facility needs identified in the facility requirements analysis include taxiway and apron taxilane improvements, aircraft parking, and aircraft hangars. Items such as fencing, lighting improvements, minor roadway extensions, and pavement maintenance do not typically require an alternatives analysis and will be incorporated into the preferred development alternative where appropriate. The preliminary alternatives have been organized into two groups to address these broad needs and other related needs:

- *Airside Development Options (Runway/Taxiway)*
- *Landside Development Options (Aircraft Storage and Support)*

Airside facilities include runway and major taxiways, signage, and lighting. Landside facilities include aircraft storage (parking or hangar space), fueling, vehicle parking, and other support facilities. The preliminary development alternatives are described below with graphic depictions (**Figures 5-1 through 5-3**) provided to illustrate the key elements of each alternative. The preliminary alternatives are intended to facilitate a discussion and evaluation about the best path to meet the facility needs of the airport.

It is important to note that the eventual preferred alternative selected by the County may come from one of the preliminary alternatives, a combination or hybrid of the preliminary alternatives, or a new concept that evolves through the evaluation and discussion of the preliminary alternatives. Once the elements of the preferred alternative are defined, they will be integrated into the updated Airport Layout Plan (ALP) as “future” development and the individual projects will be included in the updated capital improvement program.

Airside Development Options

As noted in the Facility Requirements analysis, the current runway length of 4,156 feet was identified in the FAA’s runway length model as being capable of accommodating more than 99 percent of the small general aviation airplane fleet and is also adequate to accommodate the design aircraft. Based on current capabilities, no extensions are recommended for Runway 8/26 at this time. Runway extension reserves may be considered by Morrow County if there is interest in preserving long-term development options.

The main component in the airside development options is improved taxiway access for Runway 8/26. The existing south parallel taxiway access extends approximately 2,410 feet from the east end of the runway and has two exit taxiway connections. The west end of the runway is approximately 1,745 from



the end of the south parallel taxiway. Aircraft are required to back-taxi on the runway to reach the end of Runway 8 for takeoff or after landing on Runway 26, when they are unable to use the mid-runway exit.

The 2001 ALP Report recommended a north parallel taxiway extension, primarily based on the amount of fill required to extend the south parallel taxiway to the west end of the runway. The previous planning was conducted prior to the runway and south parallel taxiway projects, which produced new topographic survey data. An updated analysis of construction costs for both north and south taxiway options has been developed using the detailed topography to allow an accurate comparison (see **Table 5-1**).

AIRSIDE OPTION A

Airside Option A (see **Figure 5-1**) includes a 1,740-foot parallel taxiway extension and a 185-foot exit taxiway on the north side of Runway 8/26. This taxiway configuration was recommended in the previous airport master planning and is depicted on the 2001 Airport Layout Plan. The new taxiway would connect to the existing west exit taxiway, requiring aircraft to cross the runway when moving between the north and south sections of parallel taxiway.

Approximately 1.4 acres of property acquisition is required to accommodate the new parallel taxiway and aircraft hold area. The ADG II standard runway-parallel taxiway separation of 240 feet and a taxiway width of 35 feet are used.

AIRSIDE OPTION B

Airside Option B (see **Figure 5-1**) extends the existing south parallel taxiway by 1,700 feet and provides an aircraft hold area adjacent to Runway 8. A benefit provided by Option B is the ability to keep all taxiing aircraft on the developed side of the runway, which eliminates the need to cross the active runway while taxiing. The option was considered in the last master plan, but was not selected due to concerns about the extensive fill required along the steeply sloping hillside. Approximately 2.3 acres of property acquisition is required to accommodate the new parallel taxiway and aircraft hold area (embankment footprint, etc.).

Option B also includes a 90-degree exit taxiway on the south parallel taxiway 1,250 feet from the end of Runway 26 and 2,860 feet from the end of Runway 8. The exit taxiway connects to the parallel taxiway near the western access taxiway. The taxiway location and connection with existing taxiway geometry reflects the FAA's design guidance which does not allow direct, unbroken travel routes between aircraft aprons and runways. The exit taxiway would be available for aircraft capable of short landings (aerial applicator) on Runway 26 and for larger aircraft landing on Runway 8 that are unable to use the western exit taxiway. In both cases, the taxiway would reduce taxi distances between the runway and landside facilities. Although presented as part of Airside Option B, the exit taxiway is compatible with both airside options and could also be developed as a stand-alone project.



Table 5-1 summarizes the development costs for the parallel taxiway components for Airside Options A and B. The project costs include engineering, environmental, contingency, and property acquisition. An additional work element has been included in both options to address new FAA standards for runway object free area grading on the eastern half of the runway.

TABLE 5-1: DEVELOPMENT COST SUMMARY - AIRSIDE OPTIONS A & B

DEVELOPMENT OPTION	EMBANKMENT/EXCAVATION TOTALS	PROJECT COST
Airside Option A (North Parallel Taxiway)	41,800 CY Embankment in Place 42,600 CY Unclassified Excavation (TWY)	\$2,684,211
Airside Option B (South Parallel Taxiway; not including the additional exit taxiway)	81,600 CY Embankment in Place 24,800 CY Unclassified Excavation (TWY)	\$2,857,477
Additive Alternative 1 Eastern Half of Runway Grading	14,400 CY Unclassified Excavation (Runway Grading)	\$176,050*

* Included in Airside Option A and B total costs



AIRSIDE OPTION A



AIRSIDE OPTION B





Landside Development Options

As noted in the facility requirements analysis, several needs were identified including items related to the existing main apron area in addition to new demand driven needs for aircraft hangars, parking, etc. The landside facility requirements defined in Chapter 4 include:

- Main Apron Taxilane Clearances (non-standard clearances to parked aircraft, fueling, etc.);
- Small Aircraft Parking (configuration and capacity);
- Multi Engine Aircraft Parking (configuration and capacity);
- Aircraft Fueling Area (clearance from apron taxilanes, expansion);
- Vehicle Parking;
- Hangars (aircraft storage and commercial/mixed use); and
- A new (replacement) airport rotating beacon is located near the southeast corner of the main apron in both options.

LANDSIDE OPTION A

Landside Option A (see **Figure 5-2**) reflects a modified version of the landside improvements depicted on the 2001 Airport Layout Plan (ALP). The configuration has been modified to reflect current conditions and other facility improvements made since the last ALP was completed. The alignment of the main apron taxilane traveling along the north edge of the apron is not modified. New development is located on the north side of the taxilane and the existing apron is reconfigured.

Option A includes a new small airplane tiedown area north of the existing apron, located between the east and center access taxiways. The tiedown apron has an access taxilane that extends from the north end of the existing apron to the east access taxiway. The taxilane provides access to eight tiedowns, with an additional tiedown development reserve between the apron and parallel taxiway. The apron development may be phased based on demand levels. Initially, four east-facing tiedowns and the access taxilane could be provided, followed by four additional tiedowns located on the north side of the apron. The new apron taxilane would also provide access to the reconfigured aircraft fueling area. In this option, the existing aviation fuel tank is maintained in its current location, although the fueling positions are relocated to the north side of the tank (2 positions). The existing aircraft fueling apron is located partially within the object free area for the east access taxiway/taxilane, which limits the useable area (clear of the adjacent OFA).

Within the main apron, the area that currently accommodates the small airplane tiedowns is reconfigured to accommodate one large aircraft parking position. The parking position is shifted to the west, requiring additional apron pavement immediately west of the existing tiedown area. The angle of the main apron taxilane object free area (TOFA) limits the useable amount of parking area on the south side of the taxilane. The parking position would accommodate transient aircraft including business or medevac fixed wing aircraft and helicopters.



The multi-unit hangar configuration depicted in Option A is based on the 2001 ALP, although the sites could also accommodate an equivalent number of smaller individual hangars. A 2-unit hangar is located near the southwest corner of the main apron that would accommodate small airplanes with access provided by the ADG I taxilane that serves the south side of the existing multi-unit hangar. A 3-unit hangar is located northwest of the agricultural apron adjacent to the west access taxiway.

A large agricultural lease area is located on the west side of the western access taxiway, which is depicted on the 2001 ALP.

LANDSIDE OPTION B

Landside Option B (see **Figure 5-3**) reconfigures the main apron by realigning the outer access taxilane to run parallel to the existing development on the apron. The realigned taxilane allows the main apron to accommodate two large aircraft parking positions along the south edge of the adjacent taxilane object free area, with new development on the north side of the taxilane.

Option B includes a new small airplane tiedown area and fuel area north of the existing apron, located between the east and center access taxiways. The new apron has taxilane connections to the main apron taxilane and the adjacent east and center access taxiways.

The apron has a double row of small airplane tiedowns with 6 north-south facing positions. The new development is located beyond the ADG II OFA for the realigned apron taxilane; the taxilanes in the new tiedown and fueling apron areas are designed to accommodate ADG I aircraft. A tiedown development reserve is located between the apron and parallel taxiway.

The existing aviation fuel tank is relocated to a new fueling apron that is adjacent to the east access taxiway. The new fueling apron provide two positions on the north/west sides of the fuel tank with access provided from the east access taxiway and the main apron.

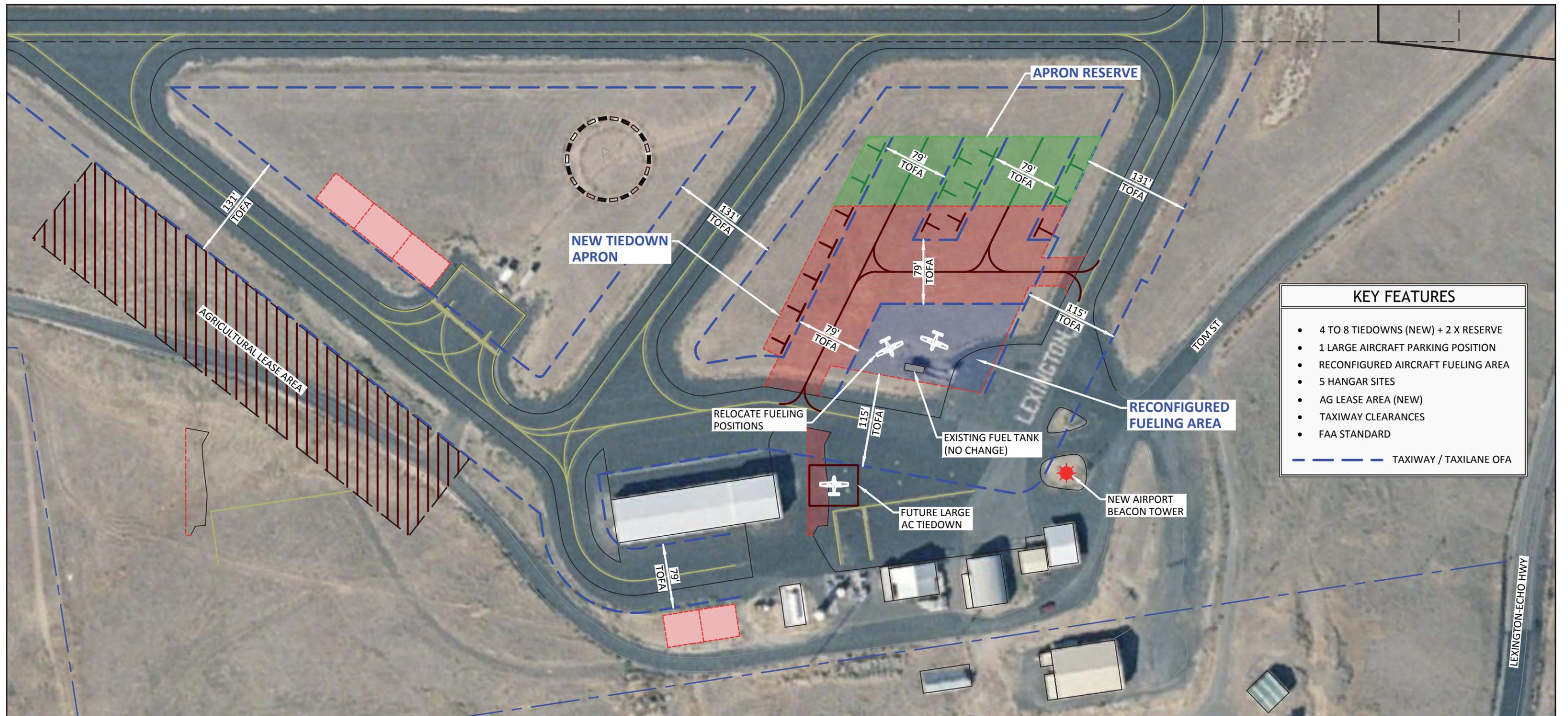
The main apron is reconfigured to accommodate two large aircraft parking position. The parking positions are accommodated entirely within the existing apron pavement, along the south edge of the main apron access taxilane. The parking positions would accommodate transient aircraft including business or medevac fixed wing aircraft and helicopters.

Option B includes sites for multi-unit or conventional hangars. The new hangar sites are located near the west end of the main apron, and extend northward along the west access taxiway. As depicted, the development exceeds forecast demand by a considerable margin; however, the layout is intended to illustrate the variety of hangar types that could be constructed including small, medium, and large conventional hangars, and one-sided multi-unit hangars. The use of one-sided hangars reflects site topography and apron/taxiway configurations. The cost of filling the downhill side of the hangar sites in



order to construct taxilanes and access road would be substantial, which would impact the overall cost of construction. Limiting the depth of the site development and using one-sided hangars reduces fill requirements.

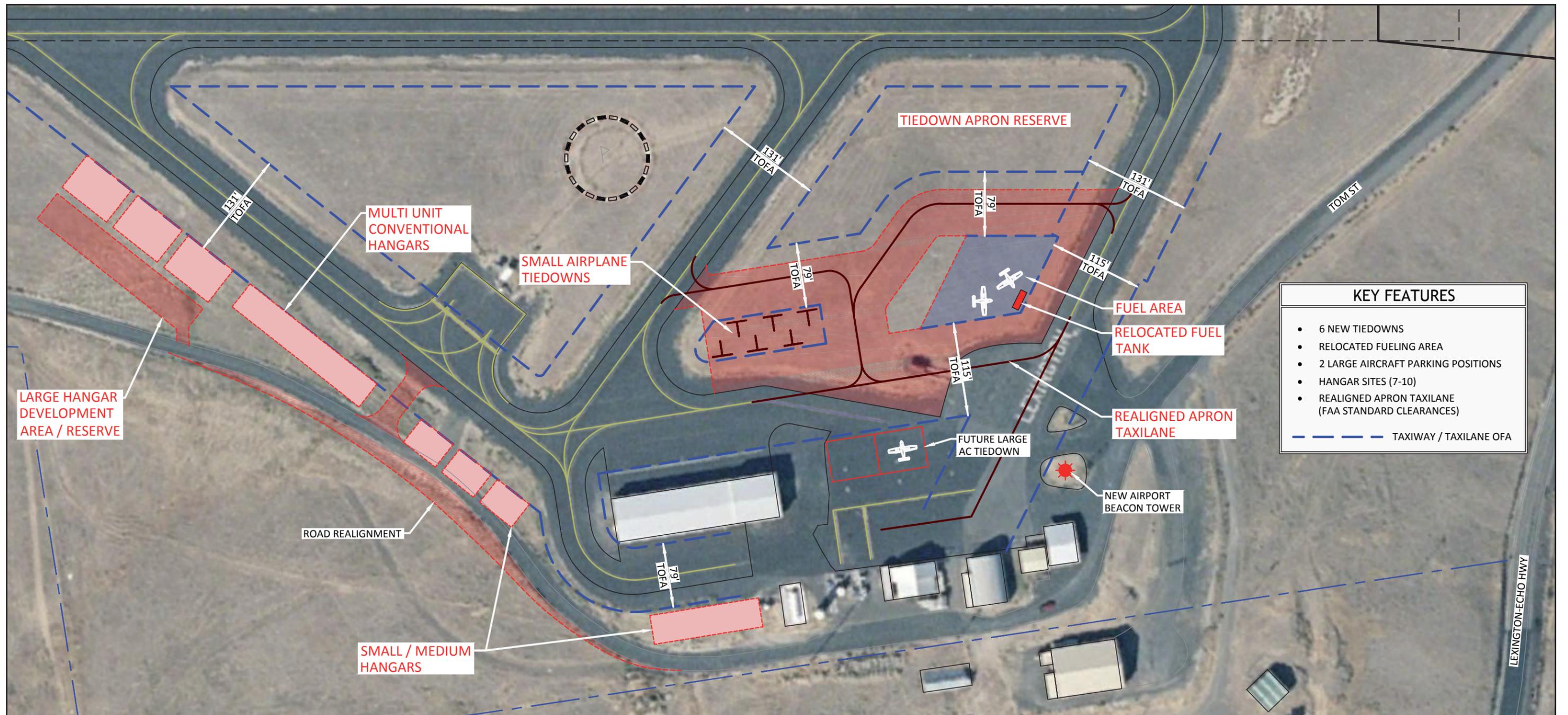
The hangar sites located past the agricultural aircraft apron can be developed without any changes to the existing gravel access road. The hangar sites located near the west end of the apron require a minor realignment of the access road to site hangars clear of the adjacent taxiway object free area. Vehicle access to the agricultural apron would also be modified as part of the road realignment. A 3-unit hangar is depicted near the southwest corner of the main apron that would accommodate small airplanes with access provided by the adjacent apron taxilane.



KEY FEATURES	
•	4 TO 8 TIEDOWNS (NEW) + 2 X RESERVE
•	1 LARGE AIRCRAFT PARKING POSITION
•	RECONFIGURED AIRCRAFT FUELING AREA
•	5 HANGAR SITES
•	AG LEASE AREA (NEW)
•	TAXIWAY CLEARANCES
•	FAA STANDARD
---	TAXIWAY / TAXILANE OFA

LANDSIDE OPTION A
MODIFIED ALP OPTION





KEY FEATURES	
•	6 NEW TIEDOWNS
•	RELOCATED FUELING AREA
•	2 LARGE AIRCRAFT PARKING POSITIONS
•	HANGAR SITES (7-10)
•	REALIGNED APRON TAXILANE (FAA STANDARD CLEARANCES)
---	TAXIWAY / TAXILANE OFA

LANDSIDE OPTION B





Preferred Development Alternative

The preliminary development alternatives, presented earlier in the chapter, were designed to accommodate the forecast aviation demand and the corresponding facility requirements for Lexington Airport described in Chapter 4 for the twenty-year planning period (2014-2034).

The preliminary development alternatives were presented to the Master Plan Advisory Committee, County staff, County Commissioners, and the general public at meetings held in summer 2014. The draft documents were also submitted to FAA and the Oregon Department of Aviation for review and comment.

Based on the wide range of input provided during these meetings and through subsequent discussions, the elements of the preferred alternative were formed. Additional coordination with Morrow County Public Works (airport management) staff led to further refinement and the concepts were prepared for presentation. The preferred alternative presented in this section was presented to the Morrow County Court as a “preliminary preferred alternative” for review and approval. Additional coordination with County staff and the FAA led to additional refinement of the concepts before being presented to FAA for final review.

The components of the preferred development alternative are presented in **Figure 5-4**. These improvements were refined and incorporated into the Airport Layout Plan (ALP) and Capital Improvement Program (CIP) and presented for public and agency review in the Draft Final Airport Master Plan. The final version of the ALP drawing set is presented in Chapter 8.

Below is a short summary of key items:

AIRSIDE (RUNWAY-TAXIWAY)

Runway

There are no physical changes proposed for Runway 8/26 aside from upgrading the markings on Runway 8 to nonprecision instrument (NPI) to be consistent with current instrument approach capabilities.

Adequate land area exists west of the runway, should the County wish to consider identifying a runway extension reserve to accommodate demand that may occur beyond the airport master plan’s 20-year planning period. No projects related to a runway reserve are included in the updated 20-year capital improvement program.

The runway obstacle free zone (OFZ) is widened from 250 feet to 400 feet based on the requirements of the current and future design aircraft. The grading requirements of the 500-foot wide runway object free area (OFA) adequately addresses OFZ grading requirements; however, the wider OFZ requires that the existing aircraft hold lines and signs on each taxiway connection (125 feet from runway centerline) be



relocated to the edge of the OFZ (200 feet from runway centerline). The aircraft hold area located adjacent to the Runway 8 threshold cannot be relocated to clear the OFZ and will be converted to a turnaround until the area is expanded or modified as part of a future parallel taxiway extension.

Crosswind Runway

An evaluation of wind coverage was conducted for Runway 8/26 based on historic wind data collected by the National Weather Service from the onsite Automated Weather Observation System (AWOS). The analysis indicates that Runway 8/26 accommodates approximately 93.74 percent of wind conditions at 10.5 knots (12 mph), the crosswind component used for small airplanes and 96.07 percent at 13 knots (15 mph), the crosswind component used for large (above 12,500 pounds) general aviation airplanes.

Based on FAA criteria, single runway airports with less than 95 percent crosswind coverage meet the basic eligibility requirements for FAA funding a second (crosswind) runway. However, the FAA considers crosswind runways to be a low priority in most cases, particularly when the primary runway accommodates more than 90 percent of wind conditions. Preliminary consultation with FAA confirmed that a crosswind runway project at Lexington Airport would be a very low priority based on the current wind coverage (for design aircraft category), the relatively low volume of air traffic at the airport, and the significant cost associated with building an additional runway. The ability to fund a crosswind runway without FAA participation is limited and would consume a disproportionate amount of local resources available for airport maintenance, operations, and improvements. For these reasons, additional evaluation of crosswind runway options was not performed.

Taxiways

A western extension of the south parallel taxiway is recommended to provide safe and efficient aircraft movement within the runway-taxiway system and convenient access between the runway and the landside area. An aircraft hold area is identified at the west end of the taxiway to allow efficient movement of aircraft. Due to the significant slope along the south side of the runway, the embankment for the aircraft holding area will extend beyond airport property. Based on preliminary fill calculations, approximately 2.3 acres of property acquisition will be required to accommodate the expanded embankment. The south parallel taxiway will be designed to meet airplane design group II (ADG II) standards.

An additional exit taxiway is identified near the east 1/3 of the runway and the south parallel taxiway. The exit taxiway would be used by aircraft landing on Runway 8 that are unable to use the current exit located west of mid-runway and for aerial applicator aircraft landing on Runway 26 to expedite movement to adjacent operations areas. The offset taxiway connection to the south parallel taxiway conforms to current FAA guidance on runway-taxiway safety.



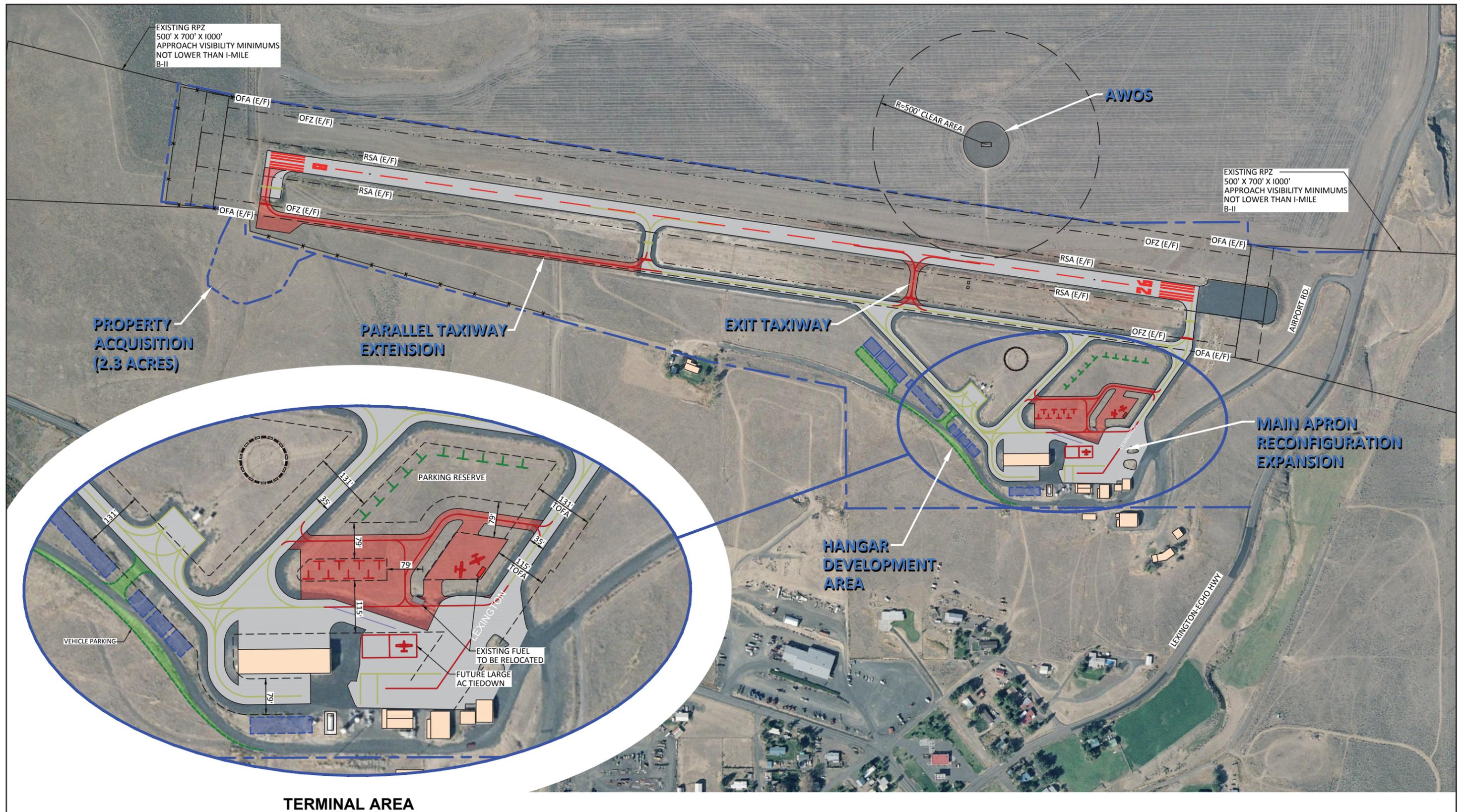
LANDSIDE (TERMINAL AREA)

Improvements to the terminal area include reconfiguration/expansion of the existing aircraft tiedown apron, reconfiguration of aircraft taxilanes, and relocation of the aircraft fueling area. The primary changes to the existing apron involve reconfiguration of aircraft tiedowns and taxilanes to meet FAA taxilane clearance standards. The preferred option upgrades the main apron taxilane to Airplane Design Group II (ADG II) standards. The new section of apron will provide small airplane parking and a reconfigured fueling area with ADG I standards.

Improved vehicle access (minor realignment) will be provided to the western section of the terminal area for new hangars and the existing aerial applicator apron. The hangar area will accommodate large and small hangars between the access road and the west access taxiway.

PROPERTY ACQUISITION

As noted earlier, approximately 2.3 acres of property acquisition is required to accommodate a new aircraft hold area on the south parallel taxiway extension.



Chapter 6 – Environmental Review





Chapter 6 – Environmental Review



Introduction

The purpose of this environmental review is to identify physical or environmental conditions of record, which may affect the recommended improvements at Lexington Airport.

The scope of work for this element is limited to compiling, reviewing, and briefly summarizing information of record from applicable local, federal, and state sources for the airport site and its environs. The environmental review technical memorandum is included in **Appendix B** and a brief overview is provided below.

Local Site Conditions

Lexington Airport is located in a rural area, predominantly made up of agriculture lands. An environmental review of existing airport site conditions and items of interest was conducted as part of the master plan and included land use, water resources (wetlands, stormwater), species of concern, federal lands, and essential fish habitat.

The environmental review identified that there are no known sensitive, threatened, endangered plants and animals, or critical habitats within a 2-mile radius of the airport. A wetland inventory was included in the review, which identified Lexington Airport as being within 400 feet of an unnamed tributary of Willow Creek, which drains into the Columbia River. There are no documented species included in the



Endangered Species Act (ESA) within Willow Creek or its tributaries. Wetlands are under the jurisdiction of both the Oregon Department of State Lands (DSL) and the US Army Corps of Engineers (Corps).

The review identifies two ESA species that may potentially be in Morrow County, the Greater sage grouse and Washington ground squirrel. Lexington Airport does not have suitable habitat to support either of these two endangered species.

Chapter 7 – Financial and Development Plan





Chapter 7 – Financial and Development Program



Introduction

The purpose of this chapter is to present the projects identified in the Airport Capital Improvement Program (ACIP), that have been developed and assembled based on the analyses conducted in the Facility Requirements and Development Alternatives chapters (Chapters 4 and 5). The ACIP projects are summarized in **Table 7-1** later in the chapter. The ACIP is organized in short, intermediate, and long-term periods that reflect both project prioritization and financial capabilities. Several factors were considered in determining project prioritization, including safety, forecasted demand, the need to maintain/replace existing airfield facilities, and financial capabilities of both the County and FAA to support the development program based on existing funding mechanisms.

The Airport Master Plan preferred alternative includes both airside elements and landside elements. Minor pavement maintenance items such as vegetation removal and crack filling are not included in the ACIP, but will need to be undertaken by the County on an annual or semi-annual basis.

A brief environmental review was prepared and is presented in Chapter 6. The review provides an overview of areas of potential concern related to proposed development. In addition, all federally funded projects will require some level of project-specific environmental study, as determined by FAA.

The ACIP lists all major projects included in the twenty-year planning period addressed in the Airport Master Plan. Individual projects for the first five years of the planning period are listed in order of priority by year. Projects for the intermediate and long-term phases of the planning period (years 6-20) are listed



in order of priority but have not been assigned a year. Each project’s eligibility for FAA funding is noted, based on current federal legislation and funding formulas. Specific project details are depicted on the updated Airport Layout Plan and Terminal Area Plan drawings contained in Chapter 8.

A primary source of potential funding identified in this plan is the FAA’s Airport Improvement Program (AIP). As proposed, approximately 90 percent of the airport’s 20-year ACIP will be eligible for federal funding. Funds from this program are derived from the Aviation Trust Fund, which is the depository for all federal aviation taxes collected on such items as airline tickets, aviation fuel, lubricants, tires, aircraft registrations, and other aviation related fees. These funds are distributed by FAA under appropriations set by Congress to all airports in the United States that are included in the federal airport system (National Plan of Integrated Airport Systems – NPIAS).

However, as noted in **Table 7-1**, the projected twenty-year total for FAA eligible projects in the ACIP significantly exceeds current FAA funding levels through the non-primary entitlement program. While other types of FAA funding may be available for some projects, it is reasonable to assume that despite establishing eligibility for FAA funding, not all eligible projects are likely to be funded by FAA. As the County manages its ACIP, maximizing the use of available FAA and other outside sources of funding is assumed. However, in some cases, the limited availability of outside funds may require projects to be deferred, or funded with increased levels of local, state, or private funding.

Airport Development Schedule and Cost Estimates

Cost estimates for each individual project were developed in 2014 dollars based on typical construction costs associated for the specific type of project. The project costs listed in the ACIP represent order-of-magnitude estimates that approximate design engineering, environmental, other related costs, sales tax, and contingencies. The estimates are intended only for preliminary planning and programming purposes. Specific project analysis and detailed engineering design will be required at the time of project implementation to provide more refined and detailed estimates of the development costs.

In future years, as the plan is carried out, these cost estimates can continue to assist management by adjusting the 2014-based figures for subsequent inflation. This may be accomplished by converting the interim change in the United States Consumer Price Index (USCPI) into a multiplier ratio through the following formula:

$$\frac{X}{I} = Y$$



Where:

X = USCPI in any given future year

Y = Change Ratio

I = Current Index (USCPI)¹

<i>USCPI-U</i>
238.343
(1982-1984 = 100)
June 2014

Multiplying the change ratio (Y) times any 2014-based cost figures presented in this study will yield the adjusted dollar amounts appropriate in any future year evaluation. Several different CPI-based indices are available for use and any applicable index may be substituted by the County in its financial management program.

The following sections outline the recommended development program and funding assumptions. The scheduling has been prepared according to the facility requirements determined through the master plan evaluation. The projected staging of development projects is based upon anticipated needs and investment priorities. Actual activity levels may vary from projected levels; therefore, the staging of development in this section should be viewed as a general guide. When activity does vary from projected levels, implementation of development projects should occur when demand warrants, rather than according to the estimated staging presented in this chapter. In addition to major projects, the airport will continue to require regular facility maintenance such as pavement maintenance, vegetation control, sweeping, lighting repair, and fuel system maintenance.

The first phase of the Capital Improvement Program includes the highest priority projects recommended during the first five years of the planning period. Intermediate and long-term projects are anticipated to occur in the 6-to 20-year time period, although changes in demand or other conditions could accelerate or slow demand for some improvements.

¹ U.S. Consumer Price Index for All Urban Consumers (USCPI-U)



SHORT-TERM PROJECTS

The short-term program contains work items of the highest priority. Priority items include improvements related to safety. Because of their priority, these items will need to be incorporated into the State Capital Improvement Program (SCIP) managed by the FAA Seattle Airport District Office and the Oregon Department of Aviation (ODA). To assist with this process, the short-term projects are scheduled in specific calendar years for the first six years of the planning period (2014-2019).

The main focus in the short-term development period is to address major taxiway improvements, preserve (seal coat) runway pavement.

Short-Term Projects:

- Beacon replacement (completed in 2014);
- Sealcoat Runway 8/26 and the aircraft holding area (remove visual runway markings and paint non-precision....), relocate the aircraft hold lines and signs based on 400-foot wide runway OFZ;
- Install runway end identifier lights (REIL) on Runways 8 and 26;
- Complete the environmental assessment/categorical exclusion (CATEX) report for the main apron expansion reconfiguration project;
- Reconfigure/expand main apron (pavement reconstruction, overlay, sealcoats, reconfigure taxilanes, relocate the existing fuel island, install new tiedowns) and overlay/reconstruct east access taxiway;
- Sealcoat parallel taxiway and access taxiways (west and center) and repaint markings; and
- Install taxiway edge reflectors parallel taxiway and access taxiways.

INTERMEDIATE & LONG-TERM PROJECTS

Several intermediate or long-term projects are considered to be current needs. However, based on the limited funding resources available, it was necessary to shift some projects to the longer-term timeline. However, projects may be completed sooner in the event that additional funding can be generated.

Intermediate-Term Projects (6-10 years)

- Environmental assessment for the Runway 8/26 object free area (OFA) grading project;
- Runway OFA grading including excavation, subgrade stabilization, proper drainage with catch basins, manholes and storm drains;
- Construct a new runway exit taxiway connector to the parallel taxiway (eastern 1/3 of runway);
- Airport service road realignment and extension (west terminal area hangar sites); and
- Sealcoat Runway 8/26 and repaint NPI markings.



Long-Term Projects (11-20 years)

- Sealcoat and repaint markings on the access taxiways, agricultural apron and main apron;
- Sealcoat and repaint markings on the main apron;
- Environmental assessment for the south parallel taxiway (west extension);
- “Property acquisition for South Parallel Taxiway Extension (embankment for AC hold area)
- South parallel taxiway (west extension) project;
- Install medium intensity taxiway lights (MITL) on parallel taxiway and runway exit taxiways;
- Sealcoat and repaint markings on the parallel taxiway (2007 section) including the three runway exits;
- “Property acquisition for South Parallel Taxiway Extension (embankment for AC hold area);
- Update the Airport Master Plan;
- Overlay (as needed) and repaint markings on the main apron existing pavement prior to the main apron reconfiguration project;
- Overlay and repaint markings on the parallel taxiway existing pavement prior to the taxiway extension project and the four runway exits;
- Replace the existing Runway 8/26 medium intensity runway lights (MIRL) at the end of useful life;
- Replace the existing Runway 8/26 precision approach path indicator lights (PAPI) at the end of useful life; and
- Overlay Runway 8/26 and repaint NPI markings.

Morrow County Lexington Airport

20-YEAR CAPITAL IMPROVEMENT PROGRAM

2014-2033

Current NPE \$ Accumulation: \$317,000 (FY 2014)

Prepared by Century West Engineering

Short Term	Yr	Project	ID	Project Category	Unit	Quantity	Unit Cost	Subtotal Cost	40% Engineering/ Contingency/ Environmental	Total Cost	FAA GA Entitlement	Other FAA **	Local Costs
2014	0	Beacon Replacement		Lighting	LS	1	\$21,908	\$21,908	\$0	\$21,908	\$0	\$0	\$21,908
Subtotal - Year 1								\$21,908	\$0	\$21,908	\$0	\$0	\$21,908
2015	1	Runway 8/26 & Aircraft Hold Areas- Sealcoat, NPI Markings, Relocate AC Holdlines & Signs		Pavement Maintenance	LS	1	\$210,000	\$210,000	\$84,000	\$294,000	\$264,600	\$0	\$29,400
		Runway End Identifier Lights (REIL) Runway 8/26		Lighting	EA	2	\$25,000	\$50,000	\$20,000	\$70,000	\$63,000	\$0	\$7,000
								\$0	\$0	\$0	\$0	\$0	\$0
Subtotal - Year 2								\$260,000	\$104,000	\$364,000	\$327,600	\$0	\$36,400
2016	2	Main Apron Environmental/CATEX		Environmental	LS	1	\$50,000	\$50,000	\$20,000	\$69,999	\$62,999	\$0	\$7,000
								\$0	\$0	\$0	\$0	\$0	\$0
													\$0
Subtotal - Year 3								\$50,000	\$20,000	\$69,999	\$62,999	\$0	\$7,000
2017	3	Main Apron Reconfiguration/Expansion		Pavement Construction	LS	1	\$866,398	\$866,398	\$346,559	\$1,212,957	\$376,401	\$715,261	\$121,296
								\$0	\$0	\$0	\$0	\$0	\$0
								\$0	\$0	\$0	\$0	\$0	\$0
Subtotal - Year 4								\$866,398	\$346,559	\$1,212,957	\$376,401	\$715,261	\$121,296
2018	4	No Projects/Carry Over Funds						\$0	\$0	\$0	\$0	\$0	\$0
								\$0	\$0	\$0	\$0	\$0	\$0
								\$0	\$0	\$0	\$0	\$0	\$0
Subtotal - Year 4								\$0	\$0	\$0	\$0	\$0	\$0
2019	5	Parallel Taxiway & Access Taxiways (West & Center) Sealcoat; Restripe		Pavement Maintenance	SY	22136	\$2	\$54,272	\$21,709	\$75,981	\$68,383	\$0	\$7,598
								\$0	\$0	\$0	\$0	\$0	\$0
								\$0	\$0	\$0	\$0	\$0	\$0
Subtotal - Year 5								\$54,272	\$21,709	\$75,981	\$68,383	\$0	\$7,598
							0-5	\$1,252,578	\$492,268	\$1,744,845	\$835,383	\$715,261	\$194,202

* Connect Oregon Grant & Local Match

NPE Accumulation \$317,000
 FY 2015 NPE \$150,000
 Total Available (NPE) \$467,000

NPE Accumulation \$139,400
 FY 2016 NPE \$150,000
 Total Available (NPE) \$289,400

NPE Accumulation \$226,401
 FY 2017 NPE \$150,000
 Total Available (NPE) \$376,401

NPE Accumulation \$0
 FY 2018 NPE \$150,000
 Total Available (NPE) \$150,000

NPE Accumulation \$150,000
 FY 2019 NPE \$150,000
 Total Available (NPE) \$300,000

Remaining NPE \$231,617

* Current Year Project Grant

** Other FAA Funding Total listed for reference only based on general project eligibility and does not indicate a funding commitment by FAA.

Intermediate Term	6--10	Project	Project Category	Unit	Quantity	Unit Cost	Subtotal Cost	40% Engineering/ Contingency/ Environmental	Total Cost	FAA GA Entitlement	Other FAA **	Local Costs
2020-2024		Environmental-Runway 8/26 Object Free Area Grading Project	Environmental	LS	1	\$53,572	\$53,572	\$21,429	\$75,000	\$67,500	\$0	\$7,500
		Runway Object Free Area (OFA) Grading	Pavement Construction	LS	1	\$307,200	\$706,560	\$268,493	\$975,053	\$877,548	\$0	\$97,505
		Runway Exit to Parallel Taxiway (Eastern Middle of Runway)	Pavement Construction	SY	719	\$75	\$53,925	\$21,570	\$75,495	\$36,570	\$31,376	\$7,550
		Airport Service Road Realignment and Extension	Other	LS	1	\$20,700	\$20,700	\$8,280	\$28,980	\$0	\$26,082	\$2,898
		Runway Sealcoat/Repaint Markings	Pavement Rehabilitation	SY	36,270	\$2	\$92,540	\$37,016	\$129,556	\$0	\$116,600	\$12,956
Subtotal - Year 6-10							\$927,297	\$356,788	\$1,284,084	\$981,617	\$174,058	\$128,408

Carry Over NPE \$231,617

** Other FAA Funding Total listed for reference only based on general project eligibility and does not indicate a funding commitment by FAA.

5 year NPE \$ = \$750,000

Long Term	11--20	Project	Project Category	Unit	Quantity	Unit Cost	Subtotal Cost	40% Engineering/ Contingency/ Environmental	Total Cost	FAA GA Entitlement	Other FAA **	Local Costs
2025-2034		Access Taxiways (west, east and center with connecting AG apron and SW hangar apron) Sealcoat/Repaint Markings	Pavement Maintenance	SY	14,210	\$2	\$38,420	\$15,368	\$53,788	\$48,409	\$0	\$5,379
		Parallel Taxiway (area prior to extension) & 3 Runway Exits Sealcoat/Repaint Markings	Pavement Maintenance	SY	13,341	\$2	\$36,682	\$14,673	\$51,355	\$46,219	\$0	\$5,135
		Main Apron Sealcoat/Repaint Markings	Pavement Maintenance	SY	16,061	\$2	\$42,122	\$16,849	\$58,971	\$53,074	\$0	\$5,897
		Environmental-South Parallel Taxiway (West Extension)	Environmental	LS	1	\$100,000	\$100,000	\$40,000	\$140,000	\$126,000	\$0	\$14,000
		Property Acquisition-South Parallel Taxiway	Other	Acres	2.3	\$10,000	\$23,000	\$9,200	\$32,200	\$28,980	\$0	\$3,220
		South Parallel Taxiway (West Extension)	Pavement Construction	LS	1	\$1,876,520	\$1,876,520	\$750,608	\$2,627,128	\$1,197,317	\$1,167,098	\$262,713
		Master Plan Update	Other	LS	1	\$150,000	\$150,000	\$60,000	\$210,000	\$0	\$189,000	\$21,000
		Access Taxiways (west, east and center with connecting AG apron and SW hangar apron) Overlay/Repaint Markings	Pavement Rehabilitation	SY	11,827	\$55	\$650,485	\$260,194	\$910,679	\$0	\$819,611	\$91,068
		Main Apron (2007 pavement area) Overlay/Repaint Markings	Pavement Rehabilitation	SY	8,082	\$55	\$444,510	\$177,804	\$622,314	\$0	\$560,083	\$62,231
		Parallel Taxiway (area prior to extension) & 4 Runway Exits Overlay/Repaint Markings	Pavement Rehabilitation	SY	20,614	\$55	\$1,143,770	\$457,508	\$1,601,278	\$0	\$1,441,150	\$160,128
		Runway 8/26 Medium Intensity Runway Lights (MIRL) Replacement	Lighting	LF	4,156	\$60	\$249,360	\$99,744	\$349,104	\$0	\$314,194	\$34,910
		Runway 8 & 26 Precision Approach Path Indicator (PAPI) Replacement	Lighting	EA	2	\$60,000	\$120,000	\$48,000	\$168,000	\$0	\$151,200	\$16,800
	Runway 8/26 Overlay/Repaint Markings	Pavement Reconstruction	SY	36,270	\$55	\$2,014,850	\$805,940	\$2,820,790	\$0	\$2,538,711	\$282,079	
Subtotal Year 11-20							\$6,889,719	\$2,755,888	\$9,645,607	\$1,500,000	\$7,181,047	\$964,561
20 Yr Total							\$9,069,594	\$3,604,943	\$12,674,536	\$3,317,000	\$8,070,365	\$1,287,171

** Other FAA Funding Total listed for reference only based on general project eligibility and does not indicate a funding commitment by FAA.

10 year NPE \$ = \$1,500,000



Capital Funding Sources

FEDERAL GRANTS

Federal funding is provided through the Federal Airport Improvement Program (AIP). This reauthorization is the latest evolution of a funding program originally authorized by Congress in 1946 as the Federal Aid to Airports Program (FAAP). The program provides grant funding for airports listed in the National Plan of Integrated Airport Systems (NPIAS). Under current legislation, eligible general aviation airports can receive up to \$150,000 per year in general aviation “non-primary entitlement” grants. If a project is anticipated to cost in excess of \$150,000, the participating airport can roll over the funding allocations for up to four years, at which time the accumulated total of funds can be used for larger projects. Any unused funds that remain beyond the maximum allowable roll over period revert to the FAA for use at other airports. These funds may only be used for eligible capital improvement projects and may not support airport operation and maintenance costs. Current FAA funding levels are 90 percent with a 10 percent local match.

FAA funding is limited to projects that have clearly defined need that has been identified through preparation of an FAA approved Airport Layout Plan (ALP). Periodic updates of the ALP are required when new or unanticipated project needs or opportunities exist that require use of FAA funds. The FAA will not generally participate in vehicle parking, utilities, building renovations or projects associated with non-aviation developments.

Projects such as hangar construction or fuel systems are eligible for funding, although the FAA indicates that this category of project would be considered to be a much lower priority than other airfield needs.

The FAA also provides discretionary grants to airports. The dollar amounts of individual grants vary and can be significantly larger than the primary entitlements. Discretionary grants are awarded at the FAA's sole discretion. Discretionary funds are distributed after all entitlement funds have been allocated. For larger projects requiring substantially larger amounts of funding, non-primary entitlement, state apportionment, and discretionary grants are often combined. Other types of FAA funding include facilities & equipment (F&E) projects and Congressionally-appropriated dollars for specific projects.

STATE FUNDING

No specific level of Oregon Department of Aviation (ODA) funding has been assumed in the CIP presented in **Table 7-1**. It is recommended that the County maximize use of any ODA or other State of Oregon funds that are available in the planning period.



Pavement Maintenance Program

The Pavement Management Program (PMP) programs airfield pavement maintenance funds on established multi-year cycles. This program is intended to preserve and maintain existing airfield pavements in order to maximize their useful lives and the economic value of the pavement. As noted earlier, several short-term pavement maintenance projects are identified for Morrow County Lexington Airport in the most recent PMP. The program funds pavement maintenance and associated improvements (crack filling, repair, sealcoats, etc.), including some items which have not traditionally been eligible for FAA funding.

Funding for the PMP is generated through collection of aviation fuel taxes. ODA manages the PMP through an annual consultant services contract and work is programmed on a 3-year regional rotation. The program includes a regular schedule of inspection and subsequent field work. Benefits from the PMP include:

- Economy of scale in bidding contracts;
- Federal/State/Local partnerships that maximize airport improvement funds; and
- PMP is not a grant program and local match is on a sliding scale (50% - 5% required).

The PMP includes the following features:

- Review prior year's Pavement Condition Index (PCI) reports;
- Only consider PCIs above 70;
- Apply budget;
- Limit work to patching, crack sealing, fog sealing, slurry sealing;
- Add allowance for striping; and
- Program to include approximately 20 airports per year, depending on funding levels.

Financial Aid to Municipalities (FAM) Grants

ODA's FAM grant program has been suspended in recent years due to a lack of funding. Efforts to resume and expand the program are currently being considered by ODA. Previously, FAM grants up to \$25,000 were available to Oregon airports for eligible airport related projects.



CONNECT OREGON GRANTS

State Capital Improvement Program (SCIP)

The FAA's Seattle Airport District Office (ADO) is working with state aviation agencies in Washington, Oregon and Idaho to develop a coordinated "State" Capital Improvement Program, known as the SCIP. The SCIP is intended to become the primary tool used by FAA, state aviation agencies and local airport sponsors to prioritize funding. The program has reached full implementation with current and near term future funding decisions prioritized through evaluation formulas. Airport sponsors are asked to provide annual updates to the short-term project lists annually in order to maintain a current system of defined project needs. The short-term priorities identified in the master plan CIP will be imported into the SCIP and will be subject to additional prioritization for funding in competitive statewide evaluations.

LOCAL FUNDING

As currently defined, the locally funded (County/tenant) portion of the CIP for the twenty-year planning period is estimated to be just over 10.2 percent. Hangar construction costs, building maintenance and utility extensions have not been included in the CIP, since no FAA funding is assumed.

A portion of local matching funds are generated through airport revenues, including fuel sales, land leases, and hangar rentals.

Airport sponsors occasionally fund infrastructure and revenue-generating development such as hangars locally, either through an inter fund loan or the issuance of long-term debt (bonds).

Chapter 8 – Airport Layout Plan





Chapter 8 – Airport Layout Plan Drawings



Introduction

The options that were considered for the long-term development of Lexington Airport in Chapter 5 resulted in the selection of a preferred alternative. The preferred alternative has been incorporated into the Airport Layout Plan drawings, which are depicted in this chapter. The set of airport plans, which is referred to in aggregate as the “Airport Layout Plan” (ALP) has been prepared in accordance with FAA guidelines. The drawings illustrate existing conditions, recommended changes in airfield facilities, property ownership, land use, and obstruction removal. The ALP set is presented at the end of this chapter:

- Sheet 1 – Cover Sheet
- Sheet 2 – Airport Data Sheet
- Sheet 3 – Airport Layout Plan
- Sheet 4 – Terminal Area Plan
- Sheet 5 – Airport Airspace Plan (FAR Part 77)
- Sheet 6 – Runway 8/26 Approach Plan and Profile
- Sheet 7 – Runway 8/26 RPZ Inner Approach Plan and Profile
- Sheet 8 – Runway 8 Approach Surface Plan and Profile
- Sheet 9 – Runway 26 Approach Surface Plan and Profile
- Sheet 10 – Airport Land Use Plan
- Sheet 11 – Exhibit “A” Airport Property Plan



The Airport Layout Plan drawings provide detailed information for existing and future facilities. The future improvements depicted in the drawing set are consistent with the Airport Master Plan's updated 20-year Capital Improvement Program contained in Chapter 7. The ALP drawing set was submitted along with the draft final Airport Master Plan report to Federal Aviation Administration (FAA) for review and approval. The drawings will be reviewed by the FAA Airports District Office (ADO) with additional review coordinated with other FAA offices (Flight Procedures, Flight Standards, etc.). Once approved, the final ALP drawing set will be signed by Morrow County and the FAA Seattle Airports District Office (ADO). As individual projects are completed, minor "as-built" updates to the ALP drawing may be completed (with FAA coordination) without updating the Airport Master Plan. A complete update of the full ALP drawing set will be conducted as part of the next Airport Master Plan update.

The Airport Layout Plan drawings are prepared using AutoCAD® computer-aided drafting software, which allows for easier updating and revision. The drawing files may also be imported into local geographic information systems (GIS) to support land use planning, airport overlay zone mapping, etc.

A brief summary of the individual drawings is provided below:

AIRPORT DATA SHEET DRAWING

The Airport Data Sheet drawing contains detailed runway and airfield dimensions, FAA dimensional standards, wind roses, and other data that is reflected on the sheets in the drawing set.

AIRPORT LAYOUT PLAN DRAWING

The Airport Layout Plan (ALP) drawing graphically depicts existing and future airfield facilities. Runway 8/26 is recommended to receive a sealcoat; nonprecision instrument markings, relocate the current aircraft hold position markings and associated mandatory hold signs, install runway end identifier lights on both ends of the runway, runway object free area grading project, and construct a new runway exit during the current 20-year planning period.

Future facilities are color-coded (red) to distinguish them from existing facilities. Future facilities are represented in the Airport Master Plan's 20-year Capital Improvement Program (CIP) as individual projects or project groupings. Long-term development reserves depicted on the ALP are also color coded (green). These items are intended to serve as placeholders or are provided for reference only. Demand for facilities identified as development reserves, is not anticipated to occur in the current 20-year planning period and therefore the corresponding projects are not included in the Airport Master Plan CIP. A change of events that could move a development reserve into an actual project would require updated planning and coordination with FAA.



TERMINAL AREA PLAN DRAWINGS

A Terminal Area Plan drawing depicts facilities in the landside area located on the south side of Runway 8/26. The drawings provides additional detail for existing and new facilities. Recommended improvements include reconfigured/expanded aircraft parking apron, future hangar areas, relocated aircraft fuel area, and access road improvements.

FAR PART 77 AIRSPACE DRAWINGS

The FAR Part 77 Airspace drawings depict the protected airspace defined for Runway 8/26 in Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*. The Airspace Plan drawings depict the five “imaginary surfaces” defined in FAR Part 77.25 including the primary, transitional, approach, horizontal and conical surfaces, previously described in Chapter 4. Part 77 surfaces should be free of built or terrain obstructions to the greatest extent possible. Objects that penetrate FAR Part 77 surfaces may require action to mark or remove depending on their severity, location, and the feasibility of the action. The drawing includes a table of obstructions with recommended dispositions.

The physical characteristics of the Part 77 surfaces are defined by the size of aircraft using the runway and the approach capabilities of the runway.

- **Runway 8 Approach Surface:** Extends 10,000 feet from the end of the runway’s primary surface. The approach surface has a slope of 34:1 and represents the horizontal distance required for each increment of vertical rise.
- **Runway 26 Approach Surface:** Extends 5,000 feet from the end of the runway’s primary surface. The approach surface has a slope of 20:1 and represents the horizontal distance required for each increment of vertical rise.
- **Primary Surface:** Based on the nonprecision approach standards for an “other than utility” runway, the primary surface is 500 feet wide extending 200 feet beyond each end of the runway. The primary surface is a flat plane of airspace centered on the runway with the same elevation as the nearest point on the runway centerline. For Runway 8/26, the primary surface is 4,556 feet long and 500 feet wide.
- **Runway Transitional Surface:** The runway transitional surfaces extend outward and upward from the outer edges of the primary surface. The transitional surfaces have a slope of 7:1 and extend to an elevation 150 feet above airfield elevation and connect to the runway horizontal surface. Runway 8/26 has an approach transitional surface that extends upward at a 7:1 slope, extending 5,000 feet beyond the sides of the runway approach surface.



- **Horizontal Surface:** The horizontal surface is drawn from 5,000 foot radii that extend from both ends of the primary surface to form an oval. The horizontal surface is a flat plane of airspace with an elevation of 150 feet above airport elevation. The majority of obstructions identified in the horizontal surface are trees located of airport property.
- **Conical Surface:** The conical surface extends from the outer edge of the horizontal surface at a slope of 20:1 for 4,000 feet. An area of terrain penetration is identified in the northeast section of the conical surface.

RUNWAY APPROACH SURFACE PLAN AND PROFILE DRAWINGS

The Approach Surface drawings illustrate plan and profile views of the runway approach surfaces depicted in the FAR Part 77 Airspace Plan. The drawings provide additional detail to identify obstructions, terrain and other physical features within the approach surfaces. The drawings include obstruction data tables for items depicted on the drawing, using the same numbering identifiers from the overall Part 77 Airspace Plan. The drawing for Runway 8 also depicts the threshold siting surface (TSS) that is used to mitigate obstructions (fence) to the Part 77 approach surface. As noted on the 5010 Airport Master Record, a fence located on the airport property line which protects the airport from wildlife is 8 feet above runway end elevation and 415 feet from the runway end. The appropriate applications, dimensions and slope for the TSS are defined in **FAA Advisory Circular (AC) 150/5300-13A** (paragraph 303, section b). Also illustrated on the Runway Approach Surface Plan and Profile sheets within the Airport Layout Plan, is the DOT U.S. Standard for Terminal Instrument Procedures (TERPS), with an instrument departure surface of a 40:1 slope.

RUNWAY RPZ & INNER APPROACH SURFACE DRAWINGS

The Runway Protection Zone (RPZ) and Inner Approach Surface drawings depict detailed plan views of these areas and a profile view of the approach surface and threshold siting surface (when used). The drawings include obstruction data tables for items depicted on the drawing, using the same numbering identifiers from the overall Part 77 Airspace Plan and Approach Surface Plan and Profile drawings.

AIRPORT LAND USE PLAN

The Airport Land use Plan drawing depicts existing Comprehensive Plan and Zoning designations for the airport and surrounding areas. The areas of Town of Lexington and Morrow County land use jurisdiction are depicted on the drawings.

EXHIBIT "A" – AIRPORT PROPERTY PLAN

The Airport Property Plan drawing provides depicts all property owned by the County and controlled through easements associated with the airport. The drawing notes the form of ownership or control (fee simple, avigation easement, etc.) and the date of acquisition, per FAA guidelines.

LEXINGTON AIRPORT (9S9) MORROW COUNTY, OREGON AIRPORT MASTER PLAN

CWEC PROJECT NO. 12414002.02

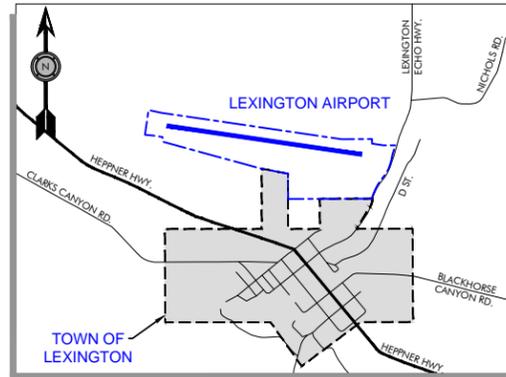
AIP NO. 3-41-0007-020-10

AIRPORT LAYOUT PLAN

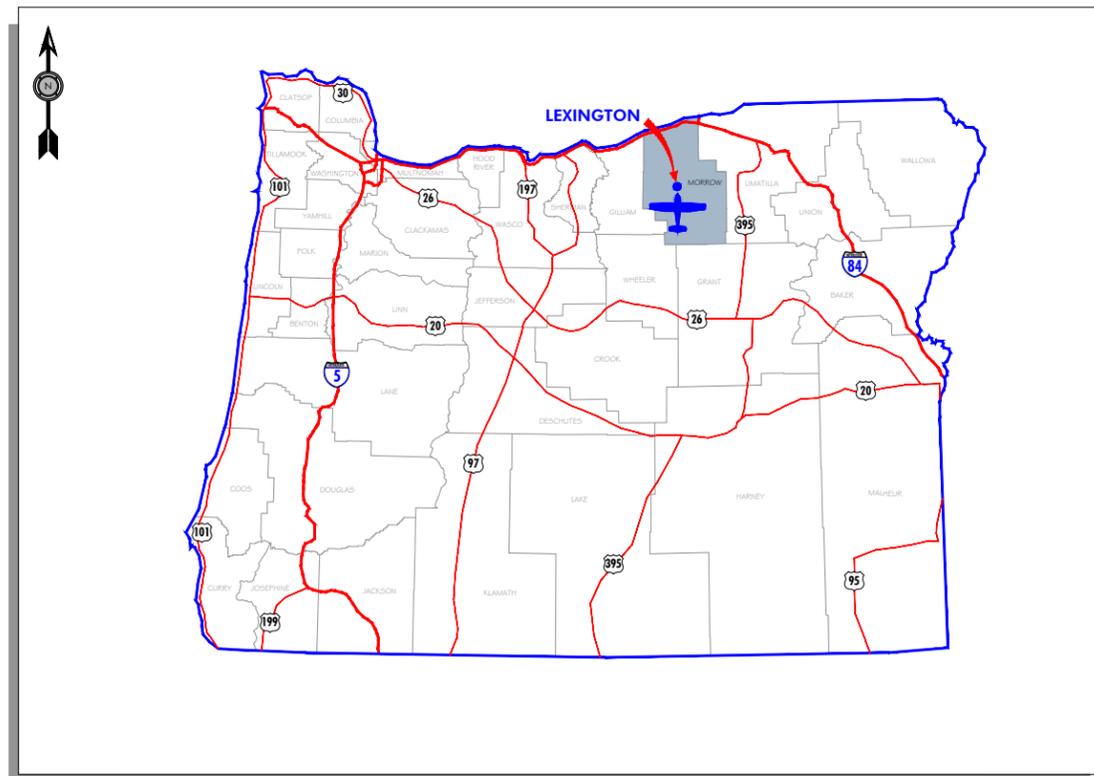
MAY 2015



AERIAL PHOTO



VICINITY MAP



LOCATION MAP

SHEET INDEX

NUMBER	CONTENTS
1	COVER SHEET
2	AIRPORT DATA SHEET
3	AIRPORT LAYOUT PLAN
4	TERMINAL AREA PLAN
5	AIRPORT AIRSPACE PLAN (FAR PART 77)
6	RUNWAY 8/26 APPROACH PLAN AND PROFILE
7	RUNWAY 8/26 RPZ INNER APPROACH PLAN AND PROFILE
8	RUNWAY 8 APPROACH SURFACE PLAN AND PROFILE
9	RUNWAY 26 APPROACH SURFACE PLAN AND PROFILE
10	AIRPORT LAND USE PLAN
11	EXHIBIT "A" AIRPORT PROPERTY PLAN



BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DRAFT

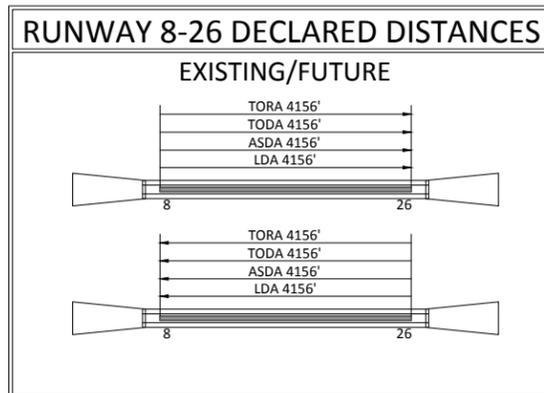
AIRPORT DATA TABLE			
DESCRIPTION	EXISTING	FUTURE	
AIRPORT ELEVATION	1634.6'	SAME	
AIRPORT ACREAGE	109.8	112.08	
ARP COORDINATES	LAT. LONG. N 45° 27' 14.95" W 119° 41' 25.01"	SAME	
MAGNETIC DECLINATION	15°3'46"E (8/2014)	ANNUAL RATE OF CHANGE 9.6"W	
MEAN MAX. DAILY TEMPERATURE	85.2°	SAME	
FAA IDENTIFIER	9S9	SAME	
DATUM	NAD83/NGVD88	SAME	

RUNWAY DATA TABLE		
	EXISTING CONDITIONS RUNWAY 8 - 26	FUTURE CONDITIONS RUNWAY 8 - 26
RUNWAY LENGTH AND WIDTH	4156' X 75'	SAME
RUNWAY LIGHTING	MIRL	SAME
RUNWAY PAVEMENT STRENGTH (LBS)	12,500 SW	SAME
RUNWAY PAVEMENT TYPE	ASPHALT	SAME
RUNWAY PERCENT WIND COVERAGE (12 MPH)	93.74%	SAME
RUNWAY PERCENT GRADIENT	1.26%	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME
FAR PART 77 DESIGNATION	LARGER THAN UTILITY / NPI	SAME
NPIAS ROLE / SERVICE LEVEL	GENERAL AVIATION	SAME
TERMINAL NAVAIDS	GPS	SAME
TAXIWAY LIGHTING	REFLECTORS	SAME
TAXIWAY MARKING	BASIC	SAME

RUNWAY DATA TABLE				
	EXISTING CONDITIONS	EXISTING STANDARD	FUTURE CONDITIONS	FUTURE STANDARD
RUNWAY SAFETY AREA LENGTH AND WIDTH LENGTH BEYOND RUNWAY END	4756' X 150' 300'	4756' X 150' 300'	4756' X 150' 300'	4756' X 150' 300'
OBJECT FREE AREA LENGTH AND WIDTH LENGTH BEYOND RUNWAY END	4756' X 500' 300'	4756' X 500' 300'	4756' X 500' 300'	4756' X 500' 300'
OBSTACLE FREE ZONE LENGTH AND WIDTH LENGTH BEYOND RUNWAY END	4556' X 400' 200'	4556' X 400' 200'	4556' X 400' 200'	4556' X 400' 200'
OFZ PENETRATION	YES (SEE NOTE 2)	CLEAR	NO	CLEAR

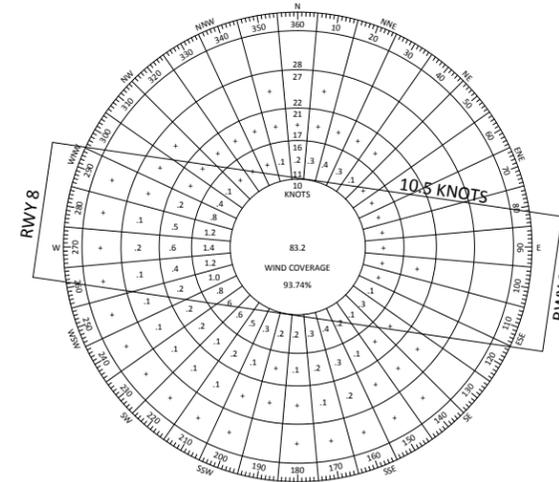
	EXISTING CONDITIONS		FUTURE CONDITIONS	
RUNWAY END	8	26	8	26
RUNWAY APPROACH CATEGORY	NPI	VISUAL	SAME	SAME
RUNWAY APPROACH SLOPE	PART 77 REQUIRED 34:1	20:1 (SEE NOTE 4)	SAME	SAME
	ACTUAL 26:1 (SEE NOTE 3)	50:1 (SEE NOTE 4)	SAME	SAME
APPROACH VISIBILITY MINIMUMS	≥ 1 MILE	≥ 1 MILE	SAME	SAME
RUNWAY MARKINGS	NPI (SEE NOTE 1)	VISUAL	NON-PRECISION	VISUAL
RUNWAY END COORDINATES	LAT. LONG. N 45° 27' 18.07" W 119° 41' 53.77"	N 45° 27' 11.77" W 119° 40' 56.27"	N 45° 27' 18.07" W 119° 41' 53.77"	N 45° 27' 11.77" W 119° 40' 56.17"
INSTRUMENTATION AND APPROACH AIDS	GPS	GPS	GPS	GPS
VISUAL AIDS	PAPI	PAPI	PAPI / REIL	PAPI / REIL
CRITICAL AIRCRAFT (ARC)	AIR TRACTOR 802		SAME	
WINGSPAN	< 79'		SAME	
WEIGHT (LBS)	16,000 LBS (SW)		SAME	
APPROACH SPEED	91 TO <121 KNOTS		SAME	
LENGTH OF HAUL	<500 MILES		SAME	

NON STANDARD CONDITIONS			
NO.	ITEM	DESCRIPTION	DISPOSITION
1	RUNWAY OFZ	AIRCRAFT HOLD LINES LOCATED 125' FROM RUNWAY CL BASED ON PREVIOUS OFZ STANDARD (250' WIDE)	RELOCATE AIRCRAFT HOLD LINES AND SIGNAGE TO 200' FROM RUNWAY CL TO CLEAR OFZ
2	TAXILANE OFA (APRON)	AIRCRAFT PARKING POSITIONS PARTIALLY LOCATED IN OFA	RECONFIGURE APRON



NOTES:

- EXISTING RUNWAY 8 MARKINGS ARE VISUAL, BUT WILL BE REPLACED WITH NON PRECISION INSTRUMENT (NPI) MARKINGS BASED ON CURRENT INSTRUMENT APPROACH CAPABILITIES.
- EXISTING AC HOLD LINES AND RUNWAY SIGNAGE LOCATED 125' FROM RUNWAY CL BASED ON PREVIOUS STANDARD (250' OFZ). THESE ITEMS TO BE RELOCATED TO 200' FROM RUNWAY CL (BASED ON 400' OFZ).
- 20:1 OBSTACLE CLEARANCE SURFACE / THRESHOLD SITING SURFACE USED ON RUNWAY 8 TO CLEAR CLOSE-IN OBSTRUCTION (FENCE).
- RUNWAY 26 APPROACH CLEARANCE ESTIMATED AT 50:1 WITHIN VISUAL APPROACH SURFACE (LENGTH) OF 5000 FEET. TERRAIN CLEARANCE WITHIN TERPS DEPARTURE SURFACE IS <40:1.



ALL WEATHER WIND ROSE

SOURCE:
NOAA / NATIONAL WEATHER SERVICE DATA PENDLETON
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)

143,988 OBSERVATIONS (2009-2014)

RUNWAY 8/26 93.74% @ 10.5 KNOTS (12 MPH)

DRAFT

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NO.	DATE	BY	APPR	REVISIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" ██████████ 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

FEDERAL AVIATION
ADMINISTRATION APPROVAL

APPROVAL DATE: _____

SIGNATURE

MORROW COUNTY
APPROVAL

APPROVAL DATE: _____

SIGNATURE

CENTURY WEST
ENGINEERING

DESIGNED BY: DM
DRAWN BY: JLS
CHECKED BY: WMR
SCALE: AS SHOWN
DATE: MAY 2015
PROJECT NO: 12414002.02

BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

LEXINGTON AIRPORT

AIRPORT DATA SHEET

FIGURE NO.
-

SHEET NO.
2 OF 11

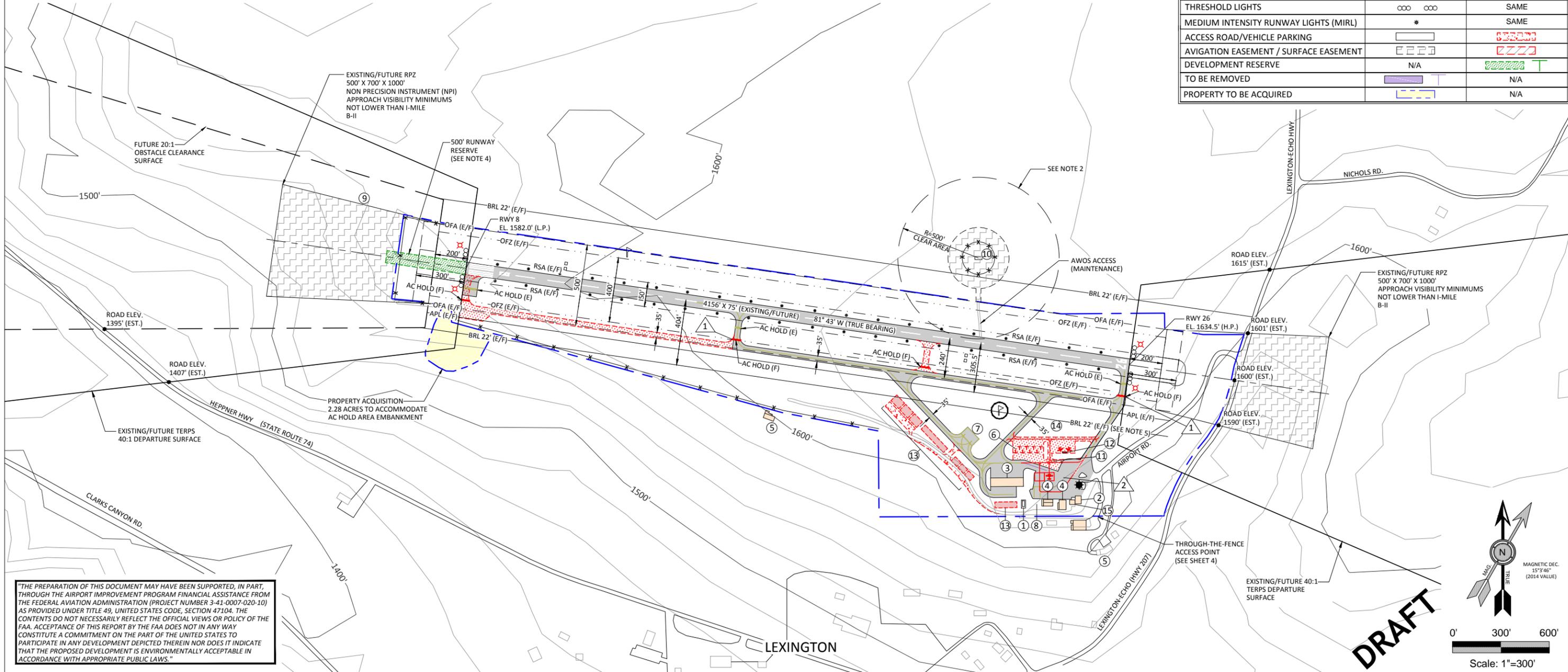
BUILDING/FACILITY KEY	
DESCRIPTION	
1	FUEL TANKS (PRIVATE)
2	COUNTY SHOP BLDG.
3	STORAGE HANGARS (EXISTING)
4	COMMERCIAL HANGAR (EXISTING)
5	RESIDENCE
6	TIEDOWN APRON (EXISTING/FUTURE)
7	AGRICULTURAL RAMP AREA
8	AGRICULTURAL LEASE AREA
9	CITY PORTABLE WATER TANK/WELL
10	AWOS - 3
11	AIRPORT FUEL ISLAND (EXISTING)
12	AIRPORT FUEL ISLAND (FUTURE)
13	HANGAR (FUTURE)
14	TIEDOWN APRON (FUTURE)
15	AIRPORT OFFICE / TERMINAL

NON STANDARD CONDITIONS			
NO.	ITEM	DESCRIPTION	DISPOSITION
1	RUNWAY OFZ	AIRCRAFT HOLD LINES LOCATED 125' FROM RUNWAY CL BASED ON PREVIOUS OFZ STANDARD (250' WIDE)	RELOCATE AIRCRAFT HOLD LINES AND SIGNAGE TO 200' FROM RUNWAY CL TO CLEAR OFZ
2	TAXILANE OFA (APRON)	AIRCRAFT PARKING POSITIONS PARTIALLY LOCATED IN OFA	RECONFIGURE APRON

NOTES:

- EXISTING AC HOLD LINES ON CONNECTING TAXIWAYS LOCATED 125' FROM RUNWAY CENTERLINE (250' OFZ) WILL BE RELOCATED TO 200' FROM RUNWAY CENTERLINE (400' OFZ).
- AWOS LOCATED OFF AIRPORT PROPERTY ON AN EASEMENT NEGOTIATED BETWEEN MORROW COUNTY AND PROPERTY OWNER.
- FOR CLARITY NPI MARKINGS DEPICTED FOR RUNWAY 8 (TO BE ADDED).
- RUNWAY EXTENSION RESERVE DEPICTED FOR ILLUSTRATION PURPOSES ONLY. PROJECT WOULD REQUIRE PROPERTY ACQUISITION AND ANALYSIS PRIOR TO DEVELOPMENT. THE RUNWAY EXTENSION RESERVE IS NOT REFLECTED IN AIRSPACE PLANNING DEPICTED ON SHEET 5.
- BRL (22') LOCATION CORRESPONDS TO TOP ELEVATION OF STRUCTURE 22 FEET ABOVE RUNWAY ELEVATION AT NEAREST POINT ON CENTERLINE. TALLER STRUCTURES MAY BE ACCOMMODATED WITH INCREASED SEPARATION FROM RUNWAY.
- EXISTING THROUGH-THE-FENCE AERONAUTICAL ACCESS AT LEXINGTON AIRPORT CONSISTS OF ONE COMMERCIAL HANGAR WITH A DEDICATED (PRIVATE) TAXIWAY CONNECTION TO THE MAIN APRON. THE USER ALSO MAINTAINS A PRIVATE RESIDENCE WITH A DEDICATED ACCESS ROAD THAT CONNECTS TO AIRPORT ROAD. SURFACE ACCESS TO BOTH THE HANGAR AND RESIDENCE IS VIA AIRPORT PROPERTY DUE TO PARCEL CONFIGURATION AND SITE TERRAIN.

LEGEND		
	EXISTING	FUTURE
BUILDINGS (AVIATION RELATED)	[Symbol]	[Symbol]
AIRFIELD PAVEMENT	[Symbol]	[Symbol]
BUILDING RESTRICTION LINE (BRL)	BRL (E)	BRL (F)
AIRCRAFT PARKING LINE (APL)	APL (E)	APL (F)
AIRPORT PROPERTY LINE	[Symbol]	[Symbol]
RUNWAY SAFETY AREA (RSA)	[Symbol]	[Symbol]
OBJECT FREE AREA (OFA)	[Symbol]	[Symbol]
OBSTACLE FREE ZONE (OFZ)	[Symbol]	[Symbol]
TAXIWAY OBJECT FREE AREA (TOFA)	[Symbol]	SAME
RUNWAY PROTECTION ZONE (RPZ)	[Symbol]	[Symbol]
GROUND CONTOURS	10'	SAME
AIRPORT REFERENCE POINT (ARP)	[Symbol]	[Symbol]
RUNWAY END IDENTIFIER LIGHTS (REIL)	[Symbol]	[Symbol]
VISUAL GUIDANCE INDICATORS (PAPI)	[Symbol]	[Symbol]
WIND INDICATOR	[Symbol]	[Symbol]
SEGMENTED CIRCLE	[Symbol]	[Symbol]
FENCE	[Symbol]	[Symbol]
BEACON	[Symbol]	SAME
THRESHOLD LIGHTS	[Symbol]	SAME
MEDIUM INTENSITY RUNWAY LIGHTS (MIRL)	[Symbol]	SAME
ACCESS ROAD/VEHICLE PARKING	[Symbol]	[Symbol]
AVIGATION EASEMENT / SURFACE EASEMENT	[Symbol]	[Symbol]
DEVELOPMENT RESERVE	N/A	[Symbol]
TO BE REMOVED	[Symbol]	N/A
PROPERTY TO BE ACQUIRED	[Symbol]	N/A



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NO.	DATE	BY	APPR	REVISIONS

FEDERAL AVIATION ADMINISTRATION APPROVAL

APPROVAL DATE: _____

SIGNATURE _____

MORROW COUNTY APPROVAL

APPROVAL DATE: _____

SIGNATURE _____

CENTURY WEST ENGINEERING

BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
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DESIGNED BY: DM DRAWN BY: JLS CHECKED BY: WMR SCALE: AS SHOWN
DATE: MAY 2015 PROJECT NO: 12414002.02

LEXINGTON AIRPORT

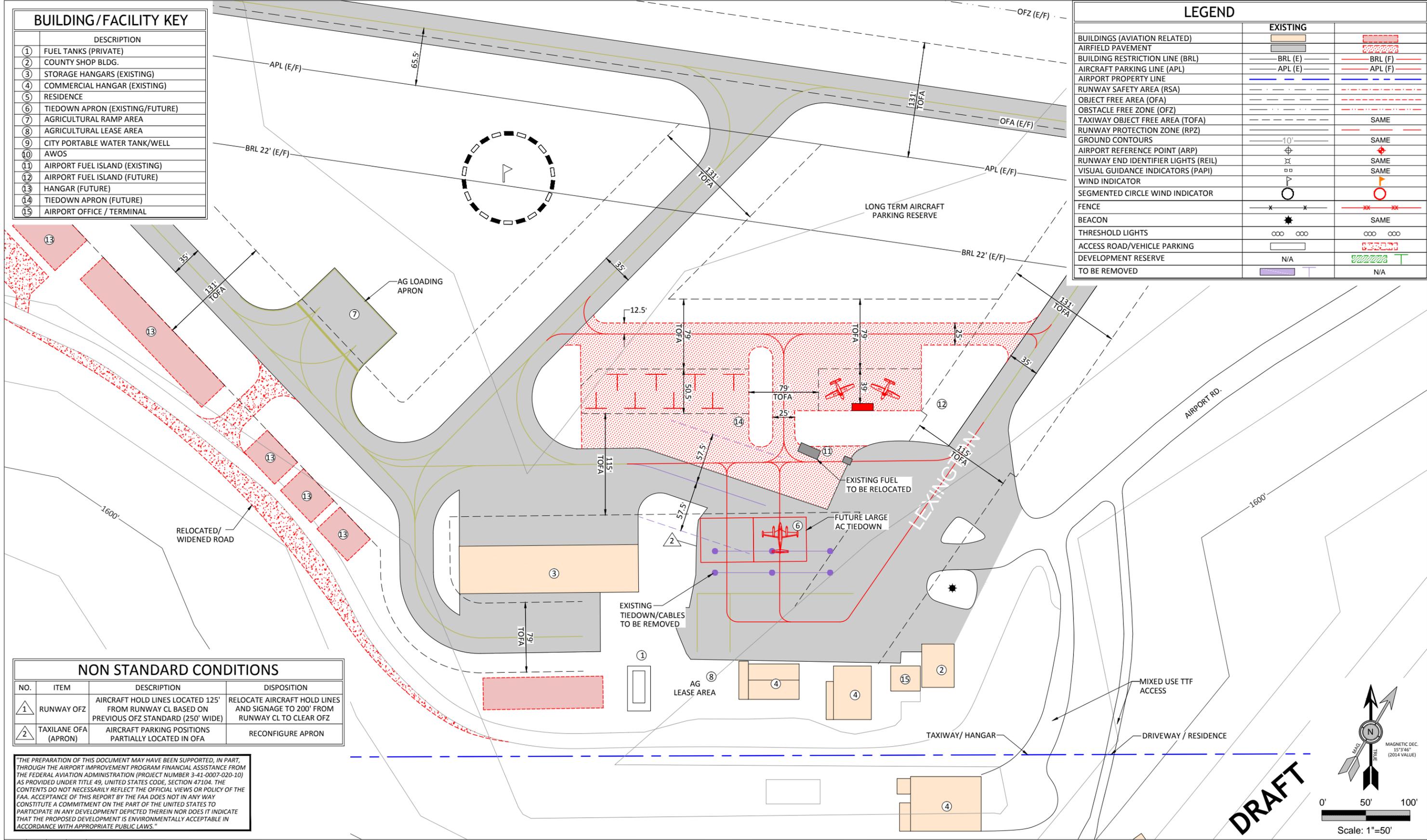
AIRPORT LAYOUT PLAN

FIGURE NO. -

SHEET NO. 3 OF 11

BUILDING/FACILITY KEY	
DESCRIPTION	
1	FUEL TANKS (PRIVATE)
2	COUNTY SHOP BLDG.
3	STORAGE HANGARS (EXISTING)
4	COMMERCIAL HANGAR (EXISTING)
5	RESIDENCE
6	TIEDOWN APRON (EXISTING/FUTURE)
7	AGRICULTURAL RAMP AREA
8	AGRICULTURAL LEASE AREA
9	CITY PORTABLE WATER TANK/WELL
10	AWOS
11	AIRPORT FUEL ISLAND (EXISTING)
12	AIRPORT FUEL ISLAND (FUTURE)
13	HANGAR (FUTURE)
14	TIEDOWN APRON (FUTURE)
15	AIRPORT OFFICE / TERMINAL

LEGEND		
	EXISTING	
BUILDINGS (AVIATION RELATED)	[Symbol]	[Symbol]
AIRFIELD PAVEMENT	[Symbol]	[Symbol]
BUILDING RESTRICTION LINE (BRL)	BRL (E)	BRL (F)
AIRCRAFT PARKING LINE (APL)	APL (E)	APL (F)
AIRPORT PROPERTY LINE	[Symbol]	[Symbol]
RUNWAY SAFETY AREA (RSA)	[Symbol]	[Symbol]
OBJECT FREE AREA (OFA)	[Symbol]	[Symbol]
OBSTACLE FREE ZONE (OFZ)	[Symbol]	[Symbol]
TAXIWAY OBJECT FREE AREA (TOFA)	[Symbol]	SAME
RUNWAY PROTECTION ZONE (RPZ)	[Symbol]	[Symbol]
GROUND CONTOURS	10'	SAME
AIRPORT REFERENCE POINT (ARP)	[Symbol]	[Symbol]
RUNWAY END IDENTIFIER LIGHTS (REIL)	[Symbol]	SAME
VISUAL GUIDANCE INDICATORS (PAPI)	[Symbol]	SAME
WIND INDICATOR	[Symbol]	[Symbol]
SEGMENTED CIRCLE WIND INDICATOR	[Symbol]	[Symbol]
FENCE	[Symbol]	[Symbol]
BEACON	[Symbol]	SAME
THRESHOLD LIGHTS	[Symbol]	[Symbol]
ACCESS ROAD/VEHICLE PARKING	[Symbol]	[Symbol]
DEVELOPMENT RESERVE	N/A	[Symbol]
TO BE REMOVED	[Symbol]	N/A



NON STANDARD CONDITIONS			
NO.	ITEM	DESCRIPTION	DISPOSITION
1	RUNWAY OFZ	AIRCRAFT HOLD LINES LOCATED 125' FROM RUNWAY CL BASED ON PREVIOUS OFZ STANDARD (250' WIDE)	RELOCATE AIRCRAFT HOLD LINES AND SIGNAGE TO 200' FROM RUNWAY CL TO CLEAR OFZ
2	TAXILANE OFA (APRON)	AIRCRAFT PARKING POSITIONS PARTIALLY LOCATED IN OFA	RECONFIGURE APRON

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NO.	DATE	BY	APPR	REVISIONS

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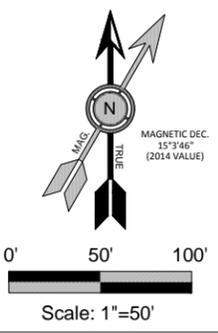
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 BEND, OR 97702
 541.322.8962
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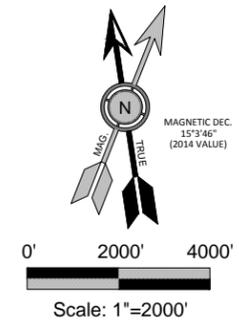
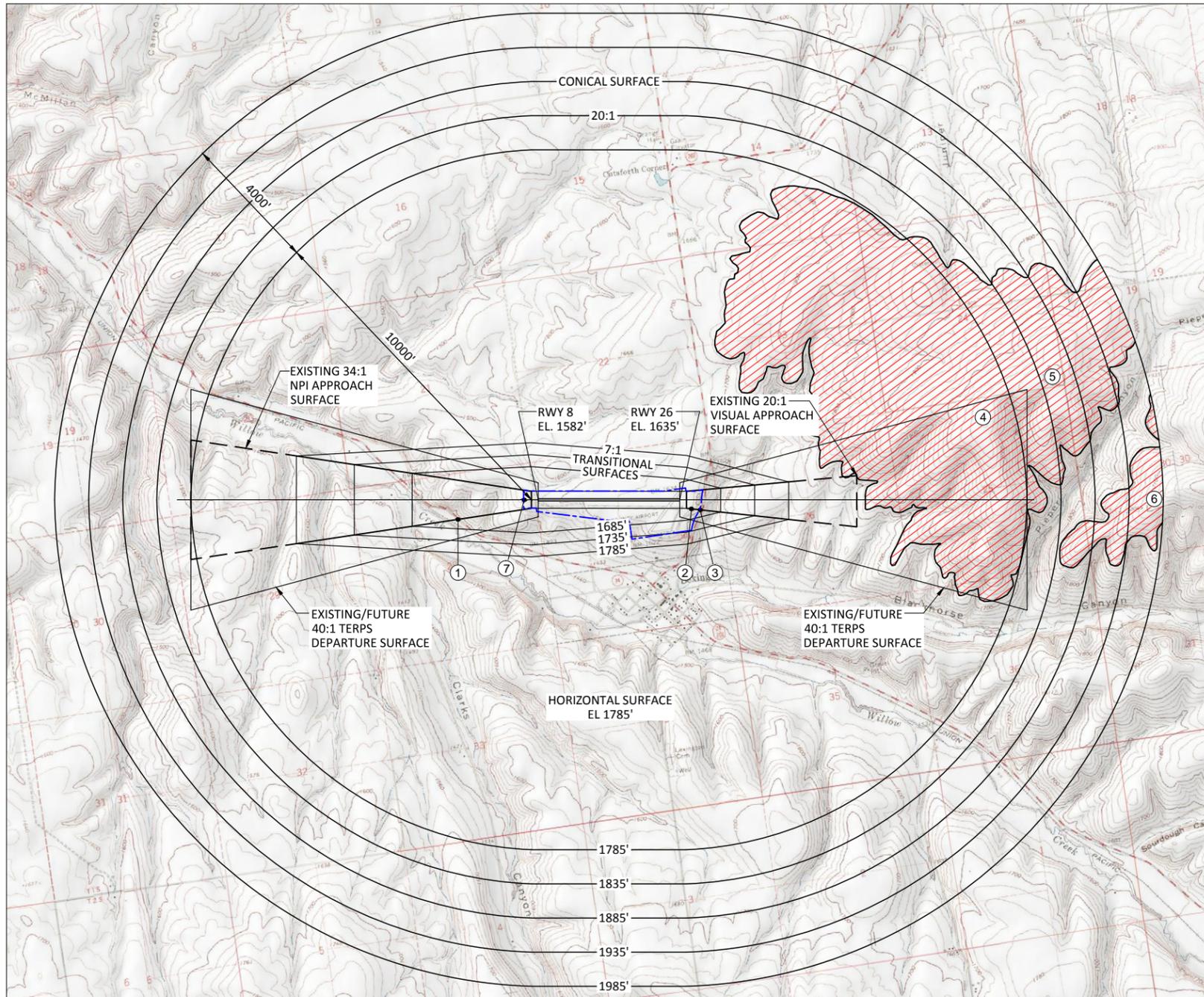
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 DRAWN BY: JLS
 CHECKED BY: WMR
 SCALE: AS SHOWN
 DATE: MAY 2015
 PROJECT NO: 12414002.02

LEXINGTON AIRPORT
 TERMINAL AREA PLAN

FIGURE NO. -
 SHEET NO. 4 OF 11

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RUNWAY 8/26	
EXISTING / FUTURE FAR PART 77 DIMENSIONAL STANDARDS	
RUNWAY ULTIMATE LENGTH = 4156'	
RUNWAY TYPE = LARGER THAN UTILITY	
PRIMARY SURFACE WIDTH = 500'	
RADIUS OF HORIZONTAL SURFACE = 10,000'	
RUNWAY 8	
APPROACH SURFACE INNER WIDTH = 500'	
APPROACH SURFACE OUTER WIDTH = 3,500'	
APPROACH SURFACE LENGTH = 10,000'	
APPROACH SLOPE = 34:1	
RUNWAY 26	
APPROACH SURFACE INNER WIDTH = 500'	
APPROACH SURFACE OUTER WIDTH = 1,500'	
APPROACH SURFACE LENGTH = 5,000'	
APPROACH SLOPE = 20:1	

FAR PART 77 PLAN VIEW

- NOTES:**
- DISTANCES FOR NOTED OBSTRUCTIONS ARE BASED ON THE ULTIMATE RUNWAY CONFIGURATION. DIMENSIONS INCLUDE 200' DISTANCE FROM RUNWAY END TO BEGINNING OF APPROACH.
 - TERRAIN PENETRATION ESTIMATED BASED ON VISUAL REVIEW OF USGS QUADRANGLE MAP TOPOGRAPHY.
 - SEE INNER PORTION OF THE APPROACH PLAN AND PROFILE VIEW FOR CLOSE-IN OBSTRUCTIONS.
 - TERPS (INSTRUMENT) DEPARTURE SURFACES DEPICTED FOR BOTH RUNWAY ENDS BASED ON EXISTING INSTRUMENT CAPABILITIES (DEPARTURE RUNWAY ENDS FOR ALL INSTRUMENT OPERATIONS). AS DEFINED IN FAA AC-150/5300-13A (CHAPTER 3, RUNWAY DESIGN, SECTION 303.C)

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OBSTRUCTION CHART								
NO.	ITEM	PART 77 SURFACE	MSL ELEV (EST.)	DISTANCE FROM RWY CL	DISTANCE FROM RWY END	AMOUNT OF PENETRATION (ESTIMATED)	AIRPORT PROPERTY	DISPOSITION
1	HEPPNER HIGHWAY	APPROACH RWY 8	1475'	573'	2358'	0'	NO	NO OBSTRUCTION (FOR REFERENCE ONLY)
2	AIRPORT ROAD	APPROACH RWY 26	1640'	266'	342'	0'	NO	NO OBSTRUCTION (FOR REFERENCE ONLY)
3	LEXINGTON ECHO HIGHWAY	APPROACH RWY 26	1615'	294'	598'	0'	NO	NO OBSTRUCTION (FOR REFERENCE ONLY)
4	TERRAIN	HORIZONTAL	2080'	2416.5'	8902'	295'	NO	NONE
5	TERRAIN	CONICAL	2100'	3606.6'	10941.7'	240'	NO	NONE
6	TERRAIN	CONICAL	2120'	24.6'	13932'	140'	NO	NONE
7	FENCE	APPROACH RWY 8	1590'	0'	415'	2'+	YES	OCS/TSS

DRAFT

NO.	DATE	BY	APPR	REVISIONS

FEDERAL AVIATION ADMINISTRATION APPROVAL

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SIGNATURE

MORROW COUNTY APPROVAL

APPROVAL DATE: _____

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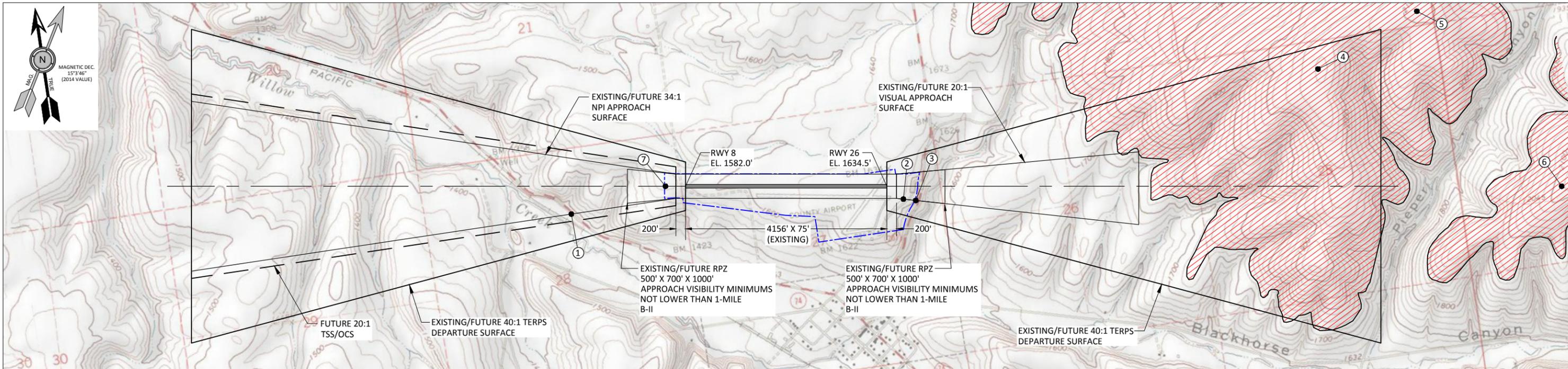
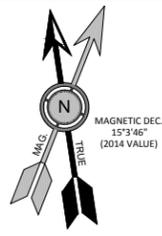
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DATE: MAY 2015 PROJECT NO: 12414002.02

LEXINGTON AIRPORT

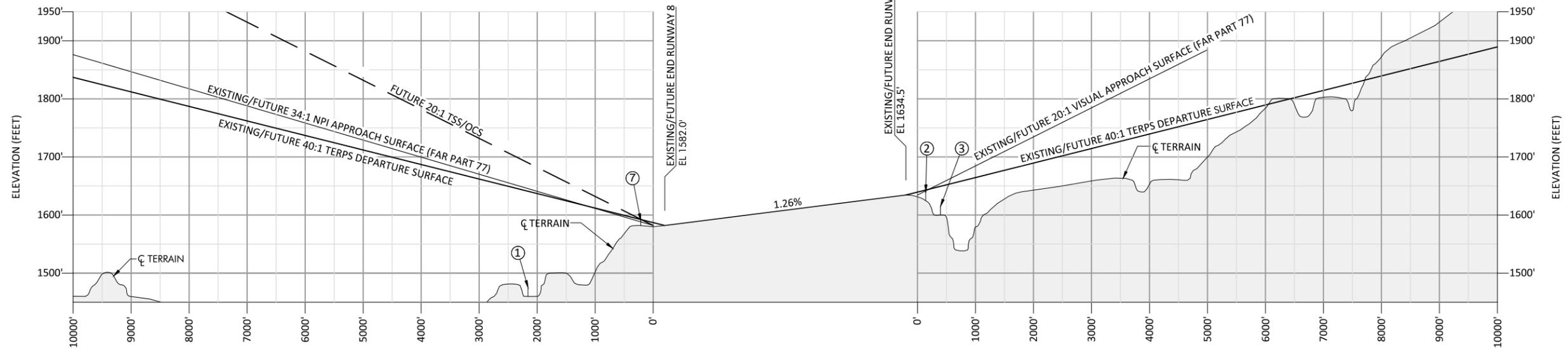
AIRPORT AIRSPACE PLAN (FAR PART 77)

FIGURE NO. -
SHEET NO. 5 OF 11



0' 1000' 2000'
Scale: 1"=1000'

RUNWAY 8-26 PLAN VIEW



0' 100' 200'
Scale Of Feet
Vertical Scale 1"=100'

RUNWAY 8-26 PROFILE VIEW

0' 1000' 2000'
Scale Of Feet
Horizontal Scale 1"=1000'



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NOTE:

1. DISTANCES FOR NOTED OBSTRUCTIONS ARE BASED ON THE ULTIMATE RUNWAY CONFIGURATION. DIMENSIONS INCLUDE 200' DISTANCE FROM RUNWAY END TO BEGINNING OF APPROACH.
2. SEE AIRPORT AIRSPACE PLAN (SHEET 5) FOR OBSTRUCTIONS LOCATED IN OUTER PART 77 SURFACE.
3. TSS/OCS (#5) PER AC 150/5300-13A (800' X 3800' X 10000') BASED ON STANDARDS FOR RUNWAYS SUPPORTING INSTRUMENT NIGHT OPERATIONS GREATER THAN CATEGORY B AIRCRAFT.

OBSTRUCTION CHART

NO.	ITEM	PART 77 SURFACE	MSL ELEV (EST.)	DISTANCE FROM RWY CL	DISTANCE FROM RWY END	AMOUNT OF PENETRATION (ESTIMATED)	AIRPORT PROPERTY	DISPOSITION
1	HEPPNER HIGHWAY	APPROACH RWY 8	1475'	573'	2358'	0'	NO	NO OBSTRUCTION (FOR REFERENCE ONLY)
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6	TERRAIN	CONICAL	2120'	24.6'	13932'	140'	NO	NONE
7	FENCE	APPROACH RWY 8	1590'	0'	415'	2'+	YES	OCS/TSS

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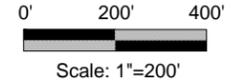
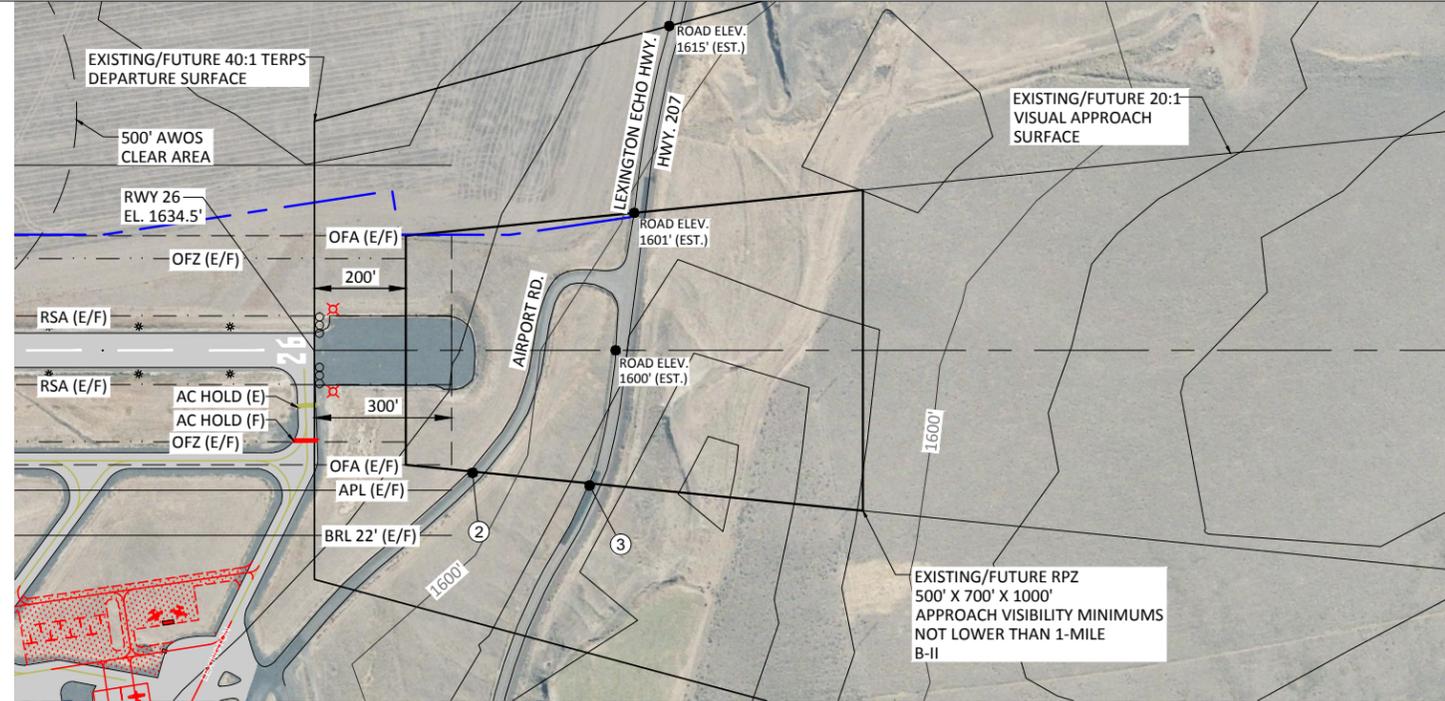
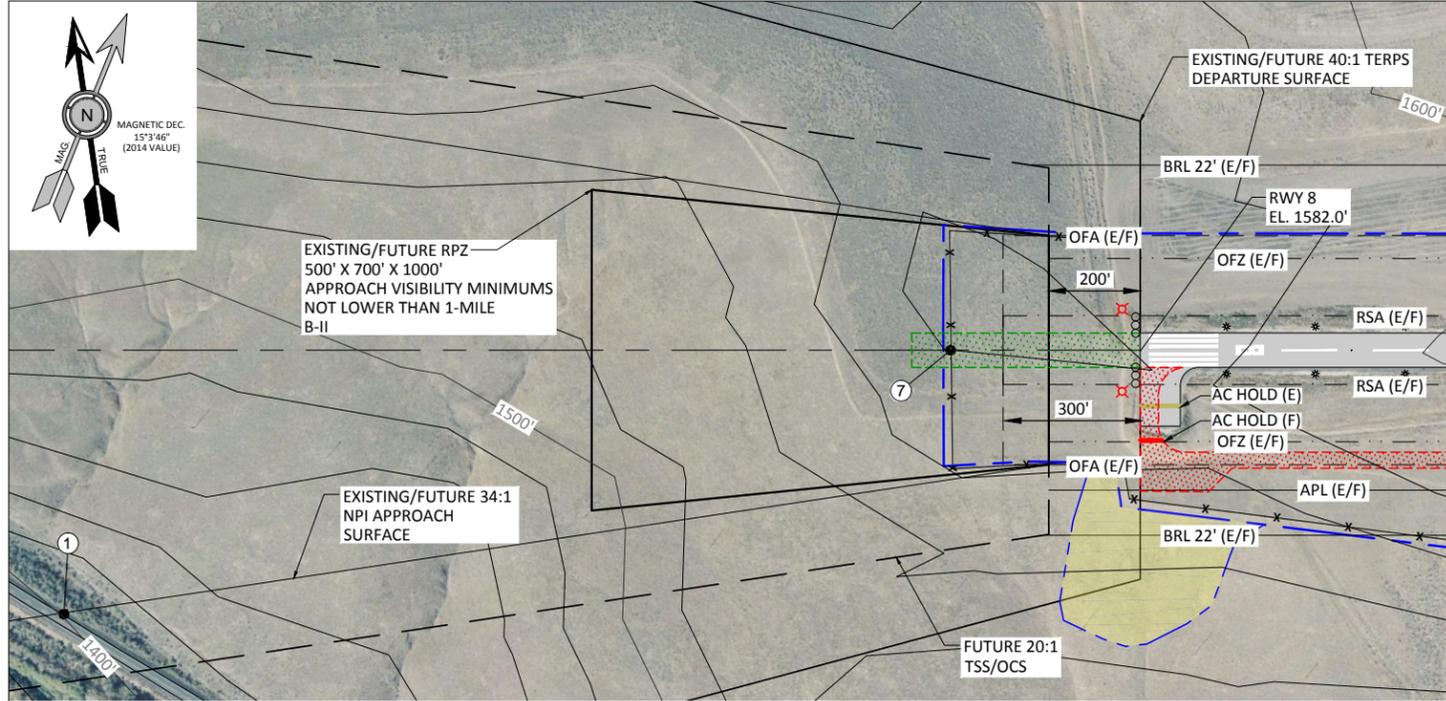
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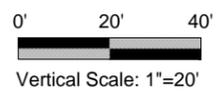
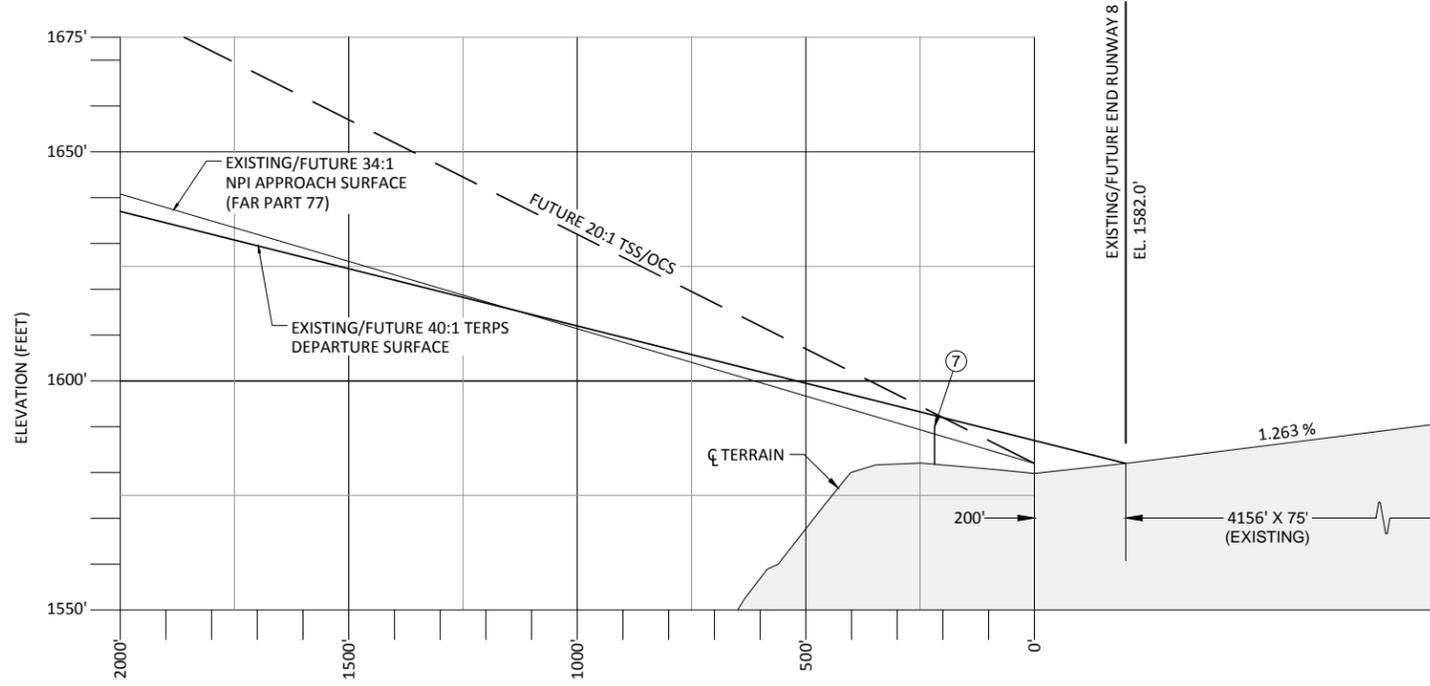
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BEND, OR 97702
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541.382.2423 FAX
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DRAWN BY: JLS
CHECKED BY: WMR
SCALE: AS SHOWN
DATE: MAY 2015
PROJECT NO: 12414002.02

LEXINGTON AIRPORT
RUNWAY 8/26 APPROACH PLAN AND PROFILE

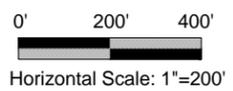
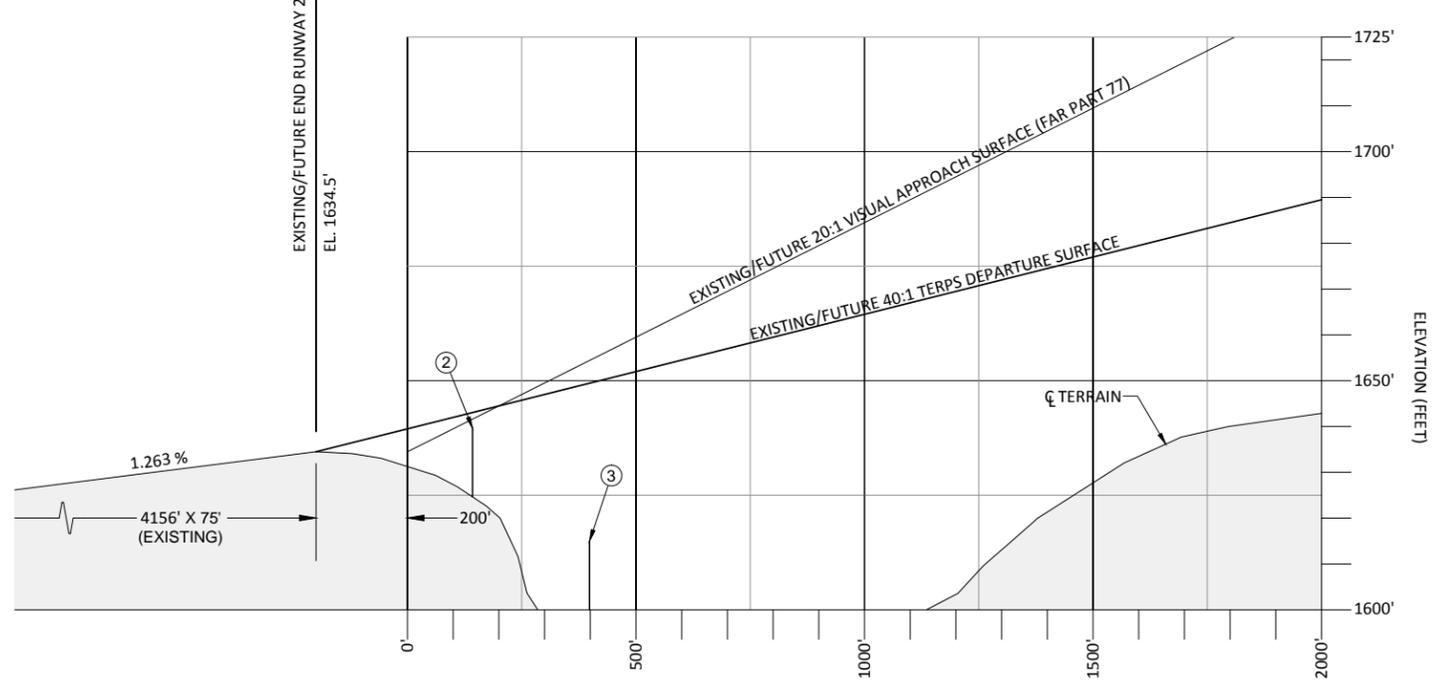
FIGURE NO. -
SHEET NO. 6 OF 11



RUNWAY 8-26 PLAN VIEW



RUNWAY 8-26 PROFILE VIEW



NOTES:

- SEE SHEET 5 OF 11 FOR LIST OF OBSTRUCTIONS.
- SEE SHEET 3 OF 11 FOR LEGEND.
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- FOR CLARITY NPI MARKINGS DEPICTED FOR RUNWAY 8 (TO BE ADDED).
- EXISTING AC HOLD LINES ON CONNECTING TAXIWAYS LOCATED 125' FROM RUNWAY CENTERLINE (250' OFZ) WILL BE RELOCATED TO 200' FROM RUNWAY CENTERLINE (400' OFZ).

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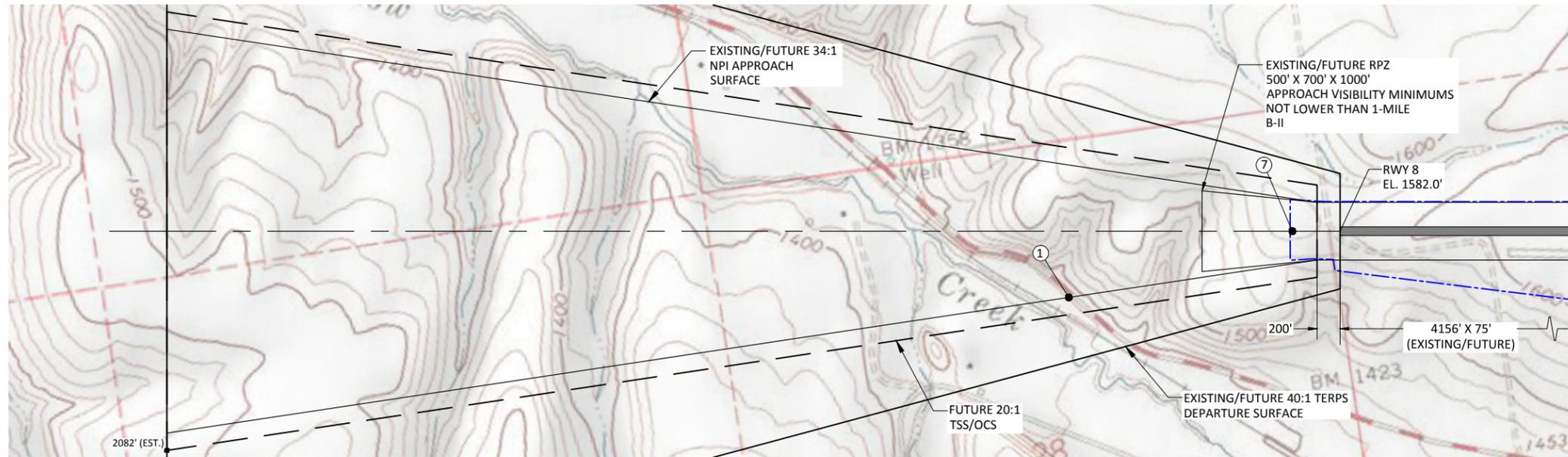
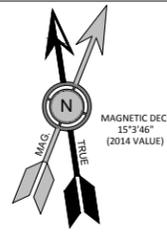
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LEXINGTON AIRPORT

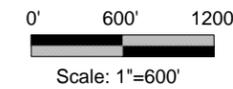
**RUNWAY 8/26 RPZ AND INNER APPROACH
PLAN AND PROFILE**

FIGURE NO.
-

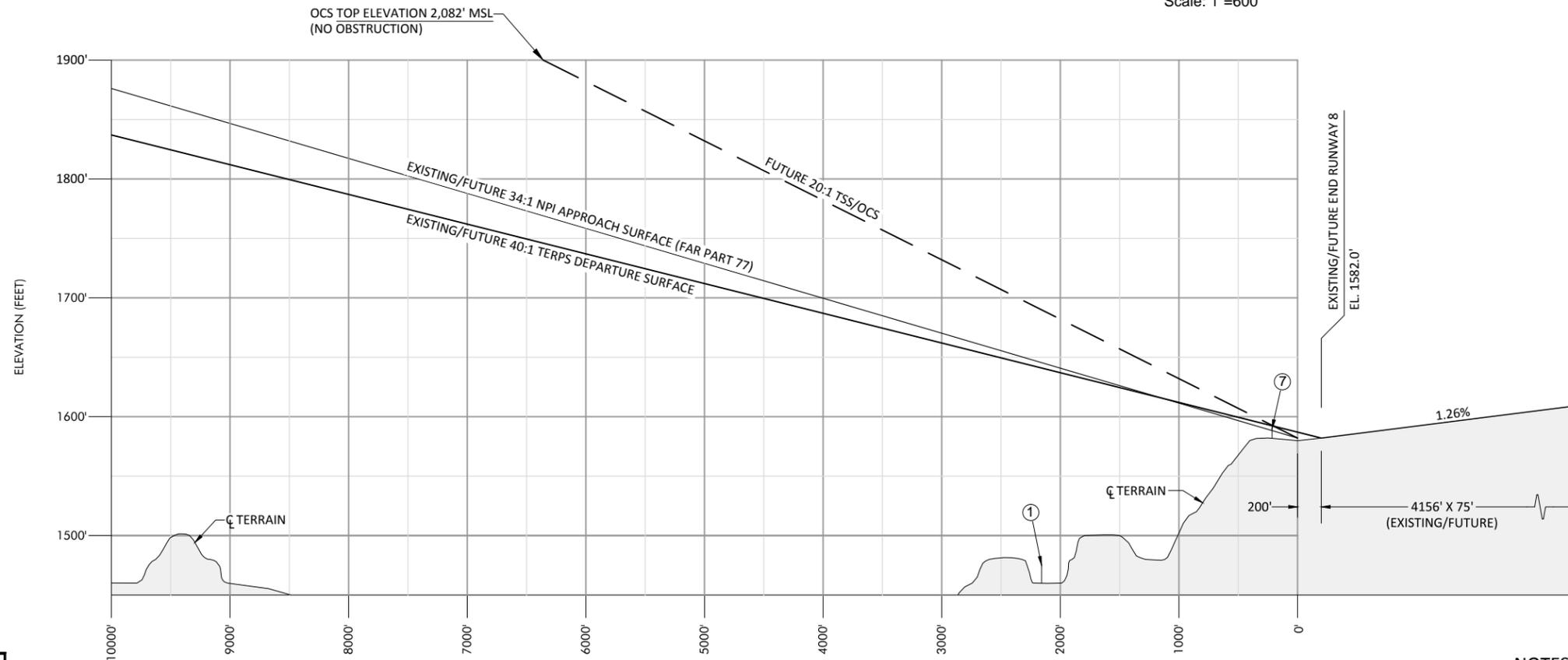
SHEET NO.
7 OF 11



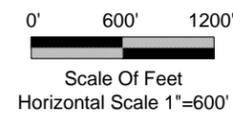
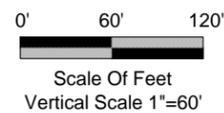
RUNWAY 8 PLAN VIEW



AREAS OF TERRAIN PENETRATION (NONE IDENTIFIED)



RUNWAY 8 PROFILE VIEW



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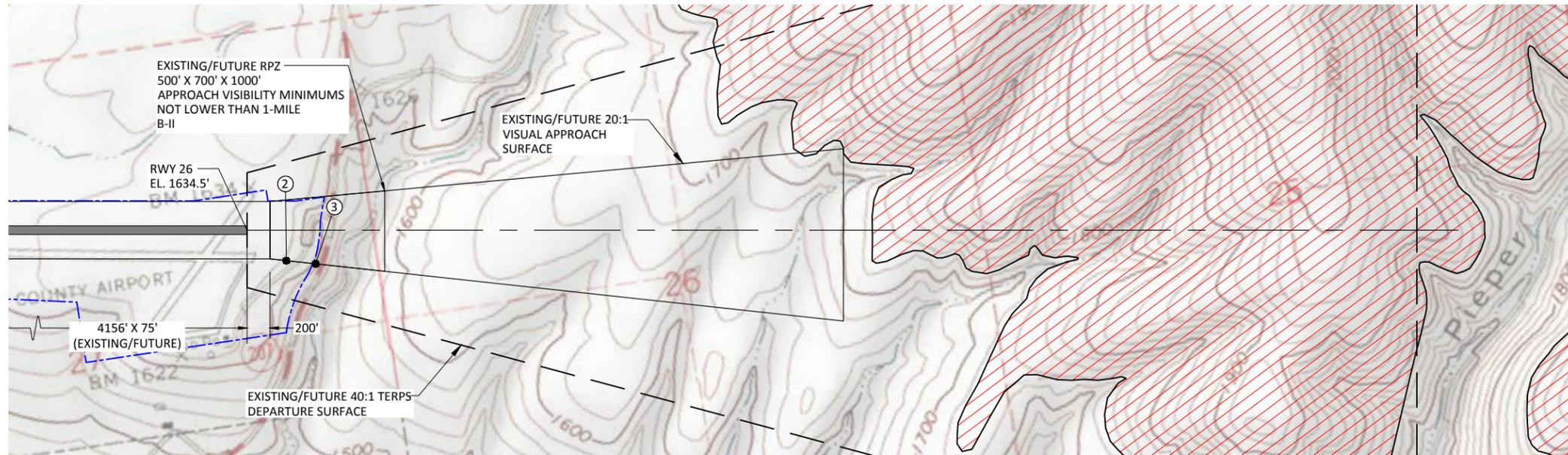
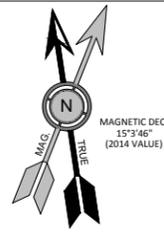
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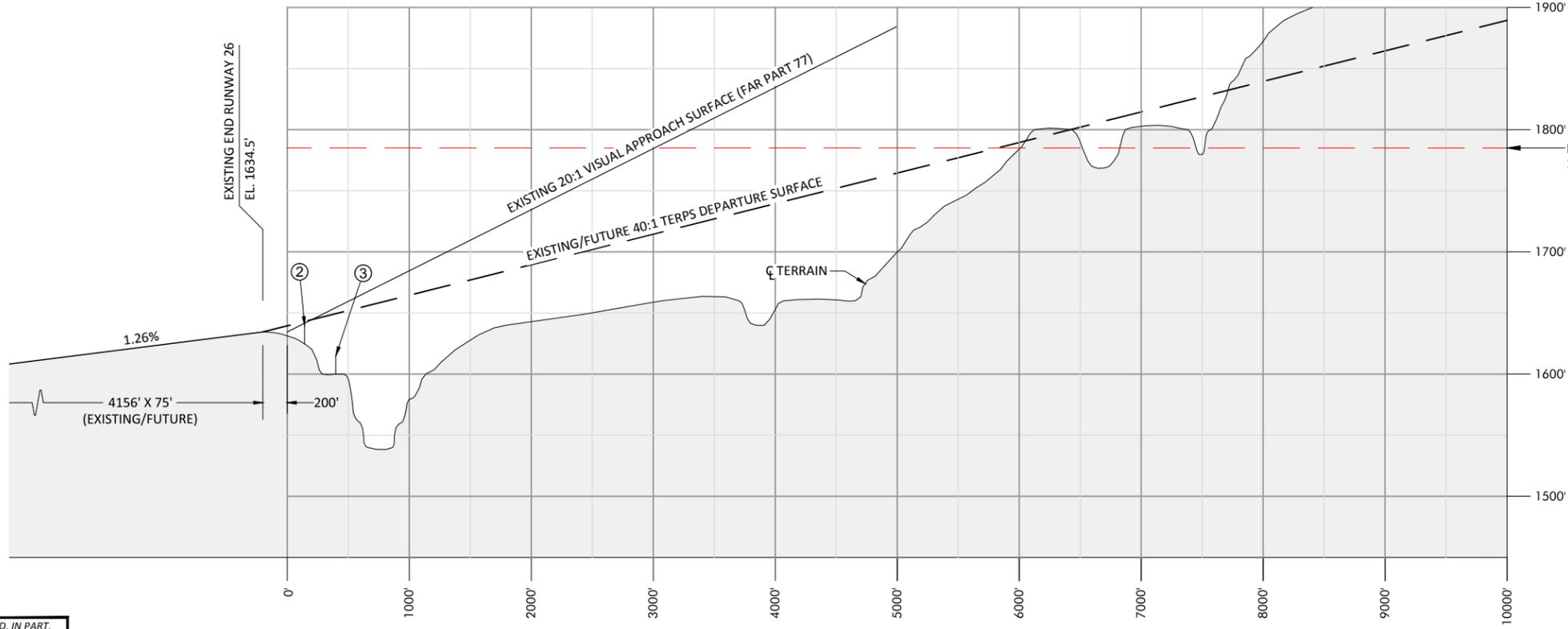
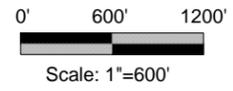
LEXINGTON AIRPORT
RUNWAY 8 APPROACH SURFACE
PLAN AND PROFILE

FIGURE NO. -
SHEET NO. 8 OF 11



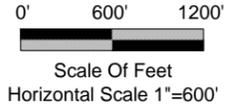
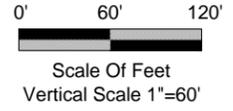
NOTE:
1. AREAS OF TERRAIN PENETRATION DEPICTED IN PLAN VIEW REFLECT HORIZONTAL SURFACE AREAS OF PENETRATION. SEE SHEET 5 FOR FULL VIEW OF TERRAIN PENETRATION.

RUNWAY 26 PLAN VIEW



HORIZONTAL SURFACE ELEVATION 1785' MSL

RUNWAY 26 PROFILE VIEW



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4. TERRAIN PENETRATION DEPICTED IN PROFILE VIEW REPRESENTS TERRAIN ALONG THE EXTENDED RUNWAY CENTERLINE.

NO.	DATE	BY	APPR	REVISIONS

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SIGNATURE: _____

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DESIGNED BY: DM
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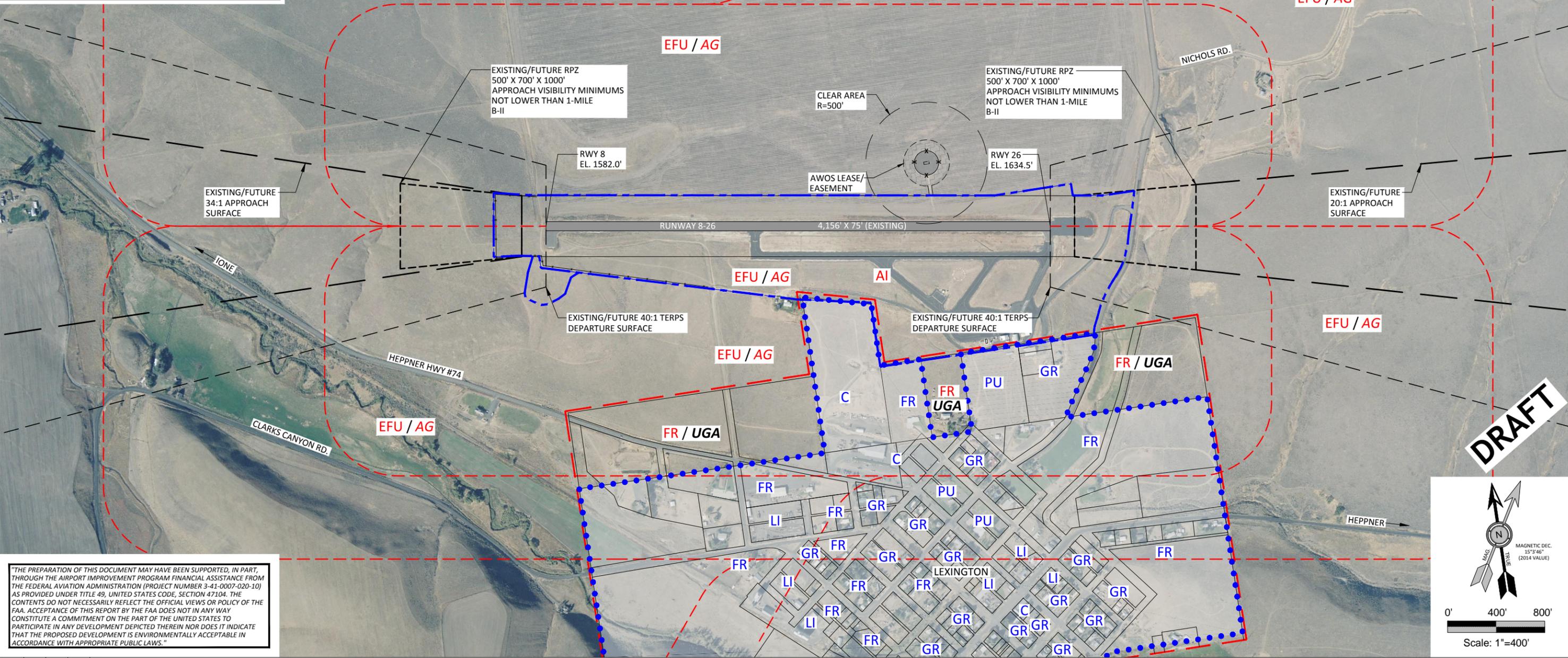
LEXINGTON AIRPORT
RUNWAY 26 APPROACH SURFACE
PLAN AND PROFILE

FIGURE NO. -
SHEET NO. 9 OF 11

LEGEND

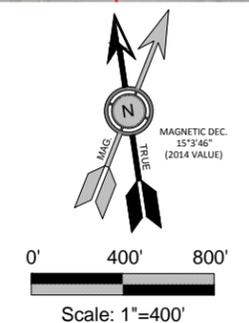
MORROW COUNTY ZONING	
COMPREHENSIVE PLAN LAND USE DESIGNATION	
AG AGRICULTURAL	EFU EXCLUSIVE FARM USE
	FR FARM RESIDENTIAL
	AI AIR/INDUSTRIAL PARK OVERLAY ZONE
TOWN OF LEXINGTON	
COMPREHENSIVE PLAN LAND USE DESIGNATION	
UGA URBAN GROWTH AREA	FR RESIDENTIAL FARMLAND
	PU PUBLIC USE
	GR GENERAL RESIDENTIAL
	C COMMERCIAL
	LI LIGHT INDUSTRIAL

	ZONING BOUNDARY
	AIRPORT TRAFFIC PATTERN (TYP.)
	RUNWAY PROTECTION ZONE
	APPROACH SURFACE
	AIRPORT PROPERTY LINE (EXISTING)
	AIRPORT PROPERTY LINE (FUTURE)
	40:1 TERPS SURFACE
	LEXINGTON CITY LIMITS BOUNDARY
	URBAN GROWTH BOUNDARY



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FEDERAL AVIATION ADMINISTRATION APPROVAL
APPROVAL DATE: _____
SIGNATURE _____

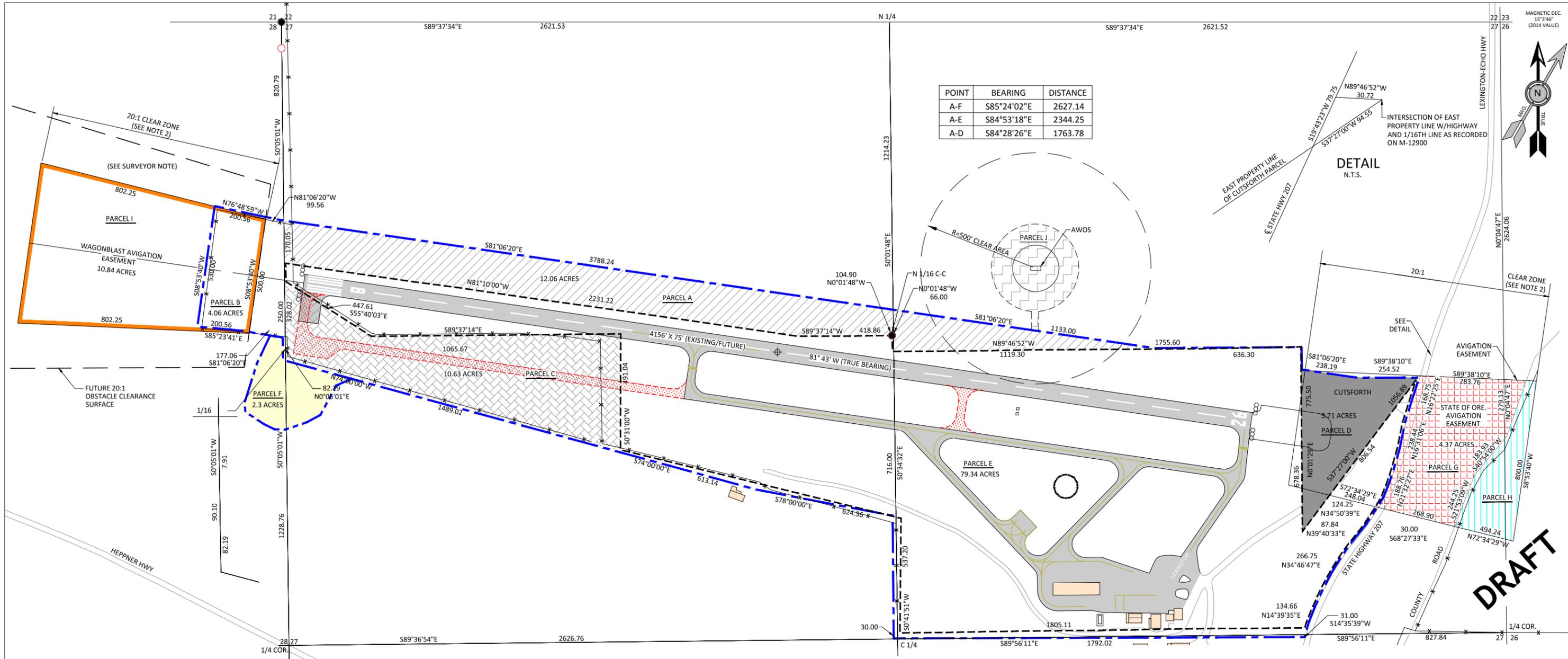
MORROW COUNTY APPROVAL
APPROVAL DATE: _____
SIGNATURE _____

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: DM	DRAWN BY: JLS	CHECKED BY: WMR	SCALE: AS SHOWN
DATE: MAY 2015	PROJECT NO: 12414002.02		

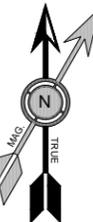
LEXINGTON AIRPORT
AIRPORT LAND USE PLAN

FIGURE NO. -
SHEET NO. 10 OF 11



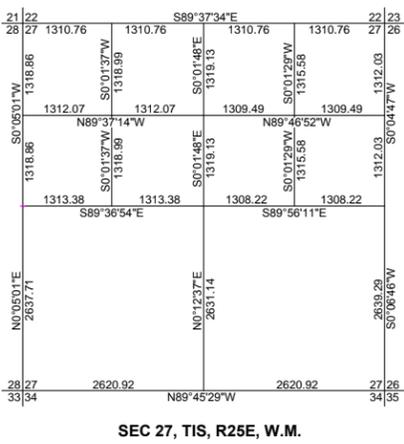
POINT	BEARING	DISTANCE
A-F	S85°24'02"E	2627.14
A-E	S84°53'18"E	2344.25
A-D	S84°28'26"E	1763.78

MAGNETIC DEC.
15°3'46"
(2014 VALUE)



DRAFT

- LEGEND**
- EXISTING PAVEMENT
 - FUTURE PAVEMENT
 - PROPOSED PROPERTY ACQUISITION
 - AIRPORT PROPERTY LINE (EXISTING)
 - AIRPORT PROPERTY LINE (FUTURE)
 - PARCEL LINES



SURVEYOR NOTE:

A LAND SURVEY WAS CONDUCTED TO DEFINE THE PRESENT AND NEW OWNERSHIP AND EASEMENT BOUNDARIES FOR EXPANSION OF THE MORROW COUNTY AIRPORT IN LEXINGTON, OREGON. THE INTERSECTION OF THE EAST PROPERTY LINE OF THE CUTSFORTH PARCEL WITH THE SOUTH LINE OF THE NORTH ARE HALF OF THE NORTH EAST QUARTER AS RECORDED ON M-12900 DOES NOT MATCH THE FIELD TIES TO THE CENTERLINE OF THE EXISTING HIGHWAY. THE BEARINGS AND DISTANCES FROM THE LEGAL DESCRIPTIONS WERE HELD TO DEFINE THE EAST PROPERTY LINE OF SAID CUTSFORTH PARCEL.

- DENOTES 5/8"X30" IRON PIN W/ALUM. CAP STAMPED PLS 933
- DENOTES BRASS CAP SET
- DENOTES R/R SPIKE STAMPED PLS 933 AND WITNESS CAP SET.

PARCEL	ACREAGE	BORDER	DEED REFERENCE	DATE	DESCRIPTION
A	12.06		M-23084 M-23084	4-5-84 8-9-84	FEE SIMPLE TITLE FROM CUTSFORTH FAMILY AND MRS. ROSEWALL
B	4.06		M-23684	8-9-84	FEE SIMPLE TITLE BY CONDEMNATION
C	10.63		M-23684	8-9-84	FEE SIMPLE TITLE BY CONDEMNATION (CUTSFORTH)
D	3.71		M-23085 M-23680	4-5-84 8-9-84	FEE SIMPLE TITLE FROM CUTSFORTH FAMILY AND MRS. ROSEWALL
E	79.34		BK 64, PAGE 557 M-12900 M-12901	2-9-60 3-14-78 3-14-78	FEE SIMPLE TITLE BY MORROW COUNTY
F	2.3		-	TBD	PROPERTY NEEDED FOR RWY 8 AIRCRAFT HOLD AREA EMBANKMENT
EASEMENTS					
G	4.37		M-23698	8-15-84	AVIGATION EASEMENT GRANTED BY STATE OF OREGON
H	6.82		M-23320	5-24-84	AVIGATION EASEMENT GRANTED BY NICHOLS
I	10.84		M-23684	8-9-84	WAGONBLAST AVIGATION EASEMENT EASEMENT BY CONDEMNATION
J	2.60		-	-	EASEMENT FOR INSTALLATION & ACCESS TO AWOS

"THE PREPARATION OF THIS DOCUMENT MAY HAVE BEEN SUPPORTED, IN PART, THROUGH THE AIRPORT IMPROVEMENT PROGRAM FINANCIAL ASSISTANCE FROM THE FEDERAL AVIATION ADMINISTRATION (PROJECT NUMBER 3-41-0007-020-10) AS PROVIDED UNDER TITLE 49, UNITED STATES CODE, SECTION 47104. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY 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 THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."

- NOTES:**
- PARCEL G AVIGATION EASEMENT IS BASED ON 20:1 APPROACH SURFACE SLOPE. EASEMENT SHOULD BE UPDATED TO PROTECT 34:1 APPROACH SURFACE AND 40:1 TERPS DEPARTURE SURFACE.
 - ORIGINAL "CLEAR ZONE" TERMINOLOGY IS NOW "RUNWAY PROTECTION ZONE".

NO.	DATE	BY	APPR	REVISIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. 0" = 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

FEDERAL AVIATION ADMINISTRATION APPROVAL
APPROVAL DATE: _____
SIGNATURE: _____

MORROW COUNTY APPROVAL
APPROVAL DATE: _____
SIGNATURE: _____

CENTURY WEST ENGINEERING
BEND OFFICE
1020 SW EMIKAY DRIVE, #100
BEND, OR 97702
541.322.8962
541.382.2423 FAX

DESIGNED BY: DM
DRAWN BY: JLS
CHECKED BY: VMR
SCALE: N.T.S.
DATE: MAY 2015
PROJECT NO: 12414002.02

LEXINGTON AIRPORT
EXHIBIT "A" AIRPORT PROPERTY PLAN

FIGURE NO. -
SHEET NO. 11 OF 11

Chapter 9 – Airport Land Use Compatability





Chapter 9 – Airport Land Use Compatibility



Introduction

This chapter describes land use associated with Lexington Airport and its surroundings, land use controls, Oregon State guidance for land use compatibility planning, protection of airports, and jurisdictional responsibilities.

Government Roles in Airport Land Use

FEDERAL

The Federal Aviation Administration (FAA) does not have authority to regulate off airport land use, including the construction of built items. Land use regulation is a local responsibility and FAA has a technical advisory role based on its interest in protecting the airspace associated with an airport as part of the national airspace system. The FAA has a role in regulating on-airport land use through approval of the Airport Layout Plan (ALP) and airport sponsor compliance with FAA Airport Improvement Program (AIP) grant assurances, which include measures to maintain airport land use compatibility and to protect the aeronautical function of an airport by restricting the location of non-aviation land uses.

Under **14 Code of Federal Regulations (CFR), Part 77**, the FAA has the authority to review proposed construction through its 7460-1 (Notice of Proposed Construction or Alteration) process. The FAA review addresses compatibility for both on and off airport based on the potential for creating a “hazard to



air navigation” associated with obstructions/penetrations in defined airspace. FAA airspace reviews include **FAR Part 77** surfaces; Terminal Instrument Procedures (TERPS) surfaces, visual runway traffic patterns, and visual navigation aid (e.g., VASI, PAPI, etc.) protected airspace. When a proposed structure penetrates navigable airspace, the FAA will issue a letter objecting to the proposed action (determination of presumed hazard to air navigation) for the consideration of local authorities. When proposed actions do not present a hazard to air navigation, a “no objection” finding is issued. It is important to note that this analysis is based on an obstruction evaluation and is not intended to address land use compatibility in terms of noise exposure or proximity to an airport or runway.

In cases where the airport sponsor is also the local land use authority such as Morrow County (Lexington Airport), local land use actions are reviewed for compliance with the FAA grant assurances intended to protect airports from incompatible land uses.

The FAA recommends that local jurisdictions include the following language in their development codes: “Nothing in this chapter shall diminish the responsibility of project proponents to submit a Notice of Construction or Alteration to the Federal Aviation Administration if required in accordance with Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace.”

FAR Part 150 (Airport Noise Compatibility Planning) provides guidance for land use compatibility around airports. The 1990 Airport Noise and Capacity Act (ANCA) defines federal policy on the regulation of airport noise (operating curfews, aircraft restrictions, etc.), with the intent of standardizing noise controls throughout the national system.

STATE

The State of Oregon has created a set of **Oregon Administrative Rules (OAR)**, contained in **Chapter 660 Department of Land Conservation and Development Division 12, Transportation Planning** and **Division 13, Airport Planning** to address airport protection and function. Local government shall follow State rules as described in **OAR 660** for planning and managing public-use airports. **Division 12** states that local governments shall participate and develop a Transportation System Plan with “measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation.” **Division 13** states “the policy of the State of Oregon is to encourage and support the continued operation and vitality of Oregon’s airports.” It includes “rules that 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.” A summary of these requirements is provided below:



- **660-013-0030 Preparation and Coordination of Aviation Plans** states “A city or county with planning authority for one or more airports, or areas within safety zones or compatibility zones described in this division, shall adopt comprehensive plan and land use regulations for airports consistent with the requirements of this division and ORS 836.600 through 836.630.”
- **660-013-0040 Aviation Facility Planning Requirements** provides a list of planning requirements including a map showing location of airport boundary, a map or description of existing and planned facilities, a projection of future aeronautical needs, etc.
- **660-013-0070 Local Government Safety Zones for Imaginary Surfaces** specifies that “local governments shall adopt an Airport Safety Overlay Zone to promote aviation safety by prohibiting structures, trees and other objects of natural growth from penetrating airport imaginary surfaces.”
- **660-13-0080 Local Government Land Use Compatibility Requirements for Public Use Airports** provides a list of requirements including prohibiting new residential development and public assemble uses within the Runway Protection Zone (RPZ) and limits establishment of uses within the noise impact boundary.
- **660-013-0100 Airport Uses at Non-Towered Airports** requires local government to adopt land use regulations that authorize a range of defined airport uses within the airport boundary of non-towered airports.
- **660-013-0140 Safe Harbors** defines “safe harbor” requirements that maybe used by local government to rely of existing comprehensive plans land use regulations, Airport Master Plans and Airport Layout Plans.
- **660-013-155 Planning Requirements for Small Airports** specifies that airports are to be subject to the planning and zoning requirements within ORS 836.

Division 13 implements **Oregon Revised Statutes (ORS) 836.600** through **836.630**, which promotes land use planning to reduce unnecessary risk to aircraft operations. Several key statutes that are important in land use planning are summarized below:

- **836.608 Airport operation as matter of state concern (local planning documents to recognize airport location, limitations on use and expansion of facility)** requires local governments to recognize airport locations within planning documents. It also establishes limitations on use and a process in which airports can add new land uses on their property.



- **836.610 Local government land use plans and regulations to accommodate airport zone and uses (funding; rules)** requires local governments to amend their land use regulations and comprehensive plans in accordance to 836.616 and 836.619.
- **836.616 Rules for airport uses and activities** identifies types of permitted land uses and activities on airport property and requires local government to meet standards for safe land uses near airports.
- **836.623 Local compatibility and safety requirements more stringent than state requirements (criteria, water impoundments, report to federal agency and application to certain activities)** allows local governments to adopt land use compatibility and safety requirements that are more stringent than the minimum required by Land Conservation and Development Commission rules. It provides rules which limit the size of water impoundments near airports in an effort to reduce wildlife attractants.

LOCAL

Comprehensive Plan

The Comprehensive Plan designation of the land underlying the Lexington Airport is Agricultural, as opposed to the Boardman Airport which is Airport-Industrial. The Comprehensive Plan, adopted in 1980 and acknowledged in 1986, does address the Lexington Airport within the Transportation Element stating the following:

“The Morrow County Airport, near Lexington, provides airport facilities including an office building, T-type hangers [sic], tie-downs for airplanes, runway lights, wind indicator, beacon and two runways. Under present conditions, the airport can handle twin engine planes. Work is under way to compete surfacing of a 4,155 foot runway, the airport will be able to handle small jets. Partial State financing for this project may be obtained in the near future through use of the State Airplane Gas Tax. General financing of this County airport is obtained largely from operating surplus and some State aid.”

The Morrow County Comprehensive Plan Transportation Element also contains Findings and Policies specific to the Morrow County Airport at Lexington:

Findings – General: 11. The Lexington Airport is an important asset for commercial and agricultural growth in the South End.



Transportation Policies:

26. *The County should recognize that increasing reliance on aviation by agricultural concerns justifies continued maintenance and improvements to the Lexington Airport, which is well situated to serve central and southern Morrow County.*

27. *It shall be the policy of Morrow County to protect the Morrow County Airport at Lexington, Army Depot Airport, and the Boardman airport from incompatible uses through the application of the criteria established by the State Aeronautics publication “Airport Compatibility Guidelines 1981.*

Although somewhat outdated these findings and policies are as relevant today as they were in 1986. In addition to healthy agriculturally related crop spraying businesses located there, it is centrally located for medical evacuation of the central and southern county areas, and supports charter flights along with general aviation uses.

The Lexington Airport, based on the 2002 adoption of the Lexington Airport Layout Plan, has applied as an overlay zone the Air Industrial use zone. This was done to allow the uses recommended in that previous Airport Layout Plan. All of the surrounding lands under Morrow County land use controls have a Comprehensive Plan agricultural designations and complementary implementing Exclusive Farm Use (EFU) zoning

Transportation System Plan

The Morrow County 2012 Transportation System Plan (TSP)¹ includes several goals related to air transportation that are applicable to Lexington Airport including airport facilities, airport service plan, land use and general recommendations. The TSP Goal 7 provides policies that are designed to protect and promote air transportation in Morrow County:

Goal 7: Air Transportation

Goal 7: Support the local and regional air transportation needs of Morrow County.

Policy 7.1 Provide and maintain airport facilities to serve general aviation needs.

Policy 7.2 Expand airport facilities as necessary to support future service needs.

Policy 7.3 Coordinate with Aeronautics Section of ODOT when preparing airport planning documents and reviewing proposed land use development in the vicinity of the airport.

Policy 7.4 Encourage the establishment of passenger and freight air service in the future.

¹ Original Morrow County 1997 TSP prepared by KCM, Inc. and updated by CTS Engineers and Mitchell Nelson Group (July 23, 2005).



Policy 7.5 Maintain minimum operating standards for the County’s airports as required by the Federal Aviation Authority.

Policy 7.6 Establish appropriate land uses adjacent near airports that are compatible with airport noise levels and provide support to airport operations.

Airport Zoning

Lexington Airport is zoned as **Exclusive Farm Use (EFU)** by Morrow County (**Zoning Ordinance Article 3 Section 3.010**). In 2002, Morrow County adopted the **Air/Industrial Park Zone (AI)** (**Section 3.071**) as an overlay to the existing surface zoning at Lexington Airport to address aviation-related uses at the airport that are not defined in the EFU zone. The AI zone “is intended to recognize those areas devoted to or most suitable for the immediate operational facilities necessary for commercial and non-commercial aviation.” Morrow County’s adoption of the AI overlay zone mitigates the underlying limitations associated with EFU zoning and public use airport land uses and development, although the need for a separate “use” overlay zone could be eliminated if the primary zoning reflected traditional airport land uses.

The State of Oregon has developed a policy for agricultural land uses described in (ORS 215.243 and 215.203): “The purpose of Exclusive Farm Use land is to preserve and maintain agricultural lands for farm use consistent with historical, existing, and future needs, including economic needs that pertain to the production of agricultural products, and to permit the establishment of only those uses that are compatible with agricultural activities.” While there is nothing inherently incompatible with Lexington Airport and the surrounding agricultural land uses, it appears that an airport specific zone may provide more consistent guidance for evaluating future land use actions. It is recommended that Morrow County consider re-zoning Lexington Airport from EFU to an airport-specific zone that clearly defines a range of permitted and conditional uses normally associated with general aviation airports.

Airport Vicinity Zoning

The area surrounding the airport to the north, east, and west are zoned EFU (Morrow County). Lexington Airport abuts the Urban Growth Boundary (UGB) and the north side of the Town of Lexington. The Town of Lexington has established land use designations and zoning for the area defined by the current city limits and has coordinated with Morrow County regarding land use for the area with the Lexington Urban Growth Boundary (UGB). The Town of Lexington zoning includes: General Residential (GR) and Farm Residential (FR); Commercial (C) and Light Industrial (LI); and Public (P) use. Residential use allows single family dwellings, residential homes, and crop cultivation for the use of the tenant and not for on-site sales. Commercial use includes general businesses including but not limited to sales, service, and lodging; as long as the meet the dimensional standards and limitations. The Light Industrial zone, permits



a variety of businesses including manufacturing, processing, and warehousing within specified the dimensional standards and limitations.

Figure 9-1 depicts current land use and zoning for the airport vicinity. A copy of the Morrow County zoning ordinance is included in **Appendix C**.

Airport Overlay Zones

Morrow County has established airport specific overlay zones for public-use airports.

As noted earlier, Morrow County adopted the **Air/Industrial Park Zone (AI) (Section 3.071)** as an overlay to the existing (EFU) surface zoning at Lexington Airport to address aviation-related uses at the airport. The ordinance states “*Location of all development at Lexington Airport will be directed by the Lexington Airport Layout Plan.*” The AI zone defines the “Uses Permitted Outright” and “Conditional Uses” at the airport.

Section 3.090 Airport Approach Zone (A-A) defined for Lexington Airport is based on the “Approach Surface” depicted on the 2001 Lexington ALP. The A-A overlay provides the “Uses Permitted Outright” and “Conditional Uses” in the vicinity of the airport and provides building height limitations to protect **Part 77** surfaces as well as land use limitations within the approach surfaces.

Section 3.091 Airport Hazard Zone (A-H) defined for Lexington Airport applies to the “Approach Surface, Horizontal Surface and Conical Surface” depicted on the 2001 ALP. The A-H zone established “height limitations on structures and objects of natural growth, and otherwise regulating the use of property, in the vicinity of public-use airports by creating the appropriate zones and establishing the boundaries thereof.” The A-H Zone includes a generic list of “Airport Zones” with “Sub-Zones” and the associated height limitations of the defined surfaces.

The existing airport overlay zones (ordinance and mapping) will require review and updating to reflect the Airport Master Plan and 2015 Airport Layout Plan drawings when adopted. It is recommended that Morrow County coordinate with the Town of Lexington to incorporate all applicable overlay zones to ensure that consistent protections are provided within both jurisdictions.



Summary and Recommendations

Morrow County has taken steps to be proactive in ensuring the longevity and continued growth of Lexington Airport. At this time, there are no known incompatible land uses or activities in the immediate vicinity of the airport. Maintaining effective land use controls in the vicinity of the airport will be crucial in protecting the airport and ensuring the long term aeronautical viability of the site. As noted earlier, the current zoning for the airport (EFU) does not directly reflect the specific activities, operations, and facilities associated with public-use airports.

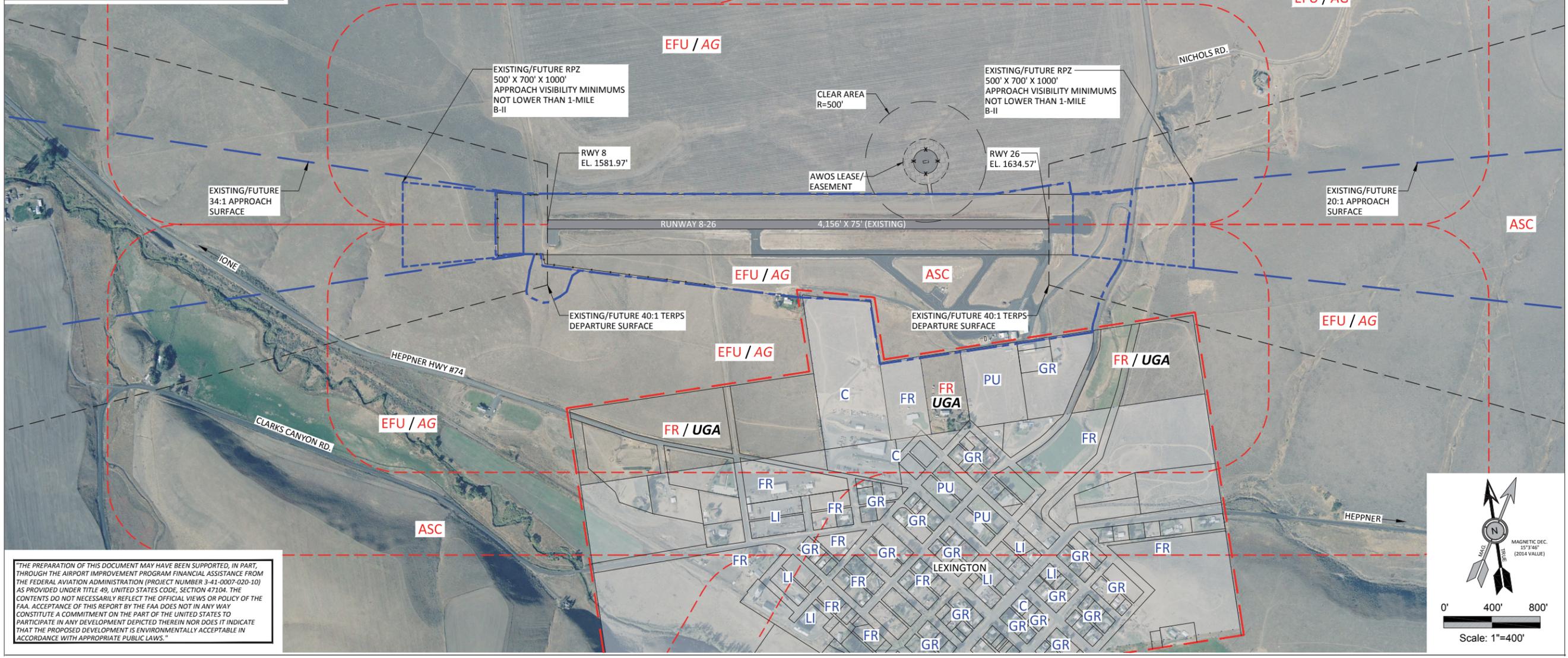
The following recommendations and actions are presented for Morrow County's consideration:

- Consider re-zoning Lexington Airport to an airport-specific zone that defines a range of airport uses and eliminates the need for an overlay zone for define appropriate land uses.
- Update the existing Airport Approach (A-A) and Airport Hazard (A-H) overlay zones for consistency with the 2015 Airport Layout Plan and future plan updates.
- Consider joint adoption of common airport overlay zoning language with the Town of Lexington.
- Conduct periodic review of the comprehensive plan land use goals and policies for compliance with Oregon land use regulations and consistency with current Airport Master Plan and Airport Layout Plan.
 - The review shall ensure that the plan provides policies, zoning provisions, implementing measures that address airports, and airport expansion. The plan should be reviewed for compliance with the current regulations regarding airport land use planning and address issues identified in the plan with the implementing ordinances to ensure that adopted airport compatibility requirements for public use airports are consistent with ORS 836.610 (1).

MORROW COUNTY ZONING	
COMPREHENSIVE PLAN LAND USE DESIGNATION	
AG AGRICULTURAL	EFU EXCLUSIVE FARM USE
	FR FARM RESIDENTIAL
	ASC AIRPORT SAFETY AND COMPATIBILITY OVERLAY ZONE
TOWN OF LEXINGTON	
COMPREHENSIVE PLAN LAND USE DESIGNATION	
UGA URBAN GROWTH AREA	FR RESIDENTIAL FARMLAND
	PU PUBLIC USE
	GR GENERAL RESIDENTIAL
	C COMMERCIAL
	LI LIGHT INDUSTRIAL

LEGEND	
	ZONING BOUNDARY
	AIRPORT TRAFFIC PATTERN (TYP.)
	RUNWAY PROTECTION ZONE
	APPROACH SURFACE
	AIRPORT PROPERTY LINE (EXISTING)
	AIRPORT PROPERTY LINE (FUTURE)
	40:1 TERPS SURFACE
	LEXINGTON CITY LIMITS BOUNDARY
	URBAN GROWTH BOUNDARY

NOTE:
1. MORROW COUNTY PROTECTS AIRPORT AIRSPACE THROUGH ITS AIRPORT SAFETY AND COMPATIBILITY OVERLAY ZONE (SECTION 3.090).



"THE PREPARATION OF THIS DOCUMENT MAY HAVE BEEN SUPPORTED, IN PART, THROUGH THE AIRPORT IMPROVEMENT PROGRAM FINANCIAL ASSISTANCE FROM THE FEDERAL AVIATION ADMINISTRATION (PROJECT NUMBER 3-41-0007-020-10) AS PROVIDED UNDER TITLE 49, UNITED STATES CODE, SECTION 47104. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY 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 THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS."



Chapter 10 – Planning for Compliance & Solid Waste Recycling Plan





Chapter 10 – Planning for Compliance & Solid Waste Recycling Plan



FAA Compliance Summary

Introduction

This section of the chapter discusses the elements associated with the operation and management of Lexington Airport, as a federally-obligated airport. The Federal Aviation Administration (FAA) encourages airport sponsors to establish and implement programs that promote sound operating practices and ongoing compliance with regulatory requirements. The FAA currently recommends that compliance be addressed during the airport planning process through the review of airport documents, plans, and other records, such as an approved ALP, Exhibit "A" Property Map, Airport Ordinance, Zoning Ordinance, Rules and Regulations, Minimum Standards, airport budgets, leases, easements, permits, and other documents.

Morrow County Compliance

Morrow County maintains a high degree of control over the operation of Lexington Airport. The County meets all applicable financial reporting and record keeping requirements and employs a variety of “best practices” including periodic review of market rates and fees; land appraisals, formal procurement and contracting practices, coordination with adjacent land owners (aviation easements), local government (land use planning, zoning), state government (environmental agencies, etc.), and tribal government. Lexington Airport currently has one “Through-the-Fence” (TTF) aviation development that consists of a



commercial hangar and residence owned by the local aerial applicator. Morrow County does not have a TTF agreement in place and is currently working with the FAA Seattle Airports District Office (ADO) to bring this issue into compliance with FAA standards. A section on FAA TTF Compliance is provided later in this chapter. There are no other known compliance issues associated with airport development, tenant leases, airport land uses, or other items.

FAA Compliance Overview

A management program based on the FAA's "Planning for Compliance" guidance and the adoption of airport management "Best Practices" is recommended to address FAA compliance requirements and avoid noncompliance, which could have significant consequences.

Airport management "Best Practices" are developed to provide timely information and guidance related to good management practices and safe airport operations for airport managers and sponsors. The practices outlined herein are designed for use by Morrow County for evaluating and improving their current and future operation and management program.

Airport sponsors must comply with various federal obligations through agreements and/or property conveyances. These are outlined in [FAA Order 5190.6B, Airport Compliance Manual](#). The contractual federal obligations that a sponsor accepts when receiving federal grant funds or transfer of federal property can be found in a variety of documents including:

- Grant agreements issued under the Federal Airport Act of 1946, the Airport and Airway Development Act of 1970, and the Airport Improvement Act of 1982. Included in these agreements is the requirement for airport sponsors to comply with:
 - Grant Assurances;
 - Advisory Circulars ;
 - Application commitments;
 - FAR procedures and submittals;
 - Special conditions;
- Surplus airport property instruments of transfer;
- Deeds of conveyance;
- Commitments in environmental documents prepared in accordance with FAA requirements; and
- Separate written requirements between a sponsor and the FAA.

Land use compliance and compatible land use planning is often a significant compliance issue for airports. Compliance and suggested best practices are discussed under the following subheadings in this chapter:

- Airport Compliance with Federal and State Grant Assurances;
- Environmental Compliance;
- Airport User Compliance; and
- Other Airport Operational Policies and Procedures.



Airport Compliance with Grant Assurances

As a recipient of both federal and state airport improvement grant funds, Morrow County is contractually bound to various sponsor obligations referred to as "Grant Assurances", that have been put together by the FAA and the Oregon State Department of Aviation (ODA). These obligations, presented in detail in federal and state grants and state statute and administrative code, document the commitments made by the airport sponsor to fulfill the intent of the grantor (FAA and ODA) required in association with acceptance necessary of federal and/or state funding for airport improvements. Failure to comply with the grant assurances may result in a finding of noncompliance and/or forfeiture of future funding. Grant assurances and their associated requirements are to protect the significant investment made by the FAA, state and the county, to preserve and maintain the nation's airports as a valuable national transportation asset, as mandated by Congress.

FAA GRANT ASSURANCES

The FAA's Airport Compliance Program defines the interpretation, administration, and oversight of federal sponsor obligations contained in grant assurances. Currently **FAA Order 5190.6B**, Airport Compliance Manual, defines policies and procedures for the Airport Compliance Program. Although it is not regulatory or controlling with regard to airport sponsor conduct, it establishes the policies and procedures for FAA personnel to follow in carrying out the FAA's responsibilities for ensuring compliance by the sponsor.

FAA Order 5190.6B states: the FAA Airport Compliance Program is "...designed to monitor and enforce obligations agreed to by airport sponsors in exchange for valuable benefits and rights granted by the United States in return for substantial direct grants of funds and for conveyances of federal property for airport purposes. The Airport Compliance Program is designed to protect the public interest in civil aviation. Grants and property conveyances are made in exchange for binding commitments (federal obligations) designed to ensure that the public interest in civil aviation will be served. The FAA bears the important responsibility of seeing that these commitments are met. This Order addresses the types of commitments, how they apply to airports and what FAA personnel are required to do to enforce them."

To better understand the intent of the FAA Compliance Program, it is important to understand the FAA's goals for a national airport system. The national airport system is currently known as the National Plan of Integrated Airport Systems (NPIAS), which has historic origins dating back to the 1946 Federal Airports Act. The airport system has evolved through several legislative updates in concert with changes in the organization and scope of the Federal Aviation Administration (FAA). The NPIAS was adopted as part of the Airport and Airway Development Act of 1982, replacing the National Airspace System Plan (NASP), created by earlier legislation. There are approximately 2,500 general aviation airports and 800 commercial service airports in the NPIAS.



According to the FAA, cooperation between the FAA, state, and local agencies should result in an airport system with the following attributes:

- Airports should be safe and efficient, located at optimum sites, and be developed and maintained to appropriate standards;
- Airports should be operated efficiently both for aeronautical users and the government, relying primarily on user fees and placing minimal burden on the general revenues of the local, state, and federal governments;
- Airports should be flexible and expandable, able to meet increased demand and accommodate new aircraft types;
- Airports should be permanent, with assurance that they will remain open for aeronautical use over the long term;
- Airports should be compatible with surrounding communities, maintaining a balance between the needs of aviation and the requirements of residents in neighboring areas;
- Airports should be developed in concert with improvements to the air traffic control system;
- The airport system should support national objectives for defense, emergency readiness, and postal delivery;
- The airport system should be extensive, providing as many people as possible with convenient access to air transportation, typically not more than 20 miles of travel to the nearest NPIAS airport; and
- The airport system should help air transportation contribute to a productive national economy and international competitiveness.

FAA AIP grant assurances are summarized and categorized for applicability in **Table 10-1**. While Sponsors should understand and comply with all grant assurances, there are several assurances that are common and cause recurring issues for airport sponsors throughout the country. These are summarized in more detail below. A complete description of current AIP grant assurances is provided in **Appendix D**. It is important to note that the assurances (and corresponding numbers) are applied to Non-Airport Sponsors Undertaking Noise Compatibility Program Projects and Planning Agency Sponsors. These can also be found in the Airport Improvement Program under Grant Assurances.



TABLE 10-1: SUMMARY OF FAA AIP GRANT ASSURANCES (AIRPORT SPONSOR ASSURANCES 3/2014)

GRANT ASSURANCE NO.	GENERAL AIRPORT	PROJECT PLANNING / DESIGN & CONTRACTING	AIRPORT OPERATIONS AND LAND USE	DAY TO DAY AIRPORT MANAGEMENT	PROJECT CONSTRUCTION	LEASES & FINANCIAL	OTHER
1. General Federal Requirements							
2. Responsibility and Authority of the Sponsor							
3. Sponsor Fund Availability							
4. Good Title							
5. Preserving Rights and Powers							
6. Consistency with Local Plans							
7. Consideration of Local Interest							
8. Consultation with Users							
9. Public Hearings							
10. Metropolitan Planning Organization							
11. Pavement Preventative Maintenance							
12. Terminal Development Prerequisites							
13. Accounting System, Audit, and Record Keeping Requirements							
14. Minimum Wage Rates							
15. Veteran's Preference							
16. Conformity to Plans and Specifications							
17. Construction Inspection and Approval							



GRANT ASSURANCE NO.	GENERAL AIRPORT	PROJECT PLANNING / DESIGN & CONTRACTING	AIRPORT OPERATIONS AND LAND USE	DAY TO DAY AIRPORT MANAGEMENT	PROJECT CONSTRUCTION	LEASES & FINANCIAL	OTHER
18. Planning Projects							
19. Operations and Maintenance							
20. Hazard Removal and Mitigation							
21. Compatible Land Use							
22. Economic Nondiscrimination							
23. Exclusive Rights							
24. Fee and Rental Structure							
25. Airport Revenues							
26. Reports and Inspections							
27. Use by Government Aircraft							
28. Land for Federal Facilities							
29. Airport Layout Plans							
30. Civil Rights							
31. Disposal of Land							
32. Engineering and Design Services							
33. Foreign Market Restrictions							
34. Policies, Standards and Specifications							
35. Relocation and Real Property Acquisition							
36. Access by Intercity Bus							
37. Disadvantaged Business Enterprises							
38. Hangar Construction							
39. Competitive Access							



As the airport sponsor, Morrow County is responsible for the direct control and operation of Lexington Airport. Familiarity with proper monitoring and implementation of sponsor obligations and FAA grant assurances, in particular, are the keys to maintaining compliance. **FAA Order 5190.6B** and ongoing communication with the FAA Northwest Mountain Region Compliance Office are both excellent resources for the County when addressing policy and compliance.

DURATION

The terms, conditions and assurance of a grant agreement with the FAA remain in effect for the useful life of a development project, which is typically 20 years from the receipt of the last grant. However, terms, conditions, and assurances associated with land purchased with federal funds do not expire.

The airport sponsor should have a clear understanding of and comply with all assurances. The following sections describe were excerpted (without revision) from published FAA guidance to the selected assurances in more detail.

Project Planning/Design and Contracting

Sponsor Fund Availability (Assurance # 3)

Once a grant is given to an airport sponsor, the receiving sponsor commits to providing the funding to cover their portion of the total project cost. Currently, this amount is ten percent of the total eligible project cost; although, it may be higher depending on the particular project components or makeup. Once the project has been completed, the receiving airport also commits to having adequate funds to maintain and operate the airport in the appropriate manner to protect the investment in accordance with the terms of the assurances attached to and made a part of the grant agreement.

Consistency with Local Plans (Assurance #6)

All projects must be consistent with city and county comprehensive plans, transportation plans, zoning ordinances development code, and hazard mitigation plans. The airport sponsor and planners should all familiarize themselves with local planning documents before a project is considered and ensure that all projects follow local plans and ordinances.

In addition to understanding local plans, airport sponsors should be proactive in order to prevent noncompliance with this assurance. The airport sponsor should assist in the development of local plans that incorporate the airport and consider its unique aviation related needs. Sponsor efforts should include the development of goals, policies, and implementation strategies to protect the airport as part of local plans and ordinances.



Accounting System Audit and Record Keeping (Assurance# 13)

All project accounts and records must be made available at any time. Records should include documentation of cost, how monies were actually spent, funds paid by other sources and any other financial record associated with the project at hand. Any books, records, documents, or papers that pertain to the project should be available at all times for an audit or examination.

General Airport

Good Title (Assurance #4)

The airport owner must have a Good Title of affected property when considering projects associated with land, building, or equipment. Good Title means the sponsor can show complete ownership of the property without any legal questions, or show it will soon be acquired.

Preserving Rights and Powers (Assurance #5)

No actions are allowed which might take away any rights or powers from the sponsor which are necessary for the sponsor to perform or fulfill any condition set forth by the assurance included as part of the grant agreement. If there is an action taken or activity permitted that might hinder any of those rights or powers, it should be discontinued. An example of an action which can adversely affect the rights and powers of the airport is a Through-the-Fence (TTF) activity. TTF activities allow access to airport facilities from off-airport users. In many instances, the airport sponsor cannot control the activities of those operating off the airport resulting in less sponsor control. This loss of control can potentially have an adverse impact to airport users. For example, TTF activities many times do not pay the same rates and charges as on-airport users, resulting in an unfair competitive advantage for businesses/users located off-airport versus those on-airport.

Airport Layout Plan (ALP) (Assurance #29)

The airport should at all times keep an up-to-date ALP which should include on it both current and future boundaries, facilities/structures, and the location of any non-aviation areas and existing improvements. No changes should be made at the airport to hinder the safety of operations; also, no changes should be made to the airport that is not in conformity with the ALP. Any changes of this nature could adversely affect the safety, utility, or efficiency of the airport. If any changes are made to the airport without authorization, the alteration must be changed back to their original condition, or the airport will have to bear all cost associated with moving or changing the alteration to an acceptable design or location. Additionally, no federal participation will occur for improvement projects not shown on an approved ALP.



Disposal of Land (Assurance #31)

Land purchased with the financial participation of an FAA Grant cannot be sold or disposed of by the airport sponsor at their sole discretion. Disposal of such lands are subject to FAA approval and a definitive process established by the FAA. If airport land is no longer considered necessary for airport purposes, and the sale is authorized by the FAA, the land must be sold at fair market value. Proceeds from the sale of the land must either be repaid to the FAA or reinvested in to another eligible airport improvement or noise compatibility project. Land disposal requirements typically arise when a community is building a new airport and the land on which the airport was located is sold with the proceeds used to offset costs of the new airport. In general, land purchased with FAA funds is rarely sold by a sponsor.

Airport Operations and Land Use

Pavement Preventative Maintenance (Assurance #11)

Since January 1995, the FAA has mandated that it will only give a grant for airport pavement replacement or reconstruction projects if an effective airport pavement maintenance-management program is in place. The program should identify the maintenance of all pavements funded with federal financial assistance. The report provides a pavement condition index (PCI) rating (0 to 100) for various section of aprons, runways, taxiways, and a score for overall airport pavements.

Operations and Maintenance (Assurance #19)

All federally funded airport facilities must operate at all times in a safe and serviceable manner. The airport sponsor should not allow for any activities which inhibit or prevent this. The airport sponsor must always promptly mark and light any hazards on the airport, and promptly issue Notices to Airmen (NOTAMs) to advise of any conditions which could affect safe aeronautical use. Exceptions to this assurance include when temporary weather conditions make it unreasonable to maintain the airport. Further, this assurance does not require the airport sponsor to repair conditions which have happened because of a situation beyond the control of the sponsor.

Compatible Land Use (Assurance #21)

Land uses around an airport should be planned and implemented in a manner which ensures surrounding development and activities are compatible with the airport. To ensure compatibility, the sponsor is expected to take appropriate action, to the extent reasonable, including the adoption of zoning laws to guide land use in the vicinity of airports under their jurisdiction. Incompatible land use around airports represents one of the greatest threats to the future viability of airports.



Day to Day Airport Management

Economic Non-Discrimination (Assurance #22)

Any reasonable aeronautical activity offering service to the public should be permitted to operate at the airport as long as the activity complies with airport-established standards for that activity. Any contractor agreement made with the airport will have provisions making certain the person, firm, or corporation will not be discriminatory when it comes to services rendered as well as rates or prices charged to customers. Provisions include:

- All Fixed Base Operators (FBOs) on the airport should be subject to the same rate fees, rentals, and other charges;
- All persons, firms, or corporations operating aircraft can work on their own aircraft with their own employees;
- If the airport sponsor at any time exercises the rights and privileges of this assurance, they will be under all of the same conditions as any other airport user would be; and
- The sponsor can establish fair conditions which need to be met by all airport users to make the airport safer and more efficient.

The sponsor can prohibit any type, kind, or class of aeronautical activity if it is for the safety of the airport. An example of an activity which may be considered for prohibition is sky diving. It is important to point out that the FAA will review such prohibitions and will make the final determination as to whether or not a particular activity type is deemed unsafe at the airport based on current operational dynamics.

Exclusive Rights (Assurance #23)

Exclusive Rights at an airport is often a complicated subject usually specific to individual airport situations. The assurance states the sponsor “will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public...” There are exceptions to this rule. If the airport sponsor can prove that permitting a similar business would be unreasonably costly, impractical, or result in a safety concern, the sponsor may consider granting an exclusive right. To deny a business opportunity because of safety, the sponsor must demonstrate how that particular business will compromise safety at the airport. Exclusive rights are very often found in airport relationships with FBOs, but exclusive rights can also be established with any other business at the airport which could assist in the operation of an aircraft at the airport. If an unapproved exclusive rights agreement exists, it must be dissolved before a future federal grant is awarded to the airport.

If a sponsor is contemplating denial of a business use at the airport, it is strongly encouraged that they contact their FAA Airport District Office (ADO) in order to ensure that they have all necessary information and that denial of access is not going to be seen as unjust discrimination. For more in depth



information on exclusive rights reference Advisory Circular 150/5190-6, "Exclusive Rights at Federally Obligated Airports."

Leases and Financial

Fee and Rental Structure (Assurance #24)

Simply put, the fee and rental structure at the airport must be implemented with the goal of generating enough revenue from airport-related fees and rents to become self-sufficient in funding day to day operational needs. The airport sponsor should routinely monitor its fee and rental structure to ensure reasonable fees are being charged to meet this goal. Common fees charged by airports include fuel flowage, tie-down, landing fees, and hangar rent.

Airport Revenue (Assurance #25)

All airport revenue and local taxes on aviation fuel should be used toward the operating costs of the airport, the local airport system, or other local facilities which are owned by the same owner of the airport which will directly impact air transportation passengers or property or for noise mitigation on or off airport property. In other words, revenue generated by airport activities must be used to support the continued operation and maintenance of the airport. Use of airport revenue to support or subsidize other non-aviation activities or functions of the sponsor is not allowed and is considered revenue diversion. Revenue diversion is a significant compliance issue subject to cause scrutiny by the FAA.

Other FAA Compliance Requirements

OTHER FEDERAL CONTRACTING AND PROCUREMENT DOCUMENTS

When an airport sponsor accepts an FAA Airport Improvement Program (AIP) grant, they agree to adhere to all applicable federal contracting and procurement requirements. Advisory circulars are required for use in AIP funded projects. Included in each grant request is a federal funding checklist that identifies the requirements an airport should consider before accepting the grant. The following items are noted in the checklist:

- ALPs should be up to date;
- Exhibit "A" Property Map may need to be updated if acquiring additional property;
- Land inventory may need to be updated if you have recently acquired land with federal assistance;
- Airports must hold good title to the airport landing area;
- Appropriate signage and markings must be in place;
- RPZ and approach surface deficiencies must be identified and steps to address deficiencies must be noted;
- RSAs must meet FAA standards if planning a runway project;



- DBE program goals must be met on projects more than \$250,000;
- Procedures should be in place to handle bid protests;
- Open AIP grant projects need to be identified;
- Project closeout form must be submitted within 90 days of work completion ;
- A “Certification of Economic Justification” must be included for routine pavement maintenance projects;
- A “Revenue Generating Facility Eligibility Evaluation” must be completed for hangar constructing or fueling facilities;
- A “Reimbursable Agreement” and “Non-Fed Coordination” must be completed for navigational aid projects; and
- A “Relocation Plan” must be completed if a project requires residences or businesses to be relocated.

SPECIAL CONDITIONS

In addition to the standard grant assurances discussed above, the state or the FAA may require “Special Conditions” to individual grants which supplement or expand the standard grant assurances. Special Conditions are unique to an individual airport and can be project or administrative in nature. Airport sponsors need to be aware of such conditions that may be applied to their airport.

MULTIJURISDICTIONAL CHALLENGES

In some instances, airports are jointly owned and operated by more than one airport sponsor. In other instances, airports may be located within multiple jurisdictions. While the official airport sponsor is ultimately responsible for adherence with the grant assurance, the actions, or inactions, of surrounding jurisdictions can and do impact the airport sponsor’s ability in meeting its sponsor obligations. This is particularly true with land use compatibility issues around airports. As a result, it is important in either circumstance that all jurisdictions affected by the airport understand the operational needs and complexities of having an airport within its jurisdiction. Mutual agreements addressing airport operational or land use protection needs, or other cooperative measures, are recommended by all jurisdictions to both protect the functionality of the airport as well as the safety and well-being of airport users and neighbors.

FAA THROUGH-THE-FENCE (TTF)

Lexington Airport has one active Through-the-Fence (TTF) user. The TTF activity is located on a single land parcel adjacent to the southeast section (terminal area) of the airport. The off-airport aviation facilities include one conventional hangar that supports a commercial aerial applicator and a private taxiway that connects to the main apron. Two aircraft currently utilize the TTF access point on the airport. The parcel also includes a private residence. Vehicle access to the hangar and residence is



provided by a private driveway that connects to Airport Road, on airport property. The parcel has no other surface access connections to public roads.

Although the aviation function for this activity is commercial, the FAA classifies the use as “residential” since it is located on a parcel that includes a residence and is otherwise zoned for residential use. Although the hangar and residence are now used concurrently, the potential exists that future use could be disconnected. Whether the uses continue to be combined or are separated in the future, the residence and hangar each rely on dedicated access via the airport.

Morrow County does not have an FAA-approved TTF agreement in place for this use. The County is currently working with the FAA’s Seattle Airports District Office (ADO) to develop an agreement that meets all FAA requirements.

TTF access is discouraged by the FAA due to concerns over land use compatibility, security, safety, and economic inequity (economic discrimination) between on- and off-airport users. Economic discrimination is “*an unjust economic advantage or disadvantage for one airport user versus another by charging one more or less than another, and therefore creating an advantage or disadvantage.*” However, when TTF use exists or is proposed, the FAA requires airport sponsors to develop access plans and establish agreements consistent with FAA grant assurances. To maintain economic parity within the agreements, TTF users are typically required to compensate the airport owner for the access in a way that is comparable to an equivalent on-airport user.

FAA Through-the-Fence Policies

“On March 14, 2011, the FAA amended Grant Assurance 5, Preserving Rights and Powers, to prohibit new residential through-the-fence access arrangements and published an interim policy to address existing residential through-the-fence access. The interim policy required all AIP grant-eligible airport sponsors to certify their status. Those sponsors with existing access agreements were directed to depict their residential through-the-fence access points on their Airport Layout Plan (ALP) and develop access plans to address¹:

- General Authority for Control of Airport Land and Access;
- Safety of Airport Operations;
- Recovery of Costs of Operating the Airport;
- Protection of Airport Airspace; and
- Compatible Land Uses Around the Airport.”

¹ FAA Compliance Guidance Letter 2013-01-FAA Review of Existing and Proposed Residential Through-the-Fence Access Agreements (July 16, 2013)



“On February 14, 2012, the FAA Modernization and Reform Act of 2012 was signed into law (P.L. 112-95), Section 136 of this law states:

...a sponsor of a general aviation airport shall not be considered to be in violation of this subtitle, or to be in violation of a grant assurance made under this section or under any other provisions of law as a condition for the receipt of Federal financial assistance for airport development, solely because the sponsor enters into an agreement that grants to a person that owns residential real property adjacent to or near the airport access to the airfield of the airport for the following:

- (A) Aircraft of person
- (B) Aircraft authorized by the person

In addition, this law outlines specific conditions and limitations that must be in the access agreement. Beginning on October 1, 2014, an airport sponsor with an existing residential through-the-fence access agreement will be required to demonstrate evidence of compliance with this law. Specifically, these airport sponsors are required to update their Airport Layout Plans to depict points of residential through-the-fence access and provide a copy or copies of their access agreements to demonstrate the sponsor’s compliance with the law.”

Solid Waste Recycling Plan

Introduction

This section of the chapter discusses the solid waste generation at the airport and what recycling options are utilized. The layout of this section is outlined below:

- Waste Audit;
- Recycling Feasibility;
- Plan to Minimize Solid Waste Generation;
- Operational and Maintenance Requirements;
- Waste Management Contracts;
- Potential for Cost Savings or Revenue Generation; and
- Future Development and Recommendations.

Waste Audit

Overall, minimal waste is generated at the airport due to its small size. Morrow County Waste Disposal is responsible for waste in the pilot’s lounge; however, each tenant is responsible for waste in the seven hangars. Approximately one 32-gallon trash can of waste is removed from the pilot’s lounge every other week. A soda machine is provided in the pilot’s lounge, and an aluminum recycle container is available.



The waste from the pilot’s lounge is generated from deplaned waste and daily operation of the pilot’s lounge (pers. comm. Putman 2014).

WASTE DISPOSAL

The Public Work General Maintenance Supervisor disposes of the waste generated at the pilot’s lounge at the south-end transfer station in Lexington. No State or Federal requirements apply to the waste generated. The transfer station is located less than one half-mile south of the airport, and it is assumed all hangar-generated waste by tenants would be disposed of at that location. The transfer station accepts aluminum, glass bottles, scrap metal, newspaper, tin cans, tires, yard debris, and large household appliances free of charge to Morrow County residents (Morrow County no date).

MAINTENANCE WASTE

Another source of waste is maintenance activities (yard debris). The busiest month for waste is most likely April or May when there are ample lawn clippings that are disposed, and more pilots are flying due to improved weather conditions. The infield lawn is not watered, however, so only clippings during the late spring and early summer months are collected. Once the grass becomes dry, it is clipped and left in the infield area. No annual events are held at the airport, resulting in no unique, short-term spikes in waste generated at the airport (pers. comm. Putman 2014).

CONSTRUCTION WASTE

Construction waste is the responsibility of the Contractor for each specific project. The previous taxiway and apron project and runway rehabilitation project resulted in the removal of asphalt concrete at the airport. The Contractor would have the option to recycle the asphalt to be used in future recycled asphalt pavement projects or use for other construction activities.

Projects listed on the 5-year CIP are listed in **Table 10-2** and summarized below.

TABLE 10-2: SUMMARY OF FUTURE PROJECTS

YEAR	PROJECT
2014	Beacon Replacement
2015	- Runway 8/26 & Aircraft Hold Short Areas – Sealcoat, NPI markings, Relocate AC Holdlines and Signs; - Runway End Identifier Lights (REIL) Runway 8/26
2016	Main Apron Environmental/CATEX
2017	Main Apron Reconfiguration/Expansion
2018	No Projects/Carry Over Funds
2019	Parallel Taxiway & Access Taxiways (West & Center) Sealcoat; Restripe; Edge Reflectors



2014

The waste generated from the beacon replacement would be the responsibility of the contractor and could be taken to either the south-end transfer station or the Finley Buttes Landfill.

2015

The only waste that would result from any of the projects in 2015 would be trash generated by construction workers. The Runway End Identifier Light (REIL) installation is new construction, and the seal coating and painting would not involve demolition of pavement.

2016

No demolition or construction waste would result from this project because no work would be performed at the airport.

2017

Demolition and construction waste would result from removed asphalt pavement and any clearing/grubbing associated with the apron reconfiguration. The waste produced would have to be removed at the contractor's expense.

2018

No demolition or construction waste is anticipated in 2018 because no projects are currently planned.

2019

Demolition and construction waste would result from removed asphalt pavement and any clearing/grubbing associated with the parallel taxiway and access taxiway. The waste produced would have to be removed at the contractor's expense.

Recycling Feasibility

Currently, aluminum cans are the only recycled material at the airport. Because such a minimal amount of waste is generated at the airport, it is not effective to offer other recycling options. However, the south-end transfer station less than one half-mile from the airport accepts other recyclable items as well. **Table 10-3** lists common waste items and where they can be recycled.

**TABLE 10-3: RECYCLABLE OPTIONS**

MATERIAL	RECYCLE LOCATION
Aluminum	Airport & South-End Transfer Station
Glass Bottles	South-End Transfer Station
Scrap Metal	South-End Transfer Station
Newspaper	South-End Transfer Station
Tin Cans	South-End Transfer Station
Tires	South-End Transfer Station
Yard Debris	South-End Transfer Station
Large Household Appliances	South-End Transfer Station

CURRENT PRACTICES

According to **OAR 340-090-4000**, cities with a population greater than 4,000 must have some sort of recycling option. Lexington's population (238 in 2013) is well below this threshold. Morrow County does not have a policy requiring departments to buy reusable, recyclable, or repairable products and supplies (SWMP 2005).

The Public Works Department that serves the airport does not have hauling or landfill contracts to dispose of waste. The Public Work General Maintenance Supervisor disposes of waste from the pilot's lounge at the airport. Due to the minimal generation of waste, only aluminum recycling is available at the airport (a soda machine is located in the pilot's lounge). Hangar tenants are responsible for waste in each hangar and have the benefit of being able to recycle waste very close to the airport at the south-end transfer station less than one half-mile south of the field. Additionally, hangar tenants must use satisfactory and legal disposal methods to dispose of waste generated and must haul solid waste covered and secured (Solid Waste Ordinance no date). Morrow County has a sparsely distributed rural population, and the distance to major recycling facilities reduces the effectiveness of recycling. The current practice of providing recycling containers in local communities and using the two transfer stations appears to be effective for the County, and there have not been additional efforts by any cities or the County to encourage and promote recycling (SWMP 2005).



Plan to Minimize Solid Waste Generation

The County can take efforts to reduce solid waste generation and earn “credits” toward recovery rates mandated by the state of Oregon. House Bill 3456 created three programs that a watershed—in this case, Morrow County—can choose to implement:

- Waste Prevention Program;
- Reuse Program; and
- Residential Composting Program.

For each program, a two percent “credit” can be obtained by creating an education or promotional campaign and adhering to at least two components listed by the Oregon Department of Environmental Quality (ODEQ). Up to six percent can be deducted from the County’s material recovery and waste generation rate if the County decides to participate in all three programs (ODEQ no date). Morrow County is required to maintain a 20 percent recovery rate. However, the County has no policy to eliminate wasteful practices or require departments to buy reusable, recyclable, or repairable products and supplies (SWMP 2005).

METHODS TO REDUCE SOLID WASTE

Because little waste is produced at the airport, there are very limited opportunities to reduce solid waste generation. However, the airport should still have a goal to reduce the amount of solid waste generated. This goal could be achieved by providing additional recycling options at the pilot’s lounge (glass, paper, etc.). Even though the airport is not responsible for waste generated by hangar tenants, informational brochures on recycling opportunities developed by the County could be distributed to all of the hangar tenants to encourage them to recycle their waste. To track the amount of waste generated after implementing new policies, the Public Work General Maintenance Supervisor could make a note of the amount of waste generated each time waste is removed from the pilot’s lounge (bi-weekly).

WINDMILL REMOVAL

The airport received the Connect Oregon V grant to remove an old windmill near the airport. Instead of demolishing the windmill that is likely more than 70 years old, the airport plans to recycle the structure by donating it to a museum for historical value (pers. comm. Putman 2014).

PHYSICAL CONSTRAINTS

Morrow County has a mainly rural population, and the distance to major recycling facilities is too great to make recycling effective for citizens and businesses. The current practices of providing recycling containers in cities and utilizing the two transfer stations are currently the most effective for the County, and there have not been any efforts by any cities or the County to encourage and promote recycling (SWMP 2005).



Operational and Maintenance Requirements

Operational and maintenance requirements at the airport are minimal. Lawn clippings are only collected during the late spring and early summer months when the grass is still green and thick. The infield lawn is not watered; subsequently, when the grass dries out in the summer, it is mowed, and the clippings are left in the infield area. The Morrow County Public Works Department is responsible for the costs associated with mowing the grass.

To help reduce the amount of lawn clipping waste generated in the late spring and early summer months, the airport could leave grass clippings onsite instead of bagging and disposing of them. Grass clippings actually return to the lawn approximately 25% of the total lawn's fertilizer needs and create a healthy turf environment (Starbuck 1999). Furthermore, the Morrow County Solid Waste Management Plan recommends the promotion of a program that encourages "leaving grass clippings generated by lawn mowing on-site rather than bagging the clippings for disposal or composting."

Waste Management Contracts

Janitorial and hangar leases provided by the County are shown in **Appendix E** and were reviewed for information regarding waste and recycling. No hauling or landfill contracts exist.

The hangar lease dictates that tenants "shall maintain the grounds and premises in and around the rental area in a reasonably neat, clean, and orderly condition." Although tenants are responsible for their own waste from the hangar, no mention for the opportunity for recycling is included in the lease. Proceeds from rent are used for general airport maintenance and cleaning services. The janitorial services contract dictates that a contractor will perform cleaning and maintenance services at the airport once a week. The janitorial services contract does not include any stipulation for recycling.

To promote additional recycling opportunities, language could be added to the hangar lease that encourages the tenant to utilize the south-transfer recycling center less than one half-mile from the Airport and to be conscientious of any waste generated in the hangar.

Potential for Cost Savings or Revenue Generation

Potential cost savings could occur with the lawn clippings. The Public Work General Maintenance Supervisor collects waste from the pilot's lounge bi-weekly. During the late spring and early summer months, lawn clippings are collected and disposed of as well. A disposal fee is required when depositing waste at the south-end transfer station. Subsequently, if the lawn clippings were left in the infield area and not collected, this would reduce the quantity of waste taken to the transfer station, and the disposal fee would decrease.



Revenue generation is most likely limited due to the small amount of waste generated. Because the airport does not sell any items contained in glass bottles, it would be ineffective to begin collecting glass recyclables because the only glass deposited would be from deplaned glass bottles. The airport already collects aluminum cans in the pilot's lounge. So, no additional revenue from aluminum can collection is possible.

Future Development and Recommendations

FUTURE DEVELOPMENT

Future development projects at the airport include hangar construction, tenant improvements, landside and airside facility development, and rehabilitation projects. The demolition and waste associated with each of these projects would be the responsibility of the contractor performing the work. It is assumed that the demolition waste would be taken to the Finley Buttes Landfill.

A periodic review of the airport's solid waste plan needs to be implemented to allow for future developments at the airport. For example, if glass recycling would become available and feasible for the airport, then the airport would need to reevaluate that option based on current practices.

RECOMMENDATIONS

Immediate

An immediate recommendation would be to not bag and remove lawn clippings, regardless of time of year. By not bagging lawn clippings, the airport will save money on disposal fees at the transfer station while preserving the aesthetics of the infield area.

Short-Term

A short-term recommendation would be to add a statement into hangar leases advising tenants of the recycling options available at the south-end transfer station less than one half-mile south of the airport and to encourage tenants to recycle and minimize waste. Additionally, informational brochures on recycling opportunities developed by the County could be distributed to all of the hangar tenants to encourage them to recycle their waste.

Ongoing

An ongoing recommendation would be to reevaluate the airport's solid waste plan, especially after development has occurred at the airport. An increase in hangars may increase the amount of waste generated in the pilot's lounge, and glass recycling—among other items—may become warranted.



Modifications to Specifications

Language in construction contract documents could be added that encourages the contractor to recycle waste at the nearby south-end transfer station and to minimize waste caused by construction activities as much as practical.

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Appendix A



APP CRS	Rwy Idg	4156
082°	TDZE	1618
	Apt Elev	1634

RNAV (GPS) RWY 8

LEXINGTON (9S9)

NA When local altimeter setting not received, use Hermiston altimeter setting and increase all MDA 220 feet, increase Circling Cats A/B ¼ mile, LNAV and Circling Cat C ½ mile, and Circling Cat D ¾ mile. Procedure NA at night. DME/DME RNP- 0.3 NA. Helicopter visibility reduction below 1 SM NA.

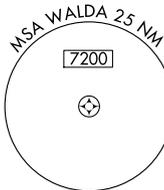
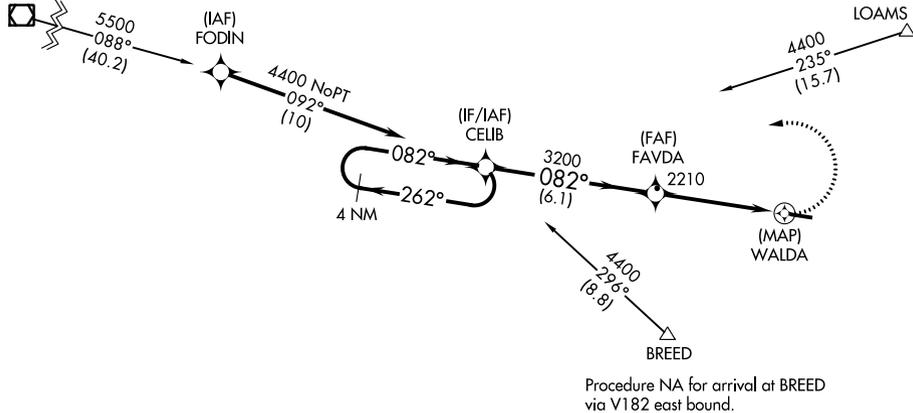
MISSED APPROACH: Climbing left turn to 4400 direct CELIB and hold.

AWOS-3 134.475	SEATTLE CENTER 132.6 269.35	CTAF 122.9
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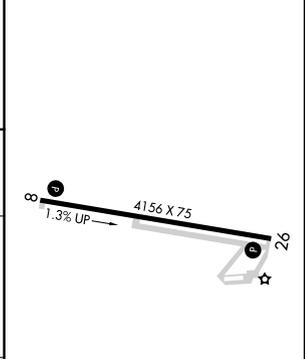
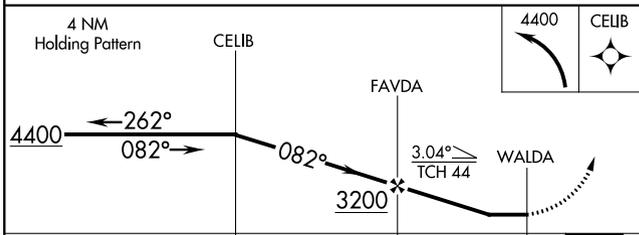
Procedure NA for arrival on LTJ VOR/DME airway radials 032 CW 116.

CLICKITAT
LTJ

Procedure NA for arrival at LOAMS via V112 northeast bound.



ELEV 1634	TDZE 1618
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CATEGORY	A	B	C	D
LNAV MDA	2120-1	502 (500-1)	2120-1½	502 (500-1½)
CIRCLING	2380-1 746 (800-1)	2460-1¼ 826 (900-1¼)	2480-2½ 846 (900-2½)	2520-3 886 (900-3)

MIRL Rwy 8-26

NW-1, 12 DEC 2013 to 09 JAN 2014

NW-1, 12 DEC 2013 to 09 JAN 2014

APP CRS	Rwy Idg	N/A
210°	TDZE	N/A
	Apt Elev	1634

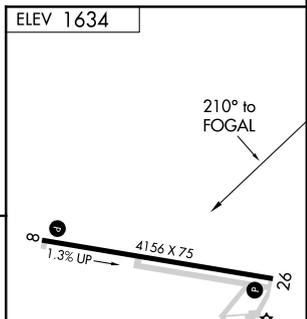
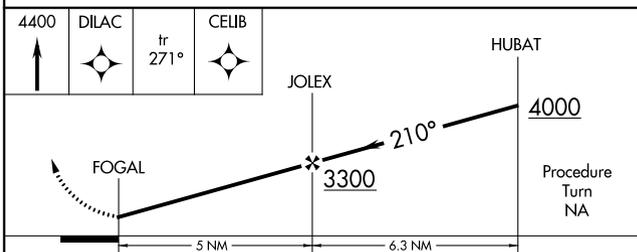
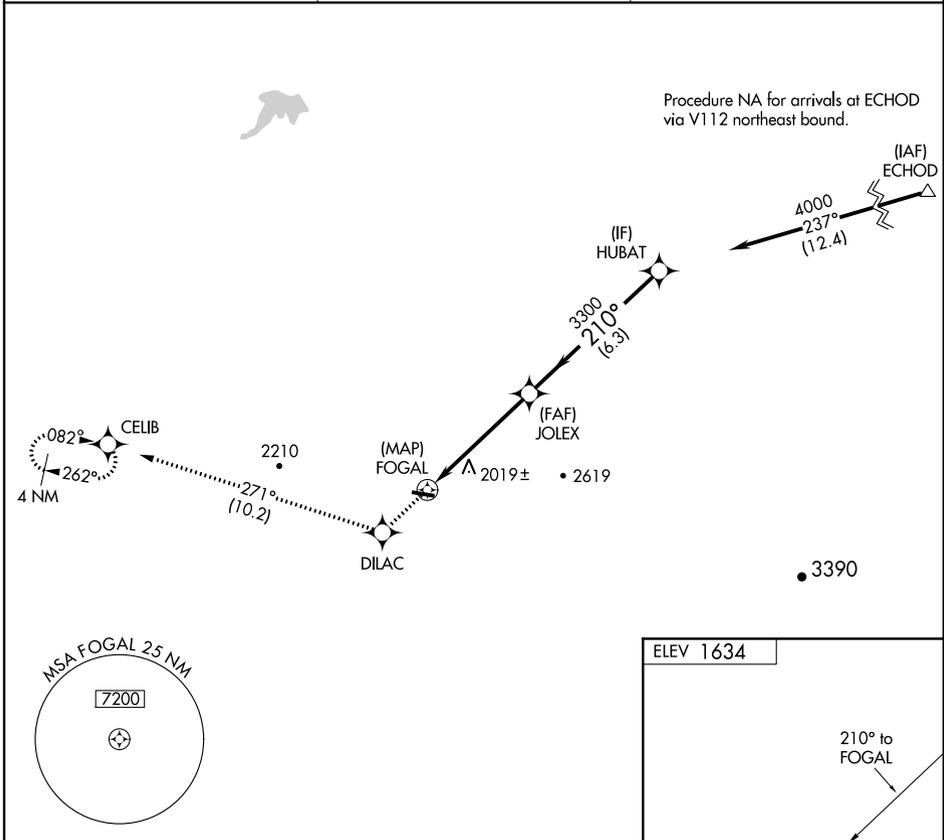
RNAV (GPS)-A

LEXINGTON (9S9)

⚠ When local altimeter setting not received, use Hermiston altimeter setting and increase all MDA 220 feet, increase Cats A/B visibility ¼ mile, and Cat C visibility ½ mile. Procedure NA at night. DME/DME RNP-0.3 NA. Helicopter visibility reduction below 1 SM NA.

⚠ NA MISSED APPROACH: Climb to 4400 direct DILAC and via 271° track to CELIB and hold.

AWOS-3 134.475	SEATTLE CENTER 132.6 269.35	CTAF 122.9
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CATEGORY	A	B	C	D
CIRCLING	2380-1 746 (800-1)	2460-1¼ 826 (900-1¼)	2480-2½ 846 (900-2½)	2520-3 886 (900-3)

MIRL Rwy 8-26

NW-1, 12 DEC 2013 to 09 JAN 2014

NW-1, 12 DEC 2013 to 09 JAN 2014



TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES



13346

LAKEVIEW, OR

LAKE COUNTY (LKV)
AMDT 3 13234 (FAA)

TAKEOFF MINIMUMS: **Rwy 17**, std. w/min. climb of 210' per NM to 6900, or 2600-3 for climb in visual conditions.
Rwy 35, std. w/min. climb of 270' per NM to 7600, or 2600-3 for climb in visual conditions.

DEPARTURE PROCEDURE: **Rwy 17**, climbing right turn heading 310° to intercept LKV VORTAC R-158 to LKV VORTAC. Do not exceed 240 KIAS until established on the LKV VORTAC R-158, or for climb in visual conditions, cross Lake County airport at or above 7200, then proceed on LKV VORTAC R-147 to LKV VORTAC. When executing VCOA, notify ATC prior to departure, thence....

Rwy 35, climb heading 351° to intercept LKV VORTAC R-130 to LKV VORTAC, or for climb in visual conditions, cross Lake County airport at or above 7200, then proceed on LKV VORTAC R-147 to LKV VORTAC. When executing VCOA, notify ATC prior to departure, thence....
... Continue climb in holding pattern (hold NW, right turns, 148° inbound) to cross LKV VORTAC at or above 9700.

NOTE: **Rwy 17**, runway end identifier lights beginning 35' from DER, left and right of centerline, up to 2' AGL/4726' MSL.

LARAMIE, WY

LARAMIE RGNL (LAR)
AMDT 2 12096 (FAA)

DEPARTURE PROCEDURE: **Rwys 3, 12,21,30**, use LARAMIE DEPARTURE.

LAUREL, MT

LAUREL MUNI (6S8)
AMDT 3 13346 (FAA)

TAKEOFF MINIMUMS: **Rwys 9, 14, 27, 32**, NA.

DEPARTURE PROCEDURE: **Rwy 4**, climbing left turn direct BIL VORTAC, thence... **Rwy 22**, climbing left turn direct BIL VORTAC, thence...

...if required, continue climb in BIL VORTAC holding pattern (hold W, right turns, 072° inbound) to cross BIL VORTAC at or above MEA/MCA for route of flight.

NOTE: **Rwy 4**, ground beginning 47' from DER, 397' left of centerline, up to 3480' MSL. Multiple trees beginning 309' from DER, 260' right of centerline, up to 68' AGL/3522' MSL. Fence beginning 64' from DER, 281' left of centerline, up to 15' AGL/3469' MSL. **Rwy 22**, ground beginning 34' from DER, 264' right of centerline, up to 3498' MSL.

LEWISTON, ID

LEWISTON-NEZ PERCE COUNTY (LWS)
AMDT 3A 10182 (FAA)

DEPARTURE PROCEDURE: **Rwys 8,12, 26, 30**, turn left direct MQG VOR/DME. Continue climb in holding pattern (W, left turns, 066° inbound) to cross MQG VOR/DME at or above 3600.

LEWISTOWN, MT

LEWISTOWN MUNI (LWT)
AMDT 3A 11041 (FAA)

TAKEOFF MINIMUMS: **Rwy 3**, 1800-2 or std. with a min. climb of 280' per NM to 6900. **Rwys 8,13**, 900-2 or std. with a min. climb of 220' per NM to 6200.

DEPARTURE PROCEDURE: **Rwys 3,31** turn left. **Rwys 8,13,21**, turn right. **Rwy 26**, climb runway heading. All aircraft climb direct LWT VORTAC. Continue climb in holding pattern (W, right turns, 094° inbound) to MEA for route of flight.

13346

LEXINGTON, OR

LEXINGTON (9S9)
ORIG 05020 (FAA)

TAKEOFF MINIMUMS: **Rwy 26**, std. with min. climb of 280' per NM to 7600, or 1600-2 ½ for climb in visual conditions. **Rwy 8**, std. with min. climb of 490' per NM to 4200, or 1600-2 ½ for climb in visual conditions.

DEPARTURE PROCEDURE: **Rwys 8, 26**, for climb in visual conditions: cross Lexington Airport at or above 3600.

NOTES: **Rwy 8**, trees 1.42 NM from DER, 2386' left of centerline, 100' AGL/2159' MSL. Trees 1.48 NM from DER, 2755' left of centerline, 100' AGL/2179' MSL.

LIBBY, MT

LIBBY (S59)

AMDT 1 00223 (FAA)

TAKEOFF MINIMUMS: **Rwy 33**, not authorized. **Rwy 15**, use EYESE RNAV DEPARTURE.

LIVINGSTON, MT

MISSION FIELD (LVM)
AMDT 3 09071 (FAA)

TAKEOFF MINIMUMS: **Rwys 8, 13, 26, 31**, NA-Environmental.

DEPARTURE PROCEDURE: **Rwys 4, 22**, Use LIVINGSTON DEPARTURE.

MADRAS, OR

MADRAS MUNI (S33)
AMDT 1 10154 (FAA)

TAKEOFF MINIMUMS: **Rwys 16, 22**, std. with a min. climb of 298' per NM to 3900 or 1300-3 for climb in visual conditions

DEPARTURE PROCEDURE: **Rwys 4, 34**, climbing left turn heading 210° to intercept DSD R-348 to DSD VORTAC, thence... **Rwy 16**, climbing right turn heading 210° to intercept DSD R-348 to DSD VORTAC, thence... , or for climb in visual conditions: cross Madras Muni airport at or above 3600 MSL, then proceed on DSD R-356 to DSD VORTAC, thence...

Rwy 22, climb heading 216° to intercept DSD R-348 to DSD VORTAC, thence... , or for climb in visual conditions: cross Madras Muni airport at or above 3600 MSL, then proceed on DSD R-356 to DSD VORTAC, thence...

...continue climb-in-hold (hold North, right turns, 168° inbound) to MEA/MCA for route of flight.

NOTES: **Rwy 4**, vehicle on road beginning 7' from DER, 268' left of centerline, up to 15' AGL/2444' MSL. Airplane on tarmac 60' from DER, 252' right of centerline, 40' AGL/2469' MSL. Bush 383' from DER, 483' right of centerline, 19' AGL/2439' MSL. Vehicle on road 742' from DER, 112' right of centerline, up to 15' AGL/2447' MSL. **Rwy 16**, bushes beginning 196' from DER, 151' left of centerline, up to 14' AGL/2444' MSL. Airplane on tarmac 1357' from DER, 280' right of centerline 40' AGL/2479' MSL. **Rwy 34**, bushes beginning 92' from DER, 116' right of centerline, up to 17' AGL/2437' MSL. Airplane on tarmac 1396' from DER, 375' left of centerline, 40' AGL/2469' MSL.



Appendix B



memorandum

to W. Matt Rogers, P.E.
from Susan Cunningham
date June 12, 2015
subject Lexington Airport

Morrow County owns and operates the Lexington Airport (Airport). The Airport is designated as a “Community General Aviation” airport, accommodating small aircraft from Lexington and the surrounding communities. The County is currently in the process of updating the Master Plan for the Airport. The preferred development alternative that shows projects that occur over the 20 year planning process is attached.

The Airport is located in unincorporated Morrow County, Oregon, approximately one-half mile north of the Lexington city limits, at the intersection of Highway 207 (Lexington-Echo Highway) and Highway 74. Airport access is west off of Highway 207 onto Airport Road. The Airport is in Section 27, Township 1 South, Range 25 East, Willamette Meridian. The existing Airport property covers approximately 110 acres. Much of the airport property has been altered over the years from historic ranching, agriculture, industry, and the use of the site as an airfield. Land surrounding the Airport is used primarily for agriculture.

This technical memorandum documents the fish, wildlife, plant and wetland resources that could occur in the study area for the project. Species evaluated in this memorandum are those listed as endangered or threatened, proposed for listing, or candidate for listing under the Endangered Species Act (16 US 1531, et seq.), as amended, that could occur in Morrow County.

The study area for this project is defined as the area on the airport that would be directly affected by the proposed project. The study area is not limited to the actual work site of the project area. The terrestrial study area is generally considered to extend approximately one-half mile from the area of potential impacts. This distance represents the most commonly recognized limit of concern for disturbance to terrestrial species for typical construction activities.

Wetlands, Water Resources, and Floodplains

Wetlands are under the jurisdiction of both Oregon Department of State Lands (DSL) and the US Army Corps of Engineers (Corps). Both agencies use the *Corps of Engineers Wetland Delineation Manual* (Experimental Laboratory 1987) and the *Arid West Wetland Delineation Supplement Manual* (Corps of Engineers 2008) for determining what a wetland is and the extent of a wetland. An area is determined to be a wetland if it has a dominance of hydrophytic vegetation (plants that grow in wet conditions), hydric soils, and positive wetland hydrology.

W. Matt Rogers, P.E.
June 12, 2015
Page 2

A Local wetland inventory (LWI) for the project area was unavailable from the Oregon Department of State Lands (DSL) website, so the US Fish and Wildlife Service's (USFWS) National Wetlands Inventory website was used to look for mapped wetlands and waters in the vicinity. The Airport is within 400 feet of an unnamed tributary of Willow Creek which drains into the Columbia River at River Mile 252.5. The tributary is shown on the NWI as R4SBA.

The Soil Survey for Morrow County was reviewed to determine the types of soils that occur on the site. The majority of the airport is on Mikkalo silt loam soils survey. A small portion of the south end is on Licksillet very stony loam soils series. Both of these soil series are non-hydric.

State and Federal Sensitive, Threatened and Endangered Species

Species lists were obtained from the U.S. Fish and Wildlife Service (USFWS) website (website revised October 1, 2014). Species listed under ESA addressed in this Memorandum are displayed in **Table 1**. The Oregon Biodiversity Information Center (ORBIC) database was also queried to obtain records of known sensitive, threatened and endangered plant and animal species within a 2 mile radius of the airport (ORBIC 2014). There are no documented records of species listed as endangered or threatened, proposed for listing, or candidate for listing as occurring within a two-mile radius of the project. There is no designated Critical Habitat for any species within the study area.

There are no documented ESA-listed species within Willow Creek or its tributaries. This creek is also not documented as either Critical Habitat or Essential Salmon Habitat. The Airport is located a sufficient distance from the stream to avoid any direct impacts to the stream or associated riparian habitat.

National Wetland Inventory Code

- R** System **RIVERINE**: The Riverine System includes all wetlands and deepwater habitats contained in natural or artificial channels periodically or continuously containing flowing water or which forms a connecting link between the two bodies of standing water. Upland islands or Palustrine wetlands may occur in the channel, but they are not part of the Riverine System.
- 4** Subsystem **INTERMITTENT**: This Subsystem includes channels that contain flowing water only part of the year, but may contain isolated pools when the flow stops.
- SB** Class **STREAMBED**: Includes all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide.
- A** **WATER REGIME** Temporary Flooded: Surface water is present for brief periods during growing season, but the water table usually lies well below the soil surface for most of the growing season. Plants that grow both in uplands and wetlands may be characteristic of this water regime.

Table 1. ESA Species Listed by the USFWS Lists That Could Potential Occur in Morrow County, Oregon

Species Common Name (<i>Scientific Name</i>)	Federal Endangered Species Act Status	Actual Occurrence in Action Area
Greater sage-grouse (<i>Centrocercus urophasianus</i>) Columbia Basin DPS	Candidate	None. No potential habitat
Washington ground squirrel (<i>Urocitellus washingtoni</i>)	Candidate	None. No potential habitat

Greater sage-grouse are found in areas dominated by big sagebrush. Recently, a landscape approach to sage-grouse habitat protection has been developed across the Western states. This landscape approach is commonly referred to as *Core Areas*. Specifically, this approach prioritizes habitats based on measures that assess breeding bird density of sage-grouse populations and associated habitats. Oregon Department of Fish and Wildlife’s Core Area approach is consistent with range-wide efforts to map important population strongholds by the Western Association of Fish and Wildlife Agencies. The airport site and surrounding areas are not within a Core Area or Low Density area. There is no suitable habitat for greater sage-grouse on the airport property.

The **Washington ground squirrel** is endemic to the Deschutes-Columbia Plateau Province south of the Columbia River and east of the John Day River. In Oregon, the squirrel occurs in lower elevation (generally up to 800 feet) native grasslands and shrub-steppe, south of the Columbia River, east of the John Day River, and west of Pendleton, with the majority of the known population occurring within Threemile Canyon Farms area in northern Morrow County (outside the project area). There is a Multi-Species Candidate Conservation Agreement with Assurances (MSCCAA) in place for the Threemile Canyon Farms area. The MSCCAA provides conservation measures for the Washington ground squirrel.

The Washington ground squirrel is associated with shrub-steppe and grassland habitats. Greene (1999) found the highest densities of the species in sagebrush (*Artemisia tridentata* sp.) and lower densities in bunchgrass habitats. The squirrel is more abundant in areas with high vegetation cover on deep, weaker soils with less clay and high silt (Betts 1990, Greene 1999). The squirrel is found primarily in areas where the soils are undisturbed. Greene (1999) found that Washington ground squirrels were located more often in sites underlain with the Warden soil type, a soil with a high silt content and characterized as being very deep. It is generally thought that squirrels prefer Warden soils because of the relative ease of digging and maintaining burrow systems rather than in other loam soils with high clay content or high sand content (Greene 1999). There is not suitable habitat for the Washington ground squirrel on the airport property.

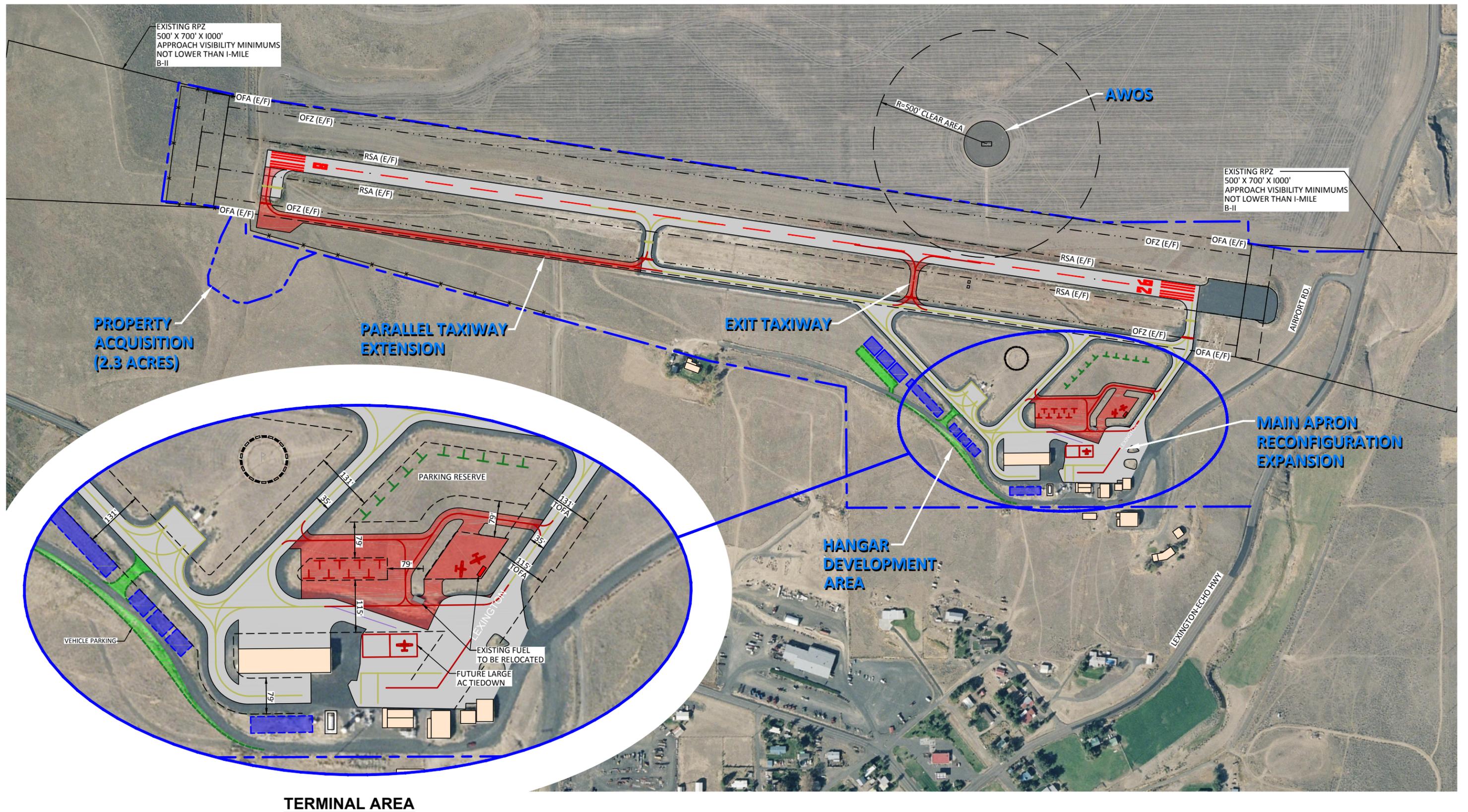
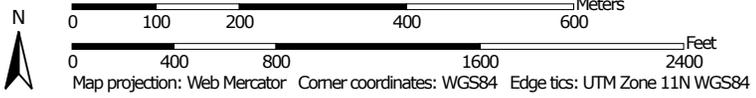


FIGURE 5-4 LEXINGTON AIRPORT PREFERRED DEVELOPMENT ALTERNATIVE

Soil Map—Morrow County, Oregon
(Lexington Airport)



Map Scale: 1:8,990 if printed on A landscape (11" x 8.5") sheet.



Soil Map—Morrow County, Oregon
(Lexington Airport)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morrow County, Oregon
Survey Area Data: Version 9, Dec 4, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2010—Aug 21, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Morrow County, Oregon (OR049)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28E	Lickskillet very stony loam, 7 to 40 percent slopes	64.5	36.8%
30B	Mikkalo silt loam, 2 to 7 percent slopes	108.7	62.0%
30C	Mikkalo silt loam, 7 to 12 percent slopes	2.0	1.1%
Totals for Area of Interest		175.2	100.0%



U.S. Fish and Wildlife Service National Wetlands Inventory

Lexington Airport NWI

Oct 1, 2014



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Appendix C



SECTION 3.010. EXCLUSIVE FARM USE, EFU ZONE. In an EFU Zone, the following regulations shall apply:

A. **PURPOSE:** The purpose of the Exclusive Farm Use Zone is to preserve and maintain agricultural lands for farm use consistent with historical, existing, and future needs, including economic needs that pertain to the production of agricultural products, and to permit the establishment of only those uses that are compatible with agricultural activities.

Uses, buildings, or structures hereafter erected, structurally altered, enlarged, or moved and land hereafter used in the Exclusive Farm Use Zone shall comply with the following regulations.

B. DEFINITIONS

1. **Agricultural Land:** as defined in OAR 660-33-020 and Article 1 of this Ordinance.
2. **Farm Use:** as defined in ORS 215.203 and in Article 1 of this Ordinance.
3. **High Value Farmland:** as defined in ORS 215.710. (For information about soil classification, refer also to the "Soil Survey of Morrow County, Oregon.")
4. **Date of Creation and Existence:** When a lot, parcel, or tract is reconfigured pursuant to applicable law after November 4, 1993, the effect of which is to qualify a lot, parcel, or tract for the siting of a dwelling, the date of the reconfiguration is the date of creation or existence. Reconfigured means any change in the boundary of the lot, parcel, or tract.
5. **Tract:** One or more contiguous lots or parcels under the same ownership, including lots or parcels divided by a County or Public Road, or contiguous at a common point. Lots divided by a State Highway are not considered contiguous.
6. **Golf Course:** An area of land with highly maintained natural turf laid out for the game of golf with a series of 9 or more holes, each including a tee, a fairway, a putting green, and often one or more natural or artificial hazards. A "golf course" for purposes of ORS 215.213(2)(f), 215.283(2)(3) is more clearly defined in OAR 660-033-130(20).
7. **Irrigated:** Land watered by an artificial or controlled means, such as sprinklers, furrows, ditches, or spreader dikes. An area or tract is "irrigated" if it is currently watered, or has established rights to use water for irrigation, or receives water for irrigation from a water or irrigation district or other provider.
8. **Farm Stand:** A use or structure designed and used for sale of farm crops and livestock grown on farms in the local agricultural area, including the sale of retail incidental items, if the sales of the incidental items make up no more than 25 percent of the total sales of the farm stand; and the farm stand does not include structures designed for occupancy as a residence or for activities other than the

sale of farm crops and livestock and does not include structures for banquets, public gatherings, or public entertainment.

9. Owner: For purposes of a Lot of Record Dwelling, "Owner" includes the wife, husband, son, daughter, mother, father, brother, brother-in-law, sister, sister-in-law, son-in-law, daughter-in-law, mother-in-law, father-in-law, aunt, uncle, nephew, niece, stepparent, stepchild, grandparent, or grandchild of the owner or a business entity owned by any one or a combination of these family members.

C. USES PERMITTED OUTRIGHT. In an EFU Zone the following uses and accessory uses thereof are permitted outright:

1. Farm use as defined by ORS 215.203 and Article 1 of this ordinance, except a use specified in subsection (2) of this section.
2. Propagation or harvesting of a forest product.
3. Buildings other than dwellings customarily provided in conjunction with farm use.
4. One single family dwelling subject to Section (E) below and Section 4.110, customarily provided in conjunction with farm use.
5. A single family dwelling for an agricultural operator's help (accessory farm dwelling) subject to Section (E) below.
6. A replacement dwelling may be sited on any part of the same lot or parcel, subject to siting standards in this ordinance. However, the standards shall not be applied in a manner that prohibits the siting of the dwelling. If the dwelling to be replaced is located on a portion of the lot or parcel not zoned EFU, the applicant, as a condition of approval, shall execute and record a deed with the County Clerk, a deed restriction prohibiting the siting of a dwelling on that portion of the lot or parcel. The restriction imposed shall be irrevocable unless a statement of release is placed in the deed records for the county. The release shall be signed by the Planning Director and state that the provisions of this section regarding replacement dwellings have changed to allow the siting of another dwelling. The Planning Director shall maintain a record of the lots and parcels that do not qualify for the siting of a new dwelling under the provisions of this section, including a copy of the deed restrictions and release statements filed under this section.
7. Creation, restoration and enhancement of wetlands.
8. Creation, restoration and enhancement of wildlife habitat.
9. Climbing and passing lanes within a highway right-of-way existing as of July 1, 1987.

10. Reconstruction or modification of public roads and highways not including additional travel lanes, where no removal or displacement of structures would occur and not resulting in any new land parcels. (MC-C-8-98)
11. Temporary public road and highway detours that will be abandoned and restored to original condition or use at such time as no longer needed. (MC-C-8-98)
12. Minor betterment of existing public roads and highway facilities, such as maintenance yards, weight stations and rest areas, within right-of-ways existing as of July 1, 1987, and contiguous public-owned property utilized to support the operation and maintenance of public roads and highways. (MC-C-8-98)
13. Alteration, restoration or replacement of a lawfully established dwelling that meets all the following criteria:
 - a. Has intact interior walls and roof structure;
 - b. Has indoor plumbing consisting of a kitchen sink, toilet, and bathing facilities connected to a sanitary waste disposal system;
 - c. Has interior wiring or interior lights;
 - d. Has a heating system; and
 - e. In the case of replacement, is removed, demolished or converted to a permitted non-residential use within 90 days of completion of the replacement dwelling.
14. Restoration or replacement of the lawful use of any building, structure or land may be permitted when the restoration is made necessary by fire, other casualty or natural disaster, and shall meet the following:
 - a. Restoration or replacement shall be commenced within one year from the occurrence of the fire, casualty or natural disaster.
 - b. Any use interrupted or abandoned by casualty or natural disaster for more than (12) months may not be resumed unless the resumed use conforms with the requirements of zoning ordinances or regulations applicable at the time of the proposed resumption.
15. A replacement dwelling to be used in conjunction with farm use if the existing dwelling has been listed in an inventory of historic property and is listed on the National Register of Historic Places.
16. Utility and transmission towers not exceeding 200 feet in height.
17. Public or private schools, including all buildings essential to the operation of a school, except that no such use may be authorized within three miles of an urban growth boundary, unless an exception is approved pursuant to ORS 197.732 and

OAR 660, Division 4, and further that no such use may be authorized on high value farmland.

18. Churches and cemeteries in conjunction with churches except that no such use may be authorized within three miles of an urban growth boundary, unless an exception is approved pursuant to ORS 197.732 and OAR 660 Division 4, and further that no such use may be authorized on high value farmland.

19. A site for the disposal of solid waste approved by a city or county governing body and for which a permit has been granted by the Department of Environmental Quality under ORS 459.245, including the equipment, facilities, and building necessary for its operation, except that such uses are prohibited on high value farmland.

20. Operations for the exploration for minerals as defined by ORS 517.750. Any activities or construction relating to such operations shall not be a basis for an exception under ORS 197.732(1)(a) or (b).

21. Operations for the exploration of geothermal resources as defined by ORS 522.005, and oil and gas as defined by ORS 520.005 including the placement and operation of compressors, separators and other customary production equipment for an individual well adjacent to the wellhead. (Processing of said resources is a conditional use.)

22. Seasonal farm worker housing provided for seasonal farm workers as defined in ORS 197.675 and to be occupied for no more than nine months not to exceed 273 days within any calendar year. The housing shall also meet the requirements of ORS 197.685.

23. A winery as described in ORS 215.452.

24. Subdivisions and Series Partitions for the purpose of establishing "non-farm dwellings" pursuant to ORS 92.010 - 92.190, and 92.305-92.495 are prohibited in the Exclusive Farm Use Zone.

25. Onsite filming and activities accessory to onsite filming for 45 days or less as provided for in ORS 215.306.

26. A site for the takeoff and landing of model aircraft, including such buildings or facilities as may reasonably be necessary, subject to restrictions of OAR 660-033-130(26).

27. Mining less than 1,000 cubic yards of aggregate material or excavation of less than one acre of land annually. (MC OR-1-2013)

28. Excavations conducted by the landowner or tenant on the landowner or tenant's property for the purpose of operations reasonably necessary for construction, reconstruction or maintenance of access roads on the same parcel or on an adjacent parcel that is under the same ownership as the parcel being excavated reasonably necessary for farming. (MC OR-1-2013)

D. CONDITIONAL USES PERMITTED. In an EFU Zone, the following uses and their accessory uses are permitted subject to demonstration of compliance with the requirements of Article 6 of this ordinance and Section (G) below:

1. Single-family residential dwellings including mobile homes subject to Section 4.110 of this ordinance not provided in conjunction with farm use, subject to approval pursuant to the limitations set forth by section (F) below.

2. One single family dwelling on a tract of record, meeting the following qualifications:

a. The lot or parcel on which the dwelling will be sited was lawfully created and owned continuously by the present owner as defined in the definitions section:

(1) Since prior to January 1, 1985; or

(2) By devise or intestate succession from a person who acquired and had owned continuously the lot or parcel since prior to January 1, 1985.

b. The tract upon which the dwelling is to be sited does not include another dwelling.

c. The lot or parcel on which the dwelling will be sited was part of a tract on November 4, 1993, no dwelling exists on another lot or parcel that was part of that tract;

d. The lot or parcel upon which the dwelling is to be sited is not on high value farmland as defined in the definitions section.

e. If the tract on which the dwelling is to be sited consists of more than one lot or parcel, all lots and parcels within the tract shall be consolidated into a single lot or parcel.

f. The director or the director's designee shall notify the county assessor of any decision to permit a dwelling under this section.

g. Land use approval for a single family dwelling meeting requirements of this section may be transferred one time to any other person, prior to issuance of a building permit.

h. When the lot or parcel on which the dwelling will be sited lies within an area designated in an acknowledged comprehensive plan as habitat of big game, the siting of the dwelling is consistent with the limitations on density upon which the acknowledged comprehensive plan and land use regulations intended to protect the habitat are based.

i. Notwithstanding the requirements of paragraph d, a single-family dwelling may be sited on high-value farmland if:

- (1) It meets the other requirements of this section.
- (2) The lot or parcel is protected as high-value farmland as defined in OAR 660-33-020(8)(a); and
- (3) The Planning Commission determines that:
 - (a) The lot or parcel cannot practicably be managed for farm use, by itself or in conjunction with other land, due to extraordinary circumstances inherent in the land or its physical setting that do not apply generally to other land in the vicinity. For the purposes of this section, the criterion asks whether the subject lot or parcel can be physically put to farm use without undue hardship or difficulty because of extraordinary circumstances inherent in the land or its physical setting. Neither size alone nor a parcel's limited economic potential demonstrate that a lot or parcel cannot be practicably managed for farm use.

3. Accessory (secondary) farm dwellings, including mobile homes subject to Section 4.110, customarily provided in conjunction with farm use and meeting the following minimum requirements:

a. It meets all the following requirements:

- (1) The accessory farm dwelling will be occupied by a person or persons who will be principally engaged in the farm use of the land and whose assistance in the management of the farm use is or will be required by the farm operator; and
- (2) The accessory dwelling will be located:
 - (a) On the same lot or parcel as the dwelling of the principal farm dwelling; or
 - (b) On the same tract as the principal farm dwelling when the lot or parcel on which the accessory dwelling will be sited is consolidated into a single parcel with all other contiguous lots and parcels in the tract; or
 - (c) On a lot or parcel on which the principal farm dwelling is located, when the accessory farm dwelling is a manufactured dwelling and a deed restriction is filed with the county clerk. The deed restriction shall require the manufactured dwelling to be removed when the lot or parcel is conveyed to another party. An accessory farm dwelling approved pursuant to this rule may not be occupied by a person or persons who will not be principally engaged in the farm use of the land and whose assistance in the management of the farm use is not or will not be required by the farm operator. The manufactured dwelling may remain if it is reapproved under these rules.

(3) There is no other dwelling on the lands designated for exclusive farm use owned by the farm operator that is vacant or currently occupied by persons not working on the subject farm or ranch and that could reasonably be used as an accessory farm dwelling.

b. In addition to the requirements in subsection a, above, the principal farm dwelling to which the proposed dwelling would be accessory, meets one of the following:

(1) On land not identified as high-value farmland, the principal farm dwelling is located on a farm or ranch operation that is currently employed for farm use, as defined in ORS 215.203, and produced in the last two years or three of the last five years the lower of the following:

(a) At least \$40,000 (1994 dollars) in gross annual income from the sale of farm products. In determining the gross income, the cost of purchased livestock shall be deducted from the total gross income attributed to the tract.

(b) Gross annual income of at least the midpoint of the median income range of gross annual sales for farms in the county with the gross annual sales of \$10,000 or more according to the 1992 Census of Agriculture, Oregon. In determining the gross income, the cost of purchased livestock shall be deducted from the total gross income attributed to the tract; or

(2) On land identified as high-value farmland, the principal farm dwelling is located on a farm or ranch operation that is currently employed for farm use, as defined in ORS 215.203, and produced at least \$80,000 (1994 dollars) in gross annual income from the sale of farm products in the last two years or three of the last five years. In determining the gross income, the cost of purchased livestock shall be deducted from the total gross income attributed to the tract.

c. The county shall not approve any proposed division of a lot or parcel for an accessory farm dwelling approved pursuant to this section. If it is determined that an accessory farm dwelling satisfies the requirements of Section (E), a parcel may be created consistent with the minimum parcel size requirements in Section (H).

d. An accessory farm dwelling approved pursuant to this section cannot later be used to satisfy the requirements for a dwelling not provided in conjunction with farm use pursuant to Section (F).

e. As a condition of approval, the landowner for the dwelling shall sign and record in the Morrow County deed records a document binding the landowner, and the landowner's successors in interest, prohibiting them from pursuing a claim for relief or cause of action alleging injury from farming or

forest practices for which no action or claim is allowed under ORS 30.936 or 30.937.

4. One manufactured dwelling, or recreational vehicle, or the temporary residential use of an existing building in conjunction with an existing dwelling as a temporary use for the term of a hardship suffered by the existing resident or a relative of the resident. A medical hardship dwelling may be permitted subject to conformance with the following:

a. A manufactured dwelling allowed under this provision is a temporary use for the term of hardship suffered by the existing resident or relative.

b. The manufactured dwelling shall use the same subsurface sewage disposal system used by the existing dwelling, if that disposal system is adequate to accommodate the additional dwelling.

c. When the hardship ends, the manufactured home shall be removed and may not be used to justify a dwelling under any other provision of this ordinance.

d. Hardship means a medical hardship or hardship for the care of an aged or infirm person or persons.

e. The Planning Commission or Planning Director shall review the permit authorizing such manufactured home every two years.

f. Within three months of the end of the hardship, the manufactured dwelling or recreational vehicle shall be removed or demolished or, in the case of an existing building, the building shall be removed, demolished or returned to an allowed non-residential use. A temporary residence approved under this section is not eligible for replacement under ORS 215.213(l)(u) or 215.283(l)(t).

5. Residential home as defined in ORS 197.675 in an existing dwelling.

6. Room and board (bed and breakfast) arrangements for a maximum of five unrelated persons in an existing residence.

7. Livestock sales yard, hog or mink farm within one mile of a lot in a residential zone.

8. Commercial activities that are in conjunction with farm uses but not including the processing of farm crops pursuant to ORS 215.213(l)(x) and 215.283(l)(u).

9. Propagation, cultivation, maintenance, and harvesting of aquatic or insect species. An application for insect species shall also be subject to OAR 660-033-0130(27).

10. Operations conducted for the exploration, mining and processing of geothermal resources as defined by ORS 522.005 and oil and gas as defined by ORS 520.005 not otherwise permitted.

11. Operations conducted for the mining, stockpiling, or processing of mineral, aggregate and other mineral resources or other subsurface resources not to exceed 500,000 tons subject to Article 6 of this Ordinance and provisions within the Morrow County Comprehensive Plan which requires a significance determination. (MC OR-1-2013)

12. Private parks, playgrounds, hunting and fishing preserves and campgrounds except that such uses as are prohibited on high value farmland. Except on a lot or parcel contiguous to a lake or reservoir, private campgrounds shall not be allowed within three miles of an urban growth boundary unless an exception is approved pursuant to ORS 197.732 and OAR Chapter 660 Division 4. A campground shall meet the definition and criteria established in OAR 660-033-130(19).

13. Parks, playgrounds or community centers owned by a governmental agency or non-profit community organization.

14. Golf Courses except that such uses are prohibited on high value farmland.

15. Commercial utility facilities for the purposes of generating power for public use by sale. A power generation facility shall not preclude more than 12 acres of high value farmland or 20 acres of other land from commercial farm use unless an exception is approved pursuant to OAR 660 Division 4.

16. Utility facilities "necessary" for public service, excluding commercial utility facilities for the purpose of generating power for public use by sale, and transmission towers over 200 feet in height. A utility facility is necessary for public service if the facility must be sited in an exclusive farm use zone in order to provide the service. To demonstrate that a utility facility is necessary, an applicant must show that reasonable alternatives have been considered and that the facility must be sited in an exclusive farm use zone due to one or more of the factors listed in OAR 660-033-0130(16).

17. Personal-use airports for airplanes and helicopter pads, including associated hangar, maintenance and service facilities. A personal-use airport as used in this section means an airstrip restricted, except for aircraft emergencies, to use by the owner, and on an infrequent and occasional basis, by his invited guests, and by commercial aviation activities in connection with agricultural operations. No aircraft may be based on a personal-use airport other than those owned or controlled by the owner of the airstrip. Exceptions to the activities permitted under this definition may be granted through waiver action by the Aeronautics Division in specific instances. A personal-use airport lawfully existing as of September 13, 1976 shall continue to be permitted subject to any application regulations of the Aeronautics Division.

18. Home occupation. Home occupations may be permitted in accordance with the following:

On High Value lands:

- a. Home occupations may only be authorized in an existing dwelling and structures accessory to an existing dwelling.
- b. Home occupations may not be authorized in structures accessory to resource use.
- c. A home occupation located on high-value farmland may employ only residents of the home.

On all other EFU lands:

- a. A home occupation shall be operated by a resident or employee of a resident of the property on which the business is located.
- b. A home occupation shall employ on the site no more than five full time or part time persons.
- c. The home occupation shall be operated substantially in the dwelling; or other buildings normally associated with uses permitted in the zone in which the property is located.
- d. The home occupation shall not unreasonably interfere with other uses permitted in the zone in which the property is located.
- e. Construction of a structure that would not otherwise be allowed in the zone is not permitted.

19. A facility for the primary processing of forest products, provided that such facility is found to not seriously interfere with accepted farming practices and is compatible with farm uses described in subsection (2) of ORS 215.203.

20. Dog kennels, except that such uses are prohibited on high value farmland.

21. A site for the disposal of solid waste approved by the governing body of a city or county or both and for which a permit has been granted under ORS 459.245 by the Department of Environmental Quality together with equipment, facilities or buildings necessary for its operation.

22. Construction of additional passing and travel lanes requiring the acquisition of right-of-way, but not resulting in the creation of new land parcels.

23. Reconstruction or modification of public roads and highways involving the removal or displacement of structures but not resulting in the creation of new land parcels.

24. Improvement of public roads and highway related facilities such as maintenance yards, weigh stations, and rest areas, where additional property or right of way is required, but not resulting in the creation of new land parcels.
25. Farm ranch recreation, pursuant to Oregon Law Chapter 728 (1997), in conjunction with a commercial farming or ranching operation subject to Article 6.
26. Onsite filming and activities accessory to onsite filming for more than 45 days as provided for in ORS 215.306.
27. Expansion or relocation of existing county fair and rodeo grounds and activities directly relating to county fairgrounds governed by county fair boards established pursuant to ORS 565.210. (MC-03-05)
28. Operations for the extraction and bottling of water.
29. Composting facilities for which a permit has been granted by the Department of Environmental Quality under ORS 459.245 and OAR 340-96-020.
30. A wildlife habitat conservation and management plan pursuant to ORS 215.804.
31. A facility for the processing of farm crops, subject to OAR 660-033-0130(28).
32. A living history museum as defined in and in accordance with the criteria established in OAR 660-033-0130(21).
33. Utility facility service lines and accessory facilities or structures that end at the point where the utility service is received by the customer and that are located on one or more of the following:
 - a. A public right of way;
 - b. Land immediately adjacent to a public right of way, provided the written consent of all adjacent property owners has been obtained; or
 - c. The property to be served by the utility.
34. An outdoor mass gathering as defined in ORS 433.735 or other gathering of fewer than 3,000 persons that is not anticipated to continue for more than 120 hours in any three month period is not a "land use decision" as defined in ORS 197.015(10) or subject to review under this Section.
35. Any gathering subject to review by the Planning Commission under the provisions of ORS 433.763. These gatherings and any part of which is held in open spaces are those of more than 3,000 persons which continue or can reasonably be expected to continue for more than 120 hours within any three-month period.

E. REQUIREMENTS FOR DWELLINGS CUSTOMARILY PROVIDED IN CONJUNCTION WITH FARM USE

1. High Value Land. On land identified as high value farm land, a dwelling may be considered customarily provided in conjunction with farm use if:

a. The subject tract is currently employed for the farm use that produced at least \$80,000 (1994 dollars) in gross annual income from the sale of farm products in the last two years or three of the last five years.

b. Except as permitted in ORS 215.283(1)(q), there is no other dwelling on the subject tract.

c. The dwelling will be occupied by a person or persons who produced the commodities which grossed the income.

d. In determining the gross income requirement, the cost of purchased livestock shall be deducted from the total gross income attributed to the tract.

2. 160-acre test. On land not identified as high-value farmland, a dwelling may be considered customarily provided in conjunction with farm use if:

a. The parcel on which the dwelling will be located is at least 160 acres.

b. The subject tract is currently employed for farm use, as defined in ORS 215.203.

c. The dwelling will be occupied by an owner or a person or persons who will be principally engaged in the farm use of the land, such as planting, harvesting, marketing or caring for livestock, at a commercial scale. If the owner is not principally engaged in the day to day farm operation, no accessory dwelling for farm help may be authorized.

d. There is no other dwelling on the subject tract.

3. Income Test. On land not identified as high-value farmland, a dwelling may be considered customarily provided in conjunction with farm use if:

a. The subject tract is currently employed for the farm use, as defined in ORS 215.203, that produced in the last two years or three of the last five years gross annual income of at least \$40,000; and

b. There is no other dwelling on the subject tract; and

c. The dwelling will be occupied by a person or persons who produced the commodities which grossed the income in (a) above.

d. In determining the gross income required by the subsection the cost of purchased livestock shall be deducted from the total gross income attributed

to the tract. Only gross income from land owned, not leased or rented, shall be counted.

4. Capability Test. If the county prepares the potential gross sales figures pursuant to OAR 660-33-0135(4), the county may determine that, on land not identified as high value farmland, a dwelling may be considered customarily provided in conjunction with farm use if:

- a. The subject tract is at least as large as the median size of those commercial farm or ranch tracts capable of generating at least \$10,000 in annual gross sales that are located within a study area which includes all tracts wholly or partially within one mile from the perimeter of the subject tract.
- b. The subject tract is capable of producing at least the median level of annual gross sales of county indicator crops as the same commercial farm or ranch tracts used to calculate the tract size in subsection a above.
- c. The subject tract is currently employed for a farm use at a level capable of producing the annual gross sales required in subsection b above.
- d. The subject lot or parcel on which the dwelling is proposed is not less than 10 acres in size.
- e. Except as permitted in ORS 215.283(l)(p), there is no other dwelling on the subject tract.
- f. If no farm use has been established at the time of application, land use approval shall be subject to a condition that no building permit may be issued prior to the establishment of the farm use required by subsection c above.
- g. The dwelling will be occupied by a person or persons who will be principally engaged in the farm use of the land, such as planting, harvesting, marketing or caring for livestock, at a commercial scale.

F. REQUIREMENTS FOR DWELLING NOT PROVIDED IN CONJUNCTION WITH FARM USE. Dwelling not provided in conjunction with farm use may be authorized upon findings that:

1. There is no other dwelling on the parcel.
2. The dwelling or activities associated with the dwelling will not force a significant change in or significantly increase the cost of accepted farming or forest practices on nearby lands devoted to farm or forest use.
3. The dwelling will not materially alter the stability of the overall land use pattern of the area. In determining whether a proposed nonfarm dwelling will alter the stability of the land use pattern of the area, the county shall consider the cumulative impact of possible new nonfarm dwellings and parcels on other lots or parcels in the area similarly situated. To address this standard, the county shall:

a. Identify a study area for the cumulative impacts analysis. The study area shall include at least 2000 acres or a smaller area not less than 1000 acres, if the smaller area is a distinct agricultural area based on topography, soil types, land use pattern, or the type of farm or ranch operations or practices that distinguish it from other, adjacent agricultural areas. Findings shall describe the study area, its boundaries, the location of the subject parcel within this area, why the selected area is representative of the land use pattern surrounding the subject parcel and is adequate to conduct the analysis required by this standard. Lands zoned for rural residential or other urban residential or other urban on nonresource uses shall not be included in the study area.

b. Identify within the study area the broad types of farm use (irrigated or nonirrigated crops, pasture or grazing lands), the number, location and type of existing dwelling (farm, nonfarm, hardship, etc.), and the dwelling development trends since 1993. Determine the potential number of nonfarm/lot-of-record dwellings that could be approved under this section, including identification of predominant soil classifications, the parcels created prior to January 1, 1993 and the parcels larger than the minimum lot size that may be divided to create new parcels for nonfarm dwellings under ORS 215.263(4). The findings shall describe the existing land use pattern of the study area including the distribution and arrangement of existing uses and the land use pattern that could result from approval of the possible nonfarm dwellings under this subparagraph.

c. Determine whether approval of the proposed nonfarm/lot-of-record dwellings together with existing nonfarm dwellings will materially alter the stability of the land use pattern in the area. The stability of the land use pattern will be materially altered if the cumulative effect of existing and potential nonfarm dwellings will make it more difficult for the existing types of farms in the area to continue operation due to diminished opportunities to expand, purchase or lease farmland, acquire water rights or diminish the number of tracts or acreage in farm use in a manner that will destabilize the overall character of the study area.

4. The dwelling is situated upon a lot or parcel, or a portion of a lot or parcel, that is generally unsuitable land for the production of farm crops and livestock, considering the terrain, adverse soil or land conditions, drainage and flooding, vegetation, location and size of the tract. A lot or parcel shall not be considered unsuitable solely because of size or location if it can reasonably be put to farm or forest use in conjunction with other land.

A lot or parcel is not "generally unsuitable" simply because it is too small to be farmed profitably by itself. If a lot or parcel can be sold, leased, rented or otherwise managed as a part of a commercial farm or ranch, it is not "generally unsuitable." A lot or parcel is presumed to be suitable if it is composed predominantly of Class I - VI soils. Just because a lot or parcel is unsuitable for one farm use does not mean it is not suitable for another farm use.

5. If the parcel is under forest assessment, the dwelling shall be situated upon generally unsuitable land for the production of merchantable tree species recognized by the Forest Practices Rules, considering the terrain, adverse soil or land conditions, drainage and flooding, vegetation, location and size of the parcel. If a lot or parcel is under forest assessment, the area is not "generally unsuitable" simply because it is too small to be managed for forest production profitably by itself. If a lot or parcel under forest assessment can be sold, leased, rented or otherwise managed as a part of a forestry operation, it is not "generally unsuitable." If a lot or parcel is under forest assessment, it is presumed suitable if it is composed predominantly of soils capable of producing 20 cubic feet of wood fiber per acre per year. If a lot or parcel is under forest assessment, to be found compatible and not seriously interfere with forest uses on surrounding land it must not force a significant change in forest practices or significantly increase the cost of those practices on the surrounding land.

6. Shall not be located within one mile of a livestock commercial feedlot, livestock sales yard, slaughter house, hog or mink farm, or within one-quarter (1/4) mile of agricultural lands capable of being intensively farmed, unless adequate provisions are provided and approved by the Commission for a buffer between such uses. The establishment of a buffer shall consider such factors as prevailing winds, drainage, expansion potential of affected agricultural uses, open space and any other factor that may affect the livability of such proposed use or the agriculture of the area.

G. Dimensional Standards. In an EFU Zone, the following dimensional standards shall apply:

1. A lot or parcel of 160 acres or more shall be considered a farm unit.
2. A lot or parcel of less than 160 acres may be approved as a farm unit pursuant to the Conditional Use Permit process and when found to comply with the Agricultural Lands policies of the Comprehensive Plan and the provisions of Section 5.120 of the Morrow County Subdivision Ordinance.
3. The minimum average lot width shall be 150 feet with a minimum street frontage of 150 feet, excepting lots within an approved subdivision.
4. The minimum average lot depth shall be 150 feet.
5. Big Game Range Restrictions: In the case of Farm Use areas identified as Big Game Habitat no dwelling will be authorized where the overall density within a square mile exceeds one dwelling per 160 acres. Section 3.200 also applies to the siting of a dwelling on Big Game Habitat.
6. New parcels for nonfarm uses only as authorized by ORS 215.263 may be created. Such new parcels shall be the minimum size needed to accommodate the use in a manner consistent with other provisions of law except as required for the nonfarm dwellings authorized by Section F. The creation of new lots or parcels for dwellings not in conjunction with farm use may be created pursuant to Section F and ORS 215.263(4). The county shall not approve a subdivision or

series partition for a dwelling not provided in conjunction with farm use. The provisions of this subsection regarding a series partition apply only to applications for a land division submitted after July 1, 1997. For purposes of this subsection, "series partition" shall have the meaning given that term in ORS 92.305.

H. Yards. In an EFU Zone, the minimum yard setback requirements shall be as follows:

1. The front yard setback from the property line shall be a minimum of 100 feet if the property line is adjacent to an intensive agricultural use except as approved by the Commission; otherwise, front yards shall be 20 feet for property fronting on a local minor collector or marginal access street ROW, 30 feet from a property line fronting on a major collector ROW, and 80 feet from an arterial ROW unless other provisions for combining accesses are provided and approved by the County.
2. Each side yard shall be a minimum of 20 feet except that on corner lots or parcels the side yard on the street side shall be a minimum of 30 feet, and for parcels or lots with side yards adjacent to an intensive agricultural use the adjacent side yard shall be a minimum of 100 feet, except as approved by the Commission.
3. Rear yards shall be a minimum of 25 feet, except for parcels or lots with rear yards adjacent to an intensive agricultural use rear yards shall be a minimum of 100 feet, except as approved by the Commission.
4. Stream Setback. All sewage disposal installations such as outhouses, septic tank and drainfield systems shall be set back from the high-water line or mark along all streams and lakes a minimum of 100 feet, measured at right angles to the high-water line or mark. All structures, buildings, or similar permanent fixtures shall be set back from the high-water line or mark along all streams or lakes a minimum of 100 feet measured at right angles to the high-water line or mark.

I. Transportation Impacts

1. Traffic Impact Analysis (TIA). In addition to the other standards and conditions set forth in this section, a TIA will be required for all projects generating more than 400 passenger car equivalent trips per day. Heavy vehicles – trucks, recreational vehicles and buses – will be defined as 2.2 passenger car equivalents. A TIA will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts. If the corridor is a State Highway, use ODOT standards. (MC-C-8-98)

SECTION 3.071. AIR/INDUSTRIAL PARK ZONE, AI

SECTION 3.071. PURPOSE. The AI Zone is intended to recognize those areas devoted to or most suitable for the immediate operational facilities necessary for commercial and non-commercial aviation. It is intended to provide areas for those activities directly supporting or dependent upon aircraft or air transportation when such activities, in order to function, require a location within or immediately adjacent to primary flight operations and cargo service facilities.

An airport related use is defined as an activity or use directly servicing the airport, employees working on the airport property or air service patrons. Direct service businesses include such uses as fueling stations, repair facilities, hangars, air charter services, and the like. Employee or patron service businesses include such uses as restaurants, motels and hotels, travel agencies, gift shops, car rental agencies and the like.

An airport dependent use or activity is defined as requiring a location at or adjacent to an airport to be economically viable. Economic viability is measured by determining whether the use or activity would suffer an economic disadvantage if not located at or adjacent to an airport. One method of authorization is to determine an industry to be eligible by evaluating its airport dependence through the percentage of its business done with air-cargo; its dependence on air transportation by staff, management, sales personnel, vendors, or clientele, its site size requirements; and, its interest in locating in a non-metropolitan area of the state.

The August 2002 Boardman Airport - Airport Layout Plan Report will direct location of all development at the Boardman Airport. Location of all development at the Lexington Airport will be directed by the Lexington Airport Layout Plan.

In the AI Zone, the following regulations shall apply:

- A. Uses Permitted Outright. In an AI Zone, the following uses are recognized as airport related and

dependent uses which are permitted outright in the AI Zone:

1. Uses and buildings which are necessary for airport operation, including aircraft hangars, fuel storage facilities, control tower, passenger and air freight terminals, aircraft runways, taxiways and tie-down areas, and other airport operation uses.
2. Retail sales and commercial services for air passengers or airport connected activities.
3. Air cargo warehousing and distribution facilities.
4. Aerial mapping and surveying.
5. Aircraft or aircraft component manufacturing or assembly.
6. Aircraft related research and testing.
7. Aircraft sales, repair, service and storage.
8. Schools relating to aircraft operations.
9. Aircraft or air transportation business.
10. Aviation clubs.
11. Auto rental agencies, restaurants, lounges, food preparation and food service establishments, hotels, motels and traveler service and convenience facilities.
12. Taxi, bus and truck terminals.
13. Environmental monitoring and enforcement agencies.
14. Farm use.

15. Accessory buildings normally required in connection with a use as specified in this paragraph.

16. Fire fighting equipment and facilities.

B. Conditional Uses Permitted. In an AI Zone, the following uses and their accessory uses are permitted when authorized in accordance with the requirements set forth by this section and Article 6 of this ordinance:

1. Other airport related and airport dependent uses similar to those identified as outright uses and meeting the definition under the purpose statement of this section.

C. Dimensional Standards. In an AI Zone, the following dimensional standards shall apply:

1. The minimum lot size shall be determined in accordance with the provisions of this section relative to setback requirements, off-street parking and loading requirements, lot coverage limitations, and as deemed necessary to maintain air, land and water resource quality, to protect adjoining and area land uses, to insure resource carrying capacities are not exceeded, and more specifically, to protect the airport.

2. The minimum setback between a structure and the right-of-way of an arterial shall be 50 feet. The minimum setback of a structure from the right-of-way of a collector shall be 30 feet, and from all lower class streets the minimum setback shall be 20 feet.

3. The minimum lot frontage shall not be less than 50 feet.

4. The minimum side setback between a structure and a property line shall be three feet, and the total of both side setbacks shall be twelve feet.

5. The minimum rear setback between any structure and a rear property line shall be 25 feet.

D. Transportation Impacts

1. Traffic Impact Analysis (TIA). In addition to the other standards and conditions set forth in this section, a TIA will be required for all projects generating more than 400 passenger car equivalent trips per day. Heavy vehicles - trucks, recreational vehicles and buses - will be defined as 2.2 passenger car equivalents. A TIA will include: trips generated by the project, trip distribution for the project, identification of intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts. If the corridor is a State Highway, use ODOT standards. (MC-C-8-98)

SECTION 3.090. AIRPORT APPROACH ZONE, A-A

SECTION 3.090. AIRPORT APPROACH ZONE, A-A. The A-A Zone is an overlay zone intended to restrict development in the vicinity of an airport. At the Boardman Airport the A-A Zone is the area identified on the 2002 Airport Layout Plan Map as "Approach Surface." At the Lexington Airport, the A-A Zone is the area identified on the March 2001 ALP Map as "Approach Surface." In an A-A Zone, the following regulations shall apply:

A. Uses Permitted Outright. In an A-A Zone, the following uses and their accessory uses are permitted outright:

1. Airport, including hangers, control facilities, aircraft maintenance and repair, and similar aircraft related commercial uses.
2. Farm use, excluding commercial livestock feed lot, livestock sales yard and excepting those uses set forth in subsection (2) of this section.

B. Conditional Uses. In an A-A Zone, the following uses and their accessory uses are permitted when authorized in accordance with the requirements of this section and Article 6 of this ordinance.

1. Farm accessory buildings and uses.
2. Mining, quarrying or other extraction activity, including the processing or refining of ore or other raw materials.
3. Utility facility necessary for public service.
4. Golf course.
5. Park, playground, other public recreation site or facility, or community service facility owned and operated by a governmental agency or non-profit community organization.
6. Veterinary clinic, animal pound, or kennel.

7. Private or public grounds and buildings for games, sports, riding arenas, race tracks, and similar activities.

8. Water supply and treatment facility

9. Sewage disposal and treatment facility.

10. Solid waste disposal site.

11. Manufacturing and warehousing.

12. Traveler's accommodation facilities.

13. Retail and wholesale trade facilities.

14. Residential use including mobile homes and development therefore.

C. Use Limitations. In an A-A Zone, the following limitations and standards shall apply to all uses permitted:

1. All uses shall only be permitted if found to be in compliance with the Airport Master Plan and the standards, criteria and guidelines thereof.

2. The height of any structure or part of a structure such as chimneys, towers, antennas, etc., shall be limited according to requirements established by the County or any governmental agency relative to uses in the vicinity of an airport, but in no case shall any building or structure exceed 35 feet.

3. In approach zones beyond the clear zone areas, no meeting place for public or private purposes which is designed to accommodate more than 25 persons at any one time shall be permitted, nor shall any residential use be permitted.

4. All parking demand created by any use permitted by this section shall be accommodated on the subject premises entirely off-street as provided in Article 4.

5. Access to sites and uses shall be permitted as provided in Article 4 and applicable provisions of the Transportation System Plan.

6. Any use permitted under the provisions of this section that is determined to be incompatible with an existing or planned use adjacent thereto or across the street from shall be screened from such incompatible uses by densely planted trees and shrubs or sight-obscuring fencing.

7. Mining or quarry operation permitted by subsection B.2 of this section may not be permitted if such use will allow or cause ponding which is likely to attract birds.

8. No use permitted by subsection B.3 of this section shall permit any power lines to be located in clear zones and any power lines located within an approach zone shall be in conformance with designated approach slope ratios.

9. No use permitted by this section shall be allowed if such use is likely to attract an unusual quantity of birds, particularly birds which are normally considered high flight.

10. No structure or object shall be erected, altered, allowed to glow or be maintained in such a manner as to penetrate any of the imaginary surfaces consistent with Federal Aviation Regulation (FAR), part 77.

D. Dimensional Standards. In an A-A Zone, the following dimensional standards shall apply.

1. The minimum lot size shall be determined in accordance with the provisions of this section relative to setback requirements, off-street parking and loading requirements, lot coverage limitations, and as deemed necessary by the Commission to maintain air, land and water resource quality, to protect adjoining and area land uses, to insure resource carrying capacities are not exceeded, and more specifically, to protect the airport; except that residential lot

size standards shall comply with standards set forth in the SR Zone.

2. No non-residential use permitted by this section which is located adjacent to or across the street from an existing residential use or platted lot shall exceed more coverage than 70% of the land area designed or intended for such use, including buildings, storage and loading areas.

3. No residential use permitted by this section shall be permitted to exceed 30% lot coverage by buildings and accessory structures.

4. The minimum setback between a structure and the right-of-way of an arterial shall be 50 feet. The minimum setback of a structure from the right-of-way of a collector shall be 30 feet, and from all lower class streets the minimum setback shall be 20 feet.

5. The minimum setback between a non-residential structure and a property line abutting a residential use or lot shall be 50 feet; the same setback shall be required for a residential structure and a property line abutting a non-residential use or lot.

6. The minimum lot frontage shall not be less than 50 feet.

7. The minimum side setback between a structure and a property line shall be three feet, and the total of both side setbacks shall be twelve feet.
(H) The minimum rear setback between any structure and a rear property line shall be 25 feet.

E. Sign Limitations. In addition to standards set forth by this ordinance, by applicable Sign Codes, or by regulations set forth by any other appropriate agency, in an A-A Zone, the following sign limitations shall apply:

1. For any use permitted by this section, the total area of all signs shall not exceed 200 square feet, no free-standing sign shall exceed 80 square feet and a height of 20 feet, no sign

exceeding 50 square feet of area and 6 feet in height shall be located upon the roof of any building, no sign shall exceed 15% of the area of the wall it is attached to, no sign shall be located within or protrude into a street right-of-way, and no sign shall flash or move, or be illuminated between the hours of 11:00 P.M. and 7:00 A.M., except as approved by the Commission.

F. Off-Street Parking and Loading. In an A-A Zone, off-street parking and loading shall be provided in accordance with the provisions of this section and Article 4.

G. Site Design. In an A-A Zone, the site design of any permitted use shall make the most effective use reasonably possible of the site topography, existing landscaping, and building placement so as to preserve existing trees and natural features, preserve vistas and other views from public ways, minimize visibility of parking, loading and storage areas from public ways and neighboring residential uses, and to minimize intrusion into the character of existing developments and land uses in the immediate vicinity of the proposed use. The State Aeronautics Division shall be included as a reviewing "affected party" for use applications in this Zone.

H. Design and Use Criteria. In the consideration of an application for a proposed use in an A-A Zone, the Commission shall take into account the impact of the proposed use on nearby residential and commercial uses, on resource carrying capacities, on the capacity of transportation and other public facilities and services, and on the appearance of the proposal. In approving a proposed use the Commission shall find that:

1. Proposal is in compliance with the applicable State and Federal Aviation Compatibility guidelines.
2. Proposal is in compliance with the Comprehensive Plan and the Airport Master Plan.

3. Proposal is in compliance with the intent and provisions of this ordinance and more particularly this section.

4. The Planning Commission may require establishment and maintenance of screenings, the use of glare resistant materials in construction and landscaping, or may attach other similar conditions or limitations that will serve to reduce hazards to airport operations.

I. Additional Requirements. As a condition of approval of any use proposed within an A-A Zone, the Commission may require:

1. An increase in required setbacks.
2. Additional off-street parking and loading facilities and building standards.
3. Limitations on signs or lighting, time of operations, points of ingress and egress, and building heights.
4. Additional landscaping, screening and other improvements.
5. Additional limitations on building heights.
6. Additional sound insulation requirements.
7. Any other conditions considered necessary to achieve compliance with the intent and purposes of this ordinance, policies of the Comprehensive Plan, and to protect the airport.

J. Transportation Impacts

1. Traffic Impact Analysis (TIA). In addition to the other standards and conditions set forth in this section, a TIA will be required for all projects generating more than 400 passenger car equivalent trips per day. Heavy vehicles - trucks, recreational vehicles and buses - will be defined as 2.2 passenger car equivalents. A TIA will include: trips generated by the project, trip distribution for the project, identification of

intersections for which the project adds 30 or more peak hour passenger car equivalent trips, and level of service assessment, impacts of the project, and, mitigation of the impacts. If the corridor is a State Highway, use ODOT standards. (MC-C-8-98)

SECTION 3.091. AIRPORT HAZARD ZONE, A-H

SECTION 3.091. PURPOSE. A zone regulating and restricting the height of structures and objects of natural growth, and otherwise regulating the use of property, in the vicinity of public use airports by creating the appropriate zones and establishing the boundaries thereof; providing for changes in the restrictions and boundaries of such zones; defining certain terms used herein; referring to the land use plan and approach clear zone plan (zoning maps) which are incorporated in and made a part of this ordinance; providing for enforcement; and imposing penalties.

This zone is adopted pursuant to the authority conferred by Morrow County. It is hereby found that an airport hazard endangers the lives and property of users of public use airports in Morrow County, and property or occupants of land in the vicinity thereof, and also if the obstruction type, in effect reduces the size of the area available for the landing, takeoff and maneuvering of aircraft, thus tending to destroy or impair the utility of these airports and the public investment therein. Accordingly, it is declared:

That the creation of establishment of an airport hazard within the zone is a public nuisance and an injury to the region served by public use airports in the county;

That it is necessary in the interest of the public health, public safety, and general welfare and prosperity that the creation or establishment of airport hazards be prevented; and

That the prevention of these hazards should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.

It is further declared that both the prevention of the creation or establishment of airport hazards and the elimination, removal, alteration, mitigation, or marking and lighting of existing airport hazards are public purposes for which political subdivisions may raise and expend public funds and acquire land or interests in land.

A. Definitions. As used in this section, unless the context otherwise requires:

1. AIRPORT ELEVATION - The highest point of an airport's usable landing area measured in feet from mean sea level (205 feet MSL).
2. AIRPORT HAZARD - Any structure or object of natural growth located on or in the vicinity of a public airport, or any use of land near such airport, which obstructs the airspace required for the flight of aircraft in landing or takeoff at such airport or is otherwise hazardous to such landing or takeoff of aircraft.
3. STRUCTURE - An object constructed or installed by man, including, but without limitation, buildings, towers, smokestacks, earth formation, and overhead transmission lines.
4. TREE - Any object of natural growth.
5. NONCONFORMING USE - Any pre-existing structure, object of natural growth, or use of land which is inconsistent with the provisions of this Section or an amendment thereto.
6. HEIGHT - For the purpose of determining the height limits in all zones set forth in this Section and shown on the zoning map, the datum shall be mean sea level elevation unless otherwise specified.
7. PERSON - An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.
8. RUNWAY - A defined area on public use airport prepared for landing and takeoff of aircraft along its length including both existing and proposed as shown on approved Airport Layout Plans for each airport.
9. APPROACH, TRANSITIONAL, HORIZONTAL, AND CONICAL ZONES - These zones apply to the area under the

approach, transitional, horizontal, and conical surfaces defined in Federal Aviation Regulations (FAR) Part 77, and shown on the approved Approach and Clear Zone Plan for each airport.

10. 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 the FAA approved Airport Layout Plan.

11. UTILITY RUNWAY - A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less (Runway 8-26 and 9-27 at the Morrow County Airport).

12. NON-PRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in non-precision instrument approach procedure has been approved or planned, and for which no precision approach facilities are planned or indicated on the Airport Layout Plan.

13. PRECISION INSTRUMENT RUNWAY - A runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS) or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated on the approved Airport Layout Plan.

14. PRIMARY SURFACE - A surface longitudinally centered on a runway. The primary surface extends 200 feet beyond each end of that runway. The width of the primary surface of a runway will be that width prescribed in Part 77 of the Federal Aviation Regulations (FAR) for the most precise approach existing or planned for either end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point onto the runway centerline.

15. PUBLIC USE AIRPORT - Any airport, publicly or privately owned, which is open to public use and meets all appropriate state and federal operational criteria.

B. Airport Zones. In order to carry out the provisions of this Section, there are hereby created and established certain zones which include all of the land lying within the approach zones, transitional zones, horizontal zones, and conical zones as they apply to a public use airport. Such zones are shown on both the "Land Use Plan" (Drawing 3) and "Approach and Clear Zone Plan" (Drawing 2) of the Morrow County Airport Layout Plan, which are attached to this Section and made a part hereof. An area located in more than one (1) of the following zones is considered to be only in the zone with the more restrictive limitations. At the Lexington Airport, the A-H Zone applies to the areas identified on the March 2001 ALP Map as the Approach Surface, Horizontal Surface and Conical Surface. At the Boardman Airport the A-H Zone applies to the areas identified on the August 2002 ALP Maps as the Approach Surface, Horizontal surface and Conical Surface. The various zones are hereby established and defined as follows:

1. APPROACH AND CLEAR ZONES - Those areas depicted on the approved Approach and Clear Zone Plan including the horizontal conical, approach and primary surfaces which pertain to federal aviation Regulation (FAR) Part 77. Within this zone are the following defined sub-zones:

a. Utility Runway Visual Approach Sub-Zone. The inner edge of this approach zone coincides with the width of the primary surface and is 250 feet wide. The approach zone expands outward uniformly to a width of 1,250 feet at a horizontal distance of 5,000 feet from the primary surface. Its centerline being the continuation of the centerline of the runway.

b. Runway Larger than Utility with a Visibility Minimum Greater than 3/4 Mile Non-Precision Instrument Approach Sub-Zone - The inner edge of this approach zone coincides with the width

of the primary surface and is 500 feet wide. The approach zone expands outward uniformly to a width of 3,500 feet at a horizontal distance of 10,000 feet from the primary surface. Its centerline being the continuation of the centerline of the runway.

c. Precision Instrument Runway Approach Sub-Zone - The inner edge of this approach zone coincides with the width of the primary surface and is 1,000 feet wide. The approach zone expands outward uniformly to a width of 16,000 feet at a horizontal distance of 50,000 feet from the primary surface. Its centerline being the continuation of the centerline of the runway.

d. Transitional Sub Zones - These zones are hereby established as the area beneath the transitional surfaces. These surfaces extend outward and upward at 90-degree angles to the runway centerline and the runway.

e. Horizontal Sub-Zone - The horizontal zone is hereby established by swinging arcs of 10,000 feet radii from the center of each end of the primary surface of each runway, and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones.

f. Conical Sub-Zone - The conical zone is hereby established in the area that commences at the periphery of the horizontal zone and extends outward there from a horizontal distance of 4,000 feet. The conical zone does not include the precision instrument approach zones and the transitional zones.

C. Airport Zone Height Limitations. Except as otherwise provided in this Section, no structure or tree shall be erected, altered, allowed to grow, or be maintained in any zone created by this Section to a height in excess of the applicable height limit herein established for such zone. Such applicable height limitations are hereby established for each of the zones and sub-zones in question as follows:

1. Utility Runway Visual Approach Sub-Zone - Slopes upward twenty (20) feet horizontally for each foot vertically, beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

2. Runway Larger Than Utility with a Visibility Minimum Greater Than 3/4 Mile Non-Precision Instrument Approach Sub-Zone - Slopes upward thirty-four (34) feet horizontally for each foot vertically beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline.

3. Precision Instrument Runway Approach Sub-Zone - Slopes upward fifty (50) feet horizontally for each foot vertically beginning at the end of and at the same elevation as the primary surface and extending to a horizontal distance of 10,000 feet along the extended runway centerline; thence slopes upward forty (40) feet horizontally for each foot vertically to an additional horizontal distance of 40,000 feet along the extended runway centerline.

4. Transitional Sub-Zones - Slopes upward and outward seven (7) feet horizontally for each foot vertically beginning at the sides of and at the same elevation as the primary surface and the approach zones, and extending to a height of 150 feet above the airport elevation which is the highest elevation of each public use airport. In addition to the foregoing, there are established height limits sloping upward and outward seven (7) feet horizontally for each foot vertically beginning at the sides of and at the same elevation as the approach zones, and extending to where they intersect the conical surface. Where the precision instrument runway approach zone projects beyond the conical zone, height limits sloping upward and outward seven (7) feet horizontally for each foot vertically shall be maintained beginning at the sides of and at the same elevation as precision instrument runway

approach surface, and extending to a horizontal distance of 5,000 feet measured at 90 degree angles to the extended runway centerline.

5. Horizontal Sub-Zone - One hundred and fifty (150) feet above the airport elevation.

6. Conical Sub-Zone - Slopes upward and outward twenty (20) feet horizontally for each foot vertically beginning at the periphery of the horizontal zone and at one hundred and fifty (150) feet above the airport elevation and extending to a height of 350 feet above the airport elevation.

7. Excepted Height Limitations - Nothing in this Zone shall be construed as prohibiting the growth, construction, or maintenance of any tree or structure to a height up to thirty five (35) feet above the surface of the land. When an area is covered by more than one (1) height limitation, the more restrictive limitation shall prevail. These surfaces are shown on the approved Approach and Clear Zone Plan for each public use airport.

D. Use Restrictions. Notwithstanding any other provisions of this Section, no use may be made of land or water within airport zones established by this Section in such a manner as to create electrical interference with navigational signals or radio communications between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport or otherwise in any way create a hazard or endanger the landing, takeoff, or maneuvering of aircraft intending to use the public use airport. Included in this restriction is any land or water use which would tend to foster or increase bird population and thereby increase the likelihood of a bird strike problem.

Notwithstanding any other provisions of this Section, no use may be made of land or water within the approved Approach and Clear Zones established by this Section in such a manner which would promote or

provide for large congregations of people and/or above-ground storage of flammable substance.

E. Nonconforming Uses.

1. Regulations not Retroactive - The regulations prescribed by this Zone shall not be construed to require the removal, lowering, or other changes or alterations of any structure or tree not conforming to the regulations as of the effective date of this Section, or otherwise interfere with the continuance of a nonconforming use. Nothing contained herein shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this Zone and is diligently prosecuted.

2. Marking and Lighting - Notwithstanding the preceding provision of this Section, the owner of any existing non-conforming structure or tree is hereby required to permit the installation, operation, and maintenance thereon of such markers and lights as shall be deemed necessary by the Morrow County Court, to indicate to the operators of aircraft in the vicinity of the airport the presence of such airport hazards. Such markers and lights shall be installed, operated, and maintained at the expense of the owner of the public use airport.

F. Permits.

1. Future Uses - No material change shall be made in the use of land and no structure or tree shall be erected, altered, planted, or otherwise established in any zone or sub-zone hereby created unless a permit therefore shall have been applied for and granted.

a. However, a permit for a tree or structure of less than 75 feet of vertical height above the ground shall not be required in the horizontal and conical zones or in any approach and transitional zones beyond a horizontal distance of 4,200 feet from each end of the runway except when such tree or structure, because of

terrain, land contour, or topographic features, would extend above the height limit prescribed for the respective zone.

b. Each application for a permit shall indicate the purpose for which the permit is desired with sufficient particulars to determine whether the resulting use, structure, or tree would conform to the regulation herein prescribed. If such determination is in the affirmative, the permit shall be granted.

2. Existing Uses - No permit shall be granted that would allow the establishment or creation of an airport hazard or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of this Zone or any amendments thereto or than it is when the application for a permit is made. Except as indicated, all applications for such a permit shall be granted.

3. Nonconforming Uses Abandoned or Destroyed - Whenever the county determines that a nonconforming tree or structure has been abandoned or more than 80 percent torn down, physically deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.

4. Variances - Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use his property not in accordance with the regulations prescribed in this Section may apply to the County Planning Commission for a variance from such regulations. Such variances shall be allowed where it is duly found that a literal application or enforcement of the regulations would result in practical difficulty or unnecessary hardship and relief granted would not be contrary to the public interest but will do substantial justice and be in accordance with the spirit of this Zone.

5. Hazard Marking and Lighting - Any permit or variance granted may, if such action is deemed

advisable to effectuate the purpose of this Zone and be reasonable in the circumstances, be so conditioned as to require the owner of the structure or tree in question to permit the county or airport owner, at its own expense, to install, operate, and maintain thereon, such markers and lights as may be necessary to indicate to pilots the presence of an airport hazard.

G. Enforcement. It shall be the duty of Morrow County Court to administer and enforce the regulations prescribed herein. Applications for permits and variances shall be made to the respective jurisdictions upon a form furnished by them. Applications required by this Section to be submitted to the agency of Morrow County Court shall be promptly considered and granted or denied by them. Application for action by the County Planning Commission shall be forthwith transmitted by the respective jurisdictions.

H. Appeals. Any person aggrieved, or any taxpayer affected by any decision of the county administering office made in his administration of this Zone may appeal as provided in Article 9 of this Ordinance.

Appendix D





ASSURANCES

Airport Sponsors

A. General.

1. These assurances shall be complied with in the performance of grant agreements for airport development, airport planning, and noise compatibility program grants for airport sponsors.
2. These assurances are required to be submitted as part of the project application by sponsors requesting funds under the provisions of Title 49, U.S.C., subtitle VII, as amended. As used herein, the term "public agency sponsor" means a public agency with control of a public-use airport; the term "private sponsor" means a private owner of a public-use airport; and the term "sponsor" includes both public agency sponsors and private sponsors.
3. Upon acceptance of this grant offer by the sponsor, these assurances are incorporated in and become part of this grant agreement.

B. Duration and Applicability.

1. **Airport development or Noise Compatibility Program Projects Undertaken by a Public Agency Sponsor.**

The terms, conditions and assurances of this grant agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport development or noise compatibility program project, or throughout the useful life of the project items installed within a facility under a noise compatibility program project, but in any event not to exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project. However, there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with federal funds. Furthermore, the duration of the Civil Rights assurance shall be specified in the assurances.

2. **Airport Development or Noise Compatibility Projects Undertaken by a Private Sponsor.**

The preceding paragraph 1 also applies to a private sponsor except that the useful life of project items installed within a facility or the useful life of the facilities developed or equipment acquired under an airport development or noise compatibility program project shall be no less than ten (10) years from the date of acceptance of Federal aid for the project.

3. Airport Planning Undertaken by a Sponsor.

Unless otherwise specified in this grant agreement, only Assurances 1, 2, 3, 5, 6, 13, 18, 25, 30, 32, 33, and 34 in Section C apply to planning projects. The terms, conditions, and assurances of this grant agreement shall remain in full force and effect during the life of the project; there shall be no limit on the duration of the assurances regarding Airport Revenue so long as the airport is used as an airport.

C. Sponsor Certification.

The sponsor hereby assures and certifies, with respect to this grant that:

1. General Federal Requirements.

It will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance and use of Federal funds for this project including but not limited to the following:

Federal Legislation

- a. Title 49, U.S.C., subtitle VII, as amended.
- b. Davis-Bacon Act - 40 U.S.C. 276(a), et seq.¹
- c. Federal Fair Labor Standards Act - 29 U.S.C. 201, et seq.
- d. Hatch Act – 5 U.S.C. 1501, et seq.²
- e. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 Title 42 U.S.C. 4601, et seq.^{1 2}
- f. National Historic Preservation Act of 1966 - Section 106 - 16 U.S.C. 470(f).¹
- g. Archeological and Historic Preservation Act of 1974 - 16 U.S.C. 469 through 469c.¹
- h. Native Americans Grave Repatriation Act - 25 U.S.C. Section 3001, et seq.
- i. Clean Air Act, P.L. 90-148, as amended.
- j. Coastal Zone Management Act, P.L. 93-205, as amended.
- k. Flood Disaster Protection Act of 1973 - Section 102(a) - 42 U.S.C. 4012a.¹
- l. Title 49, U.S.C., Section 303, (formerly known as Section 4(f))
- m. Rehabilitation Act of 1973 - 29 U.S.C. 794.
- n. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin);
- o. Americans with Disabilities Act of 1990, as amended, (42 U.S.C. § 12101 et seq.), prohibits discrimination on the basis of disability).
- p. Age Discrimination Act of 1975 - 42 U.S.C. 6101, et seq.
- q. American Indian Religious Freedom Act, P.L. 95-341, as amended.
- r. Architectural Barriers Act of 1968 -42 U.S.C. 4151, et seq.¹
- s. Power plant and Industrial Fuel Use Act of 1978 - Section 403- 2 U.S.C. 8373.¹
- t. Contract Work Hours and Safety Standards Act - 40 U.S.C. 327, et seq.¹
- u. Copeland Anti-kickback Act - 18 U.S.C. 874.1
- v. National Environmental Policy Act of 1969 - 42 U.S.C. 4321, et seq.¹
- w. Wild and Scenic Rivers Act, P.L. 90-542, as amended.
- x. Single Audit Act of 1984 - 31 U.S.C. 7501, et seq.²
- y. Drug-Free Workplace Act of 1988 - 41 U.S.C. 702 through 706.

- z. The Federal Funding Accountability and Transparency Act of 2006, as amended (Pub. L. 109-282, as amended by section 6202 of Pub. L. 110-252).

Executive Orders

- a. Executive Order 11246 - Equal Employment Opportunity¹
- b. Executive Order 11990 - Protection of Wetlands
- c. Executive Order 11998 – Flood Plain Management
- d. Executive Order 12372 - Intergovernmental Review of Federal Programs
- e. Executive Order 12699 - Seismic Safety of Federal and Federally Assisted New Building Construction¹
- f. Executive Order 12898 - Environmental Justice

Federal Regulations

- a. 2 CFR Part 180 - OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement).
- b. 2 CFR Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. [OMB Circular A-87 Cost Principles Applicable to Grants and Contracts with State and Local Governments, and OMB Circular A-133 - Audits of States, Local Governments, and Non-Profit Organizations].^{4, 5, 6}
- c. 2 CFR Part 1200 – Nonprocurement Suspension and Debarment
- d. 14 CFR Part 13 - Investigative and Enforcement Procedures 14 CFR Part 16 - Rules of Practice For Federally Assisted Airport Enforcement Proceedings.
- e. 14 CFR Part 150 - Airport noise compatibility planning.
- f. 28 CFR Part 35- Discrimination on the Basis of Disability in State and Local Government Services.
- g. 28 CFR § 50.3 - U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964.
- h. 29 CFR Part 1 - Procedures for predetermination of wage rates.¹
- i. 29 CFR Part 3 - Contractors and subcontractors on public building or public work financed in whole or part by loans or grants from the United States.¹
- j. 29 CFR Part 5 - Labor standards provisions applicable to contracts covering federally financed and assisted construction (also labor standards provisions applicable to non-construction contracts subject to the Contract Work Hours and Safety Standards Act).¹
- k. 41 CFR Part 60 - Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and federally assisted contracting requirements).¹
- l. 49 CFR Part 18 - Uniform administrative requirements for grants and cooperative agreements to state and local governments.³
- m. 49 CFR Part 20 - New restrictions on lobbying.
- n. 49 CFR Part 21 – Nondiscrimination in federally-assisted programs of the Department of Transportation - effectuation of Title VI of the Civil Rights Act of 1964.
- o. 49 CFR Part 23 - Participation by Disadvantage Business Enterprise in Airport Concessions.

- p. 49 CFR Part 24 – Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs.^{1 2}
- q. 49 CFR Part 26 – Participation by Disadvantaged Business Enterprises in Department of Transportation Programs.
- r. 49 CFR Part 27 – Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance.¹
- s. 49 CFR Part 28 – Enforcement of Nondiscrimination on the Basis of Handicap in Programs or Activities conducted by the Department of Transportation.
- t. 49 CFR Part 30 - Denial of public works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors.
- u. 49 CFR Part 32 – Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)
- v. 49 CFR Part 37 – Transportation Services for Individuals with Disabilities (ADA).
- w. 49 CFR Part 41 - Seismic safety of Federal and federally assisted or regulated new building construction.

Specific Assurances

Specific assurances required to be included in grant agreements by any of the above laws, regulations or circulars are incorporated by reference in this grant agreement.

Footnotes to Assurance C.1.

¹ These laws do not apply to airport planning sponsors.

² These laws do not apply to private sponsors.

³ 49 CFR Part 18 and 2 CFR Part 200 contain requirements for State and Local Governments receiving Federal assistance. Any requirement levied upon State and Local Governments by this regulation and circular shall also be applicable to private sponsors receiving Federal assistance under Title 49, United States Code.

⁴ On December 26, 2013 at 78 FR 78590, the Office of Management and Budget (OMB) issued the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards in 2 CFR Part 200. 2 CFR Part 200 replaces and combines the former Uniform Administrative Requirements for Grants (OMB Circular A-102 and Circular A-110 or 2 CFR Part 215 or Circular) as well as the Cost Principles (Circulars A-21 or 2 CFR part 220; Circular A-87 or 2 CFR part 225; and A-122, 2 CFR part 230). Additionally it replaces Circular A-133 guidance on the Single Annual Audit. In accordance with 2 CFR section 200.110, the standards set forth in Part 200 which affect administration of Federal awards issued by Federal agencies become effective once implemented by Federal agencies or when any future amendment to this Part becomes final. Federal agencies, including the Department of Transportation, must implement the policies and procedures applicable to Federal awards by promulgating a regulation to be effective by December 26, 2014 unless different provisions are required by statute or approved by OMB.

⁵ Cost principles established in 2 CFR part 200 subpart E must be used as guidelines for determining the eligibility of specific types of expenses.

⁶ Audit requirements established in 2 CFR part 200 subpart F are the guidelines for audits.

2. Responsibility and Authority of the Sponsor.

a. Public Agency Sponsor:

It has legal authority to apply for this grant, and to finance and carry out the proposed project; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.

b. Private Sponsor:

It has legal authority to apply for this grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of this grant agreement. It shall designate an official representative and shall in writing direct and authorize that person to file this application, including all understandings and assurances contained therein; to act in connection with this application; and to provide such additional information as may be required.

3. Sponsor Fund Availability.

It has sufficient funds available for that portion of the project costs which are not to be paid by the United States. It has sufficient funds available to assure operation and maintenance of items funded under this grant agreement which it will own or control.

4. Good Title.

a. It, a public agency or the Federal government, holds good title, satisfactory to the Secretary, to the landing area of the airport or site thereof, or will give assurance satisfactory to the Secretary that good title will be acquired.

b. For noise compatibility program projects to be carried out on the property of the sponsor, it holds good title satisfactory to the Secretary to that portion of the property upon which Federal funds will be expended or will give assurance to the Secretary that good title will be obtained.

5. Preserving Rights and Powers.

a. It will not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in this grant agreement without the written approval of the Secretary, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor. This shall be done in a manner acceptable to the Secretary.

- b. It will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property shown on Exhibit A to this application or, for a noise compatibility program project, that portion of the property upon which Federal funds have been expended, for the duration of the terms, conditions, and assurances in this grant agreement without approval by the Secretary. If the transferee is found by the Secretary to be eligible under Title 49, United States Code, to assume the obligations of this grant agreement and to have the power, authority, and financial resources to carry out all such obligations, the sponsor shall insert in the contract or document transferring or disposing of the sponsor's interest, and make binding upon the transferee all of the terms, conditions, and assurances contained in this grant agreement.
- c. For all noise compatibility program projects which are to be carried out by another unit of local government or are on property owned by a unit of local government other than the sponsor, it will enter into an agreement with that government. Except as otherwise specified by the Secretary, that agreement shall obligate that government to the same terms, conditions, and assurances that would be applicable to it if it applied directly to the FAA for a grant to undertake the noise compatibility program project. That agreement and changes thereto must be satisfactory to the Secretary. It will take steps to enforce this agreement against the local government if there is substantial non-compliance with the terms of the agreement.
- d. For noise compatibility program projects to be carried out on privately owned property, it will enter into an agreement with the owner of that property which includes provisions specified by the Secretary. It will take steps to enforce this agreement against the property owner whenever there is substantial non-compliance with the terms of the agreement.
- e. If the sponsor is a private sponsor, it will take steps satisfactory to the Secretary to ensure that the airport will continue to function as a public-use airport in accordance with these assurances for the duration of these assurances.
- f. If an arrangement is made for management and operation of the airport by any agency or person other than the sponsor or an employee of the sponsor, the sponsor will reserve sufficient rights and authority to insure that the airport will be operated and maintained in accordance Title 49, United States Code, the regulations and the terms, conditions and assurances in this grant agreement and shall insure that such arrangement also requires compliance therewith.
- g. Sponsors of commercial service airports will not permit or enter into any arrangement that results in permission for the owner or tenant of a property used as a residence, or zoned for residential use, to taxi an aircraft between that property and any location on airport. Sponsors of general aviation airports entering into any arrangement that results in permission for the owner of residential real property adjacent to or near the airport must comply with the requirements of Sec. 136 of Public Law 112-95 and the sponsor assurances.

6. Consistency with Local Plans.

The project is reasonably consistent with plans (existing at the time of submission of this application) of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.

7. Consideration of Local Interest.

It has given fair consideration to the interest of communities in or near where the project may be located.

8. Consultation with Users.

In making a decision to undertake any airport development project under Title 49, United States Code, it has undertaken reasonable consultations with affected parties using the airport at which project is proposed.

9. Public Hearings.

In projects involving the location of an airport, an airport runway, or a major runway extension, it has afforded the opportunity for public hearings for the purpose of considering the economic, social, and environmental effects of the airport or runway location and its consistency with goals and objectives of such planning as has been carried out by the community and it shall, when requested by the Secretary, submit a copy of the transcript of such hearings to the Secretary. Further, for such projects, it has on its management board either voting representation from the communities where the project is located or has advised the communities that they have the right to petition the Secretary concerning a proposed project.

10. Metropolitan Planning Organization.

In projects involving the location of an airport, an airport runway, or a major runway extension at a medium or large hub airport, the sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted.

11. Pavement Preventive Maintenance.

With respect to a project approved after January 1, 1995, for the replacement or reconstruction of pavement at the airport, it assures or certifies that it has implemented an effective airport pavement maintenance-management program and it assures that it will use such program for the useful life of any pavement constructed, reconstructed or repaired with Federal financial assistance at the airport. It will provide such reports on pavement condition and pavement management programs as the Secretary determines may be useful.

12. Terminal Development Prerequisites.

For projects which include terminal development at a public use airport, as defined in Title 49, it has, on the date of submittal of the project grant application, all the safety equipment required for certification of such airport under section 44706 of Title 49, United States Code, and all the security equipment required by rule or regulation, and

has provided for access to the passenger enplaning and deplaning area of such airport to passengers enplaning and deplaning from aircraft other than air carrier aircraft.

13. Accounting System, Audit, and Record Keeping Requirements.

- a. It shall keep all project accounts and records which fully disclose the amount and disposition by the recipient of the proceeds of this grant, the total cost of the project in connection with which this grant is given or used, and the amount or nature of that portion of the cost of the project supplied by other sources, and such other financial records pertinent to the project. The accounts and records shall be kept in accordance with an accounting system that will facilitate an effective audit in accordance with the Single Audit Act of 1984.
- b. It shall make available to the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination, any books, documents, papers, and records of the recipient that are pertinent to this grant. The Secretary may require that an appropriate audit be conducted by a recipient. In any case in which an independent audit is made of the accounts of a sponsor relating to the disposition of the proceeds of a grant or relating to the project in connection with which this grant was given or used, it shall file a certified copy of such audit with the Comptroller General of the United States not later than six (6) months following the close of the fiscal year for which the audit was made.

14. Minimum Wage Rates.

It shall include, in all contracts in excess of \$2,000 for work on any projects funded under this grant agreement which involve labor, provisions establishing minimum rates of wages, to be predetermined by the Secretary of Labor, in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5), which contractors shall pay to skilled and unskilled labor, and such minimum rates shall be stated in the invitation for bids and shall be included in proposals or bids for the work.

15. Veteran's Preference.

It shall include in all contracts for work on any project funded under this grant agreement which involve labor, such provisions as are necessary to insure that, in the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Vietnam era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in Section 47112 of Title 49, United States Code. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

16. Conformity to Plans and Specifications.

It will execute the project subject to plans, specifications, and schedules approved by the Secretary. Such plans, specifications, and schedules shall be submitted to the Secretary prior to commencement of site preparation, construction, or other performance under this grant agreement, and, upon approval of the Secretary, shall be incorporated into this grant agreement. Any modification to the approved plans,

specifications, and schedules shall also be subject to approval of the Secretary, and incorporated into this grant agreement.

17. Construction Inspection and Approval.

It will provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the plans, specifications, and schedules approved by the Secretary for the project. It shall subject the construction work on any project contained in an approved project application to inspection and approval by the Secretary and such work shall be in accordance with regulations and procedures prescribed by the Secretary. Such regulations and procedures shall require such cost and progress reporting by the sponsor or sponsors of such project as the Secretary shall deem necessary.

18. Planning Projects.

In carrying out planning projects:

- a. It will execute the project in accordance with the approved program narrative contained in the project application or with the modifications similarly approved.
- b. It will furnish the Secretary with such periodic reports as required pertaining to the planning project and planning work activities.
- c. It will include in all published material prepared in connection with the planning project a notice that the material was prepared under a grant provided by the United States.
- d. It will make such material available for examination by the public, and agrees that no material prepared with funds under this project shall be subject to copyright in the United States or any other country.
- e. It will give the Secretary unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this grant.
- f. It will grant the Secretary the right to disapprove the sponsor's employment of specific consultants and their subcontractors to do all or any part of this project as well as the right to disapprove the proposed scope and cost of professional services.
- g. It will grant the Secretary the right to disapprove the use of the sponsor's employees to do all or any part of the project.
- h. It understands and agrees that the Secretary's approval of this project grant or the Secretary's approval of any planning material developed as part of this grant does not constitute or imply any assurance or commitment on the part of the Secretary to approve any pending or future application for a Federal airport grant.

19. Operation and Maintenance.

- a. The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable Federal,

state and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes. It will suitably operate and maintain the airport and all facilities thereon or connected therewith, with due regard to climatic and flood conditions. Any proposal to temporarily close the airport for non-aeronautical purposes must first be approved by the Secretary. In furtherance of this assurance, the sponsor will have in effect arrangements for-

- 1) Operating the airport's aeronautical facilities whenever required;
 - 2) Promptly marking and lighting hazards resulting from airport conditions, including temporary conditions; and
 - 3) Promptly notifying airmen of any condition affecting aeronautical use of the airport. Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when snow, flood or other climatic conditions interfere with such operation and maintenance. Further, nothing herein shall be construed as requiring the maintenance, repair, restoration, or replacement of any structure or facility which is substantially damaged or destroyed due to an act of God or other condition or circumstance beyond the control of the sponsor.
- b. It will suitably operate and maintain noise compatibility program items that it owns or controls upon which Federal funds have been expended.

20. Hazard Removal and Mitigation.

It will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

21. Compatible Land Use.

It will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In addition, if the project is for noise compatibility program implementation, it will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility, with respect to the airport, of the noise compatibility program measures upon which Federal funds have been expended.

22. Economic Nondiscrimination.

- a. It will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.
- b. In any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or

to engage in any aeronautical activity for furnishing services to the public at the airport, the sponsor will insert and enforce provisions requiring the contractor to-

- 1) furnish said services on a reasonable, and not unjustly discriminatory, basis to all users thereof, and
 - 2) charge reasonable, and not unjustly discriminatory, prices for each unit or service, provided that the contractor may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.
- c. Each fixed-based operator at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-based operators making the same or similar uses of such airport and utilizing the same or similar facilities.
 - d. Each air carrier using such airport shall have the right to service itself or to use any fixed-based operator that is authorized or permitted by the airport to serve any air carrier at such airport.
 - e. Each air carrier using such airport (whether as a tenant, non-tenant, or subtenant of another air carrier tenant) shall be subject to such nondiscriminatory and substantially comparable rules, regulations, conditions, rates, fees, rentals, and other charges with respect to facilities directly and substantially related to providing air transportation as are applicable to all such air carriers which make similar use of such airport and utilize similar facilities, subject to reasonable classifications such as tenants or non-tenants and signatory carriers and non-signatory carriers. Classification or status as tenant or signatory shall not be unreasonably withheld by any airport provided an air carrier assumes obligations substantially similar to those already imposed on air carriers in such classification or status.
 - f. It will not exercise or grant any right or privilege which operates to prevent any person, firm, or corporation operating aircraft on the airport from performing any services on its own aircraft with its own employees [including, but not limited to maintenance, repair, and fueling] that it may choose to perform.
 - g. In the event the sponsor itself exercises any of the rights and privileges referred to in this assurance, the services involved will be provided on the same conditions as would apply to the furnishing of such services by commercial aeronautical service providers authorized by the sponsor under these provisions.
 - h. The sponsor may establish such reasonable, and not unjustly discriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport.
 - i. The sponsor may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

23. Exclusive Rights.

It will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public. For purposes of this paragraph, the providing of the services at an airport by a single fixed-based operator shall not be construed as an exclusive right if both of the following apply:

- a. It would be unreasonably costly, burdensome, or impractical for more than one fixed-based operator to provide such services, and
- b. If allowing more than one fixed-based operator to provide such services would require the reduction of space leased pursuant to an existing agreement between such single fixed-based operator and such airport. It further agrees that it will not, either directly or indirectly, grant or permit any person, firm, or corporation, the exclusive right at the airport to conduct any aeronautical activities, including, but not limited to charter flights, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, air carrier operations, aircraft sales and services, sale of aviation petroleum products whether or not conducted in conjunction with other aeronautical activity, repair and maintenance of aircraft, sale of aircraft parts, and any other activities which because of their direct relationship to the operation of aircraft can be regarded as an aeronautical activity, and that it will terminate any exclusive right to conduct an aeronautical activity now existing at such an airport before the grant of any assistance under Title 49, United States Code.

24. Fee and Rental Structure.

It will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection. No part of the Federal share of an airport development, airport planning or noise compatibility project for which a grant is made under Title 49, United States Code, the Airport and Airway Improvement Act of 1982, the Federal Airport Act or the Airport and Airway Development Act of 1970 shall be included in the rate basis in establishing fees, rates, and charges for users of that airport.

25. Airport Revenues.

- a. All revenues generated by the airport and any local taxes on aviation fuel established after December 30, 1987, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport. The following exceptions apply to this paragraph:
 - 1) If covenants or assurances in debt obligations issued before September 3, 1982, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or

operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all revenues generated by the airport (and, in the case of a public airport, local taxes on aviation fuel) shall not apply.

- 2) If the Secretary approves the sale of a privately owned airport to a public sponsor and provides funding for any portion of the public sponsor's acquisition of land, this limitation on the use of all revenues generated by the sale shall not apply to certain proceeds from the sale. This is conditioned on repayment to the Secretary by the private owner of an amount equal to the remaining unamortized portion (amortized over a 20-year period) of any airport improvement grant made to the private owner for any purpose other than land acquisition on or after October 1, 1996, plus an amount equal to the federal share of the current fair market value of any land acquired with an airport improvement grant made to that airport on or after October 1, 1996.
 - 3) Certain revenue derived from or generated by mineral extraction, production, lease, or other means at a general aviation airport (as defined at Section 47102 of title 49 United States Code), if the FAA determines the airport sponsor meets the requirements set forth in Sec. 813 of Public Law 112-95.
- b. As part of the annual audit required under the Single Audit Act of 1984, the sponsor will direct that the audit will review, and the resulting audit report will provide an opinion concerning, the use of airport revenue and taxes in paragraph (a), and indicating whether funds paid or transferred to the owner or operator are paid or transferred in a manner consistent with Title 49, United States Code and any other applicable provision of law, including any regulation promulgated by the Secretary or Administrator.
 - c. Any civil penalties or other sanctions will be imposed for violation of this assurance in accordance with the provisions of Section 47107 of Title 49, United States Code.

26. Reports and Inspections.

It will:

- a. submit to the Secretary such annual or special financial and operations reports as the Secretary may reasonably request and make such reports available to the public; make available to the public at reasonable times and places a report of the airport budget in a format prescribed by the Secretary;
- b. for airport development projects, make the airport and all airport records and documents affecting the airport, including deeds, leases, operation and use agreements, regulations and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request;
- c. for noise compatibility program projects, make records and documents relating to the project and continued compliance with the terms, conditions, and assurances of this grant agreement including deeds, leases, agreements, regulations, and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request; and

- d. in a format and time prescribed by the Secretary, provide to the Secretary and make available to the public following each of its fiscal years, an annual report listing in detail:
 - 1) all amounts paid by the airport to any other unit of government and the purposes for which each such payment was made; and
 - 2) all services and property provided by the airport to other units of government and the amount of compensation received for provision of each such service and property.

27. Use by Government Aircraft.

It will make available all of the facilities of the airport developed with Federal financial assistance and all those usable for landing and takeoff of aircraft to the United States for use by Government aircraft in common with other aircraft at all times without charge, except, if the use by Government aircraft is substantial, charge may be made for a reasonable share, proportional to such use, for the cost of operating and maintaining the facilities used. Unless otherwise determined by the Secretary, or otherwise agreed to by the sponsor and the using agency, substantial use of an airport by Government aircraft will be considered to exist when operations of such aircraft are in excess of those which, in the opinion of the Secretary, would unduly interfere with use of the landing areas by other authorized aircraft, or during any calendar month that –

- a. Five (5) or more Government aircraft are regularly based at the airport or on land adjacent thereto; or
- b. The total number of movements (counting each landing as a movement) of Government aircraft is 300 or more, or the gross accumulative weight of Government aircraft using the airport (the total movement of Government aircraft multiplied by gross weights of such aircraft) is in excess of five million pounds.

28. Land for Federal Facilities.

It will furnish without cost to the Federal Government for use in connection with any air traffic control or air navigation activities, or weather-reporting and communication activities related to air traffic control, any areas of land or water, or estate therein, or rights in buildings of the sponsor as the Secretary considers necessary or desirable for construction, operation, and maintenance at Federal expense of space or facilities for such purposes. Such areas or any portion thereof will be made available as provided herein within four months after receipt of a written request from the Secretary.

29. Airport Layout Plan.

- a. It will keep up to date at all times an airport layout plan of the airport showing
 - 1) boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the sponsor for airport purposes and proposed additions thereto;
 - 2) the location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars and

roads), including all proposed extensions and reductions of existing airport facilities;

- 3) the location of all existing and proposed nonaviation areas and of all existing improvements thereon; and
 - 4) all proposed and existing access points used to taxi aircraft across the airport's property boundary. Such airport layout plans and each amendment, revision, or modification thereof, shall be subject to the approval of the Secretary which approval shall be evidenced by the signature of a duly authorized representative of the Secretary on the face of the airport layout plan. The sponsor will not make or permit any changes or alterations in the airport or any of its facilities which are not in conformity with the airport layout plan as approved by the Secretary and which might, in the opinion of the Secretary, adversely affect the safety, utility or efficiency of the airport.
- b. If a change or alteration in the airport or the facilities is made which the Secretary determines adversely affects the safety, utility, or efficiency of any federally owned, leased, or funded property on or off the airport and which is not in conformity with the airport layout plan as approved by the Secretary, the owner or operator will, if requested, by the Secretary (1) eliminate such adverse effect in a manner approved by the Secretary; or (2) bear all costs of relocating such property (or replacement thereof) to a site acceptable to the Secretary and all costs of restoring such property (or replacement thereof) to the level of safety, utility, efficiency, and cost of operation existing before the unapproved change in the airport or its facilities except in the case of a relocation or replacement of an existing airport facility due to a change in the Secretary's design standards beyond the control of the airport sponsor.

30. Civil Rights.

It will promptly take any measures necessary to ensure that no person in the United States shall, on the grounds of race, creed, color, national origin, sex, age, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any activity conducted with, or benefiting from, funds received from this grant.

- a. Using the definitions of activity, facility and program as found and defined in §§ 21.23 (b) and 21.23 (e) of 49 CFR § 21, the sponsor will facilitate all programs, operate all facilities, or conduct all programs in compliance with all non-discrimination requirements imposed by, or pursuant to these assurances.
- b. Applicability
 - 1) Programs and Activities. If the sponsor has received a grant (or other federal assistance) for any of the sponsor's program or activities, these requirements extend to all of the sponsor's programs and activities.
 - 2) Facilities. Where it receives a grant or other federal financial assistance to construct, expand, renovate, remodel, alter or acquire a facility, or part of a facility, the assurance extends to the entire facility and facilities operated in connection therewith.

- 3) Real Property. Where the sponsor receives a grant or other Federal financial assistance in the form of, or for the acquisition of real property or an interest in real property, the assurance will extend to rights to space on, over, or under such property.

c. Duration.

The sponsor agrees that it is obligated to this assurance for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the assurance obligates the sponsor, or any transferee for the longer of the following periods:

- 1) So long as the airport is used as an airport, or for another purpose involving the provision of similar services or benefits; or
- 2) So long as the sponsor retains ownership or possession of the property.

d. Required Solicitation Language. It will include the following notification in all solicitations for bids, Requests For Proposals for work, or material under this grant agreement and in all proposals for agreements, including airport concessions, regardless of funding source:

“The **(Name of Sponsor)**, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises and airport concession disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.”

e. Required Contract Provisions.

- 1) It will insert the non-discrimination contract clauses requiring compliance with the acts and regulations relative to non-discrimination in Federally-assisted programs of the DOT, and incorporating the acts and regulations into the contracts by reference in every contract or agreement subject to the non-discrimination in Federally-assisted programs of the DOT acts and regulations.
- 2) It will include a list of the pertinent non-discrimination authorities in every contract that is subject to the non-discrimination acts and regulations.
- 3) It will insert non-discrimination contract clauses as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a sponsor.
- 4) It will insert non-discrimination contract clauses prohibiting discrimination on the basis of race, color, national origin, creed, sex, age, or handicap as a

covenant running with the land, in any future deeds, leases, license, permits, or similar instruments entered into by the sponsor with other parties:

- a) For the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and
 - b) For the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.
- f. It will provide for such methods of administration for the program as are found by the Secretary to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the acts, the regulations, and this assurance.
- g. It agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the acts, the regulations, and this assurance.

31. Disposal of Land.

- a. For land purchased under a grant for airport noise compatibility purposes, including land serving as a noise buffer, it will dispose of the land, when the land is no longer needed for such purposes, at fair market value, at the earliest practicable time. That portion of the proceeds of such disposition which is proportionate to the United States' share of acquisition of such land will be, at the discretion of the Secretary, (1) reinvested in another project at the airport, or (2) transferred to another eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order, (1) reinvestment in an approved noise compatibility project, (2) reinvestment in an approved project that is eligible for grant funding under Section 47117(e) of title 49 United States Code, (3) reinvestment in an approved airport development project that is eligible for grant funding under Sections 47114, 47115, or 47117 of title 49 United States Code, (4) transferred to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport, and (5) paid to the Secretary for deposit in the Airport and Airway Trust Fund. If land acquired under a grant for noise compatibility purposes is leased at fair market value and consistent with noise buffering purposes, the lease will not be considered a disposal of the land. Revenues derived from such a lease may be used for an approved airport development project that would otherwise be eligible for grant funding or any permitted use of airport revenue.
- b. For land purchased under a grant for airport development purposes (other than noise compatibility), it will, when the land is no longer needed for airport purposes, dispose of such land at fair market value or make available to the Secretary an amount equal to the United States' proportionate share of the fair market value of the land. That portion of the proceeds of such disposition which is proportionate to the United States' share of the cost of acquisition of such land will, (1) upon application to the Secretary, be reinvested or transferred to another

eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order: (1) reinvestment in an approved noise compatibility project, (2) reinvestment in an approved project that is eligible for grant funding under Section 47117(e) of title 49 United States Code, (3) reinvestment in an approved airport development project that is eligible for grant funding under Sections 47114, 47115, or 47117 of title 49 United States Code, (4) transferred to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport, and (5) paid to the Secretary for deposit in the Airport and Airway Trust Fund.

- c. Land shall be considered to be needed for airport purposes under this assurance if (1) it may be needed for aeronautical purposes (including runway protection zones) or serve as noise buffer land, and (2) the revenue from interim uses of such land contributes to the financial self-sufficiency of the airport. Further, land purchased with a grant received by an airport operator or owner before December 31, 1987, will be considered to be needed for airport purposes if the Secretary or Federal agency making such grant before December 31, 1987, was notified by the operator or owner of the uses of such land, did not object to such use, and the land continues to be used for that purpose, such use having commenced no later than December 15, 1989.
- d. Disposition of such land under (a) (b) or (c) will be subject to the retention or reservation of any interest or right therein necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport.

32. Engineering and Design Services.

It will award each contract, or sub-contract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping or related services with respect to the project in the same manner as a contract for architectural and engineering services is negotiated under Title IX of the Federal Property and Administrative Services Act of 1949 or an equivalent qualifications-based requirement prescribed for or by the sponsor of the airport.

33. Foreign Market Restrictions.

It will not allow funds provided under this grant to be used to fund any project which uses any product or service of a foreign country during the period in which such foreign country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

34. Policies, Standards, and Specifications.

It will carry out the project in accordance with policies, standards, and specifications approved by the Secretary including but not limited to the advisory circulars listed in the Current FAA Advisory Circulars for AIP projects, dated _____ (the latest approved version as of this grant offer) and included in this grant, and in accordance

with applicable state policies, standards, and specifications approved by the Secretary.

35. Relocation and Real Property Acquisition.

- a. It will be guided in acquiring real property, to the greatest extent practicable under State law, by the land acquisition policies in Subpart B of 49 CFR Part 24 and will pay or reimburse property owners for necessary expenses as specified in Subpart B.
- b. It will provide a relocation assistance program offering the services described in Subpart C and fair and reasonable relocation payments and assistance to displaced persons as required in Subpart D and E of 49 CFR Part 24.
- c. It will make available within a reasonable period of time prior to displacement, comparable replacement dwellings to displaced persons in accordance with Subpart E of 49 CFR Part 24.

36. Access By Intercity Buses.

The airport owner or operator will permit, to the maximum extent practicable, intercity buses or other modes of transportation to have access to the airport; however, it has no obligation to fund special facilities for intercity buses or for other modes of transportation.

37. Disadvantaged Business Enterprises.

The sponsor shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any DOT-assisted contract covered by 49 CFR Part 26, or in the award and performance of any concession activity contract covered by 49 CFR Part 23. In addition, the sponsor shall not discriminate on the basis of race, color, national origin or sex in the administration of its DBE and ACDBE programs or the requirements of 49 CFR Parts 23 and 26. The sponsor shall take all necessary and reasonable steps under 49 CFR Parts 23 and 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts, and/or concession contracts. The sponsor's DBE and ACDBE programs, as required by 49 CFR Parts 26 and 23, and as approved by DOT, are incorporated by reference in this agreement. Implementation of these programs is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the sponsor of its failure to carry out its approved program, the Department may impose sanctions as provided for under Parts 26 and 23 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1936 (31 U.S.C. 3801).

38. Hangar Construction.

If the airport owner or operator and a person who owns an aircraft agree that a hangar is to be constructed at the airport for the aircraft at the aircraft owner's expense, the airport owner or operator will grant to the aircraft owner for the hangar a long term lease that is subject to such terms and conditions on the hangar as the airport owner or operator may impose.

39. Competitive Access.

- a. If the airport owner or operator of a medium or large hub airport (as defined in section 47102 of title 49, U.S.C.) has been unable to accommodate one or more requests by an air carrier for access to gates or other facilities at that airport in order to allow the air carrier to provide service to the airport or to expand service at the airport, the airport owner or operator shall transmit a report to the Secretary that-
 - 1) Describes the requests;
 - 2) Provides an explanation as to why the requests could not be accommodated; and
 - 3) Provides a time frame within which, if any, the airport will be able to accommodate the requests.
- b. Such report shall be due on either February 1 or August 1 of each year if the airport has been unable to accommodate the request(s) in the six month period prior to the applicable due date.

Appendix E



JANITORIAL SERVICES CONTRACT

This agreement made as of the _____ day of _____, 2012, by and between Morrow County, a political subdivision of the State of Oregon, (County), and Hermiston Cleaning Services (Contractor);

WITNESSETH;

That whereas, County requires the performance of janitorial services to maintain proper upkeep and sanitation of County facilities located in Morrow County; and

Whereas, County does not have sufficient personnel currently on staff to perform such duties; and

Whereas, Contractor submitted the lowest bid offered in response to County's advertised request for bids, which bid of Contractor was accepted;

Whereas, Contractor is in the business of performing such janitorial services for various clients;

NOW THEREFORE, the parties are agreed upon the following terms and conditions:

1. Contractor will perform janitorial and maintenance services, as herein described, at the following locations:
 - a) MC Annex, Heppner Two Days a week
 - b) MC Courthouse, Heppner, Three days a week
 - c) MC Lexington Airport, Lexington, Once a week
 - d) MC Sherriff, Heppner, Three days a week, (Mon. Wed., Fri)
 - e) MC Emergency. Management, Heppner Twice a week
 - f) MC Health Department, Heppner, Three days a week
 - g) MC Public Works Office and Shop, Once weekly
 - h) OSU Extension Office, Heppner, Two days a week
 - i) MC Sherriff, Boardman, Once a week
 - j) MC Health Building, Boardman, Twice a week
 - k) MC Annex, Irrigon, Twice a week
 - l) MC Emergency Management, Irrigon Once a week

2. Contractor shall comply with the following performance standards, instructions, and guidelines:

GENERAL CLEANING

- A. All waste paper shall be gathered, the waste paper baskets emptied, and clean liners installed in the baskets;
- B. All paper and/or debris shall be gathered from the floor space in hallways, entrances and restrooms; Papers on the floor in offices will be placed on the nearest desk;

- C. Liners shall be used to aid in trash disposal and to keep waste baskets clean; broken liners shall be replaced and soiled waste baskets washed; damaged or excessively soiled baskets shall be replaced by County;
- D. Counters and file cabinets shall be dusted; dusting will be done with standard dusting implements using dust collecting and or attracting sprays, or, where feasible, with a clean damp cloth; no books, files, papers, or other items of office use shall be moved or removed; dusting shall be done without disturbing such objects; high partitions, ledges and moldings shall also be dusted, and this dusting may be done with a clean damp cloth;
- E. Drinking fountains shall be cleaned using a clean cloth or sponge around the drinking area. Standard cleaners will be used along the sides, base or stained fixtures on an "as needed" basis;
- F. Walls and ceilings shall be dusted with dust mops or wands with dust attracting applications; walls and ceilings shall not be cleaned with a cloth or sponge unless heavily soiled as the result of streaking or staining;
- G. Windows shall be washed, interior and exterior, as needed, as agreed with Morrow County General Maintenance Supervisor; with the exception of the Court House windows. They shall be cleaned by the county on the out side.
- H. Window blinds shall be thoroughly cleaned of dust or stains; Contractor may remove blinds for washing where feasible;
- I. Storage areas shall be kept neat and tidy.

FLOORS

- A. All non-carpeted floors, including, but not limited to bathrooms, entrances, or hallways, shall be damp-mopped; the mop used shall be kept clean and free of odor and shall not be wet or moist; mop strings shall be removed; streaking along walls, doors, or baseboards shall be immediately cleaned;
- B. All carpeted floors shall be vacuumed; vacuuming shall follow all other dusting and room cleaning operations; vacuum equipment power type shall conform to standard commercial janitorial specifications; vacuuming shall extend at least six inches under desks and completely under open tables; Contractor shall move furniture or wastebaskets prior to vacuuming and shall replace according to usual office arrangement;
- C. Carpets shall be Bonnet cleaned three (2) times per year and deep cleaned one (1) time per year.

OFFICES

- A. All tables, chairs, and other office furniture shall be dusted in accordance with the dusting specifications set forth above;
- B. Office furniture shall be returned to its usual arrangement, whether moved by Contractor for cleaning purposes, or by others;

RESTROOMS

- A. Restroom fixtures and fittings shall be cleaned using standard commercial or household non-abrasive cleaners; attention shall be given to the underside of fixture edges where grime and soap deposits accumulate; the General Maintenance Supervisor shall be notified immediately if fixtures or fittings are found to be damaged or soiled beyond cleaning ability; fixtures and fittings include, but are not limited to, sink faucets, spouts, drains, under drains (if chromed or polished metal), urinal faucets, pipes (chromed or polished metal), toilet handles, soap dispensers and vanity fittings;
 - B. Restroom dispensers shall be cleaned and refilled;
 - C. Restroom walls, partitions and doors shall be spot washed as necessary; disinfectants shall be used around urinals and toilets;
 - D. Restroom mirrors shall be cleaned using standard commercial or household products with a clean cloth or paper;
 - E. Toilet bowls and urinals shall be disinfected, sanitized and deodorized; urinal screens shall be replaced;
3. The Morrow County General Maintenance Supervisor is County's representative herein, and is responsible for the administration and supervision of this contract on County's behalf; the office of said General Maintenance Supervisor is located at the County Fairgrounds in Heppner, Oregon, and may be reached by cell phone 541-240-1791
 4. The term "as directed", as used herein, shall mean at the direction of the General Maintenance Supervisor, or his designee; the term "as needed", as used herein, shall mean as within the discretion of the Contractor, subject to reasonable request from County.
 5. Contract period shall be for a period of one (3) years, beginning March 7, 2012 and ending March 7, 2015.
 6. County shall pay to Contractor the monthly sum of \$__6,000.00__ in consideration of Contractor's performance hereof, upon submission by Contractor of a billing in proper form.
 7. The parties intend that this contract shall not be subcontracted, and that this contract shall operate as an agreement with an independent contractor as that term is defined in Oregon Revised Statutes Chapter 656. Contractor shall indemnify and hold County harmless in the event of any fine, penalty, or assessment is imposed upon County by reason of application or said ORS Chapter.
 8. In the event of suit or action to enforce the terms of this agreement, or any of them, the prevailing party shall be entitled to recover its costs, including reasonable attorney's fees, at trial or upon any appeal therefrom.
 9. Either party may terminate this agreement by providing 30 days written notice to the other party.

IN WITNESS WHEREOF, the parties have set their hands as of the date first mentioned above.

MORROW COUNTY COURT

Terry Tallman, Judge

Ken Grieb, Commissioner

Leann Rea, Commissioner

ATTEST:

Bobbi Childers
County Clerk

CONTRACTOR:

Hermiston Cleaning Services
Victor Founts

STATE OF OREGON)
)ss.
County of Morrow)

Personally appeared before me the ____ day of _____, 2____, the above-named _____ and acknowledged the foregoing was executed by and on behalf of said _____.

Notary Public for Oregon
My Commission Expires:

MORROW COUNTY LEXINGTON AIRPORT - Hangar Lease

Morrow County entered into this agreement the undersigned Tenant as follows

1. Premises. County leases to Tenant and Tenant takes the space described as Hangar 102 shown on the attached diagram) on the terms set forth in this Lease.
2. Term a term beginning July 2014 and ending July 2016 at and for a rental fee per month during said term, payable in advance in Lawful money of the United States to the order of the first party at the following address: Morrow County Public Works. P0 Box 428 Lexington Oregon 97839. Tenant may terminate lease of the hangar at any time during the term of this lease with two weeks prior written notice to Morrow County Public Works.
3. Proceeds from rent. The proceeds derived from this lease will be utilized in the airport maintenance fund.
4. Rent is \$ 120.00 per month, in advance, due on or before the first day of each month beginning The Tenant shall be in default of the lease The Tenant shall be in default of the lease failing to pay rent ten days after the monthly due date.
5. Insurance. Tenant shall carry liability insurance with limits of \$500,000.00 in aggregate and agrees to adjust the amounts and coverage's to meet standards set up in Airport Rules and Regulations and State and Federal Rules, present and future, and to include County as a named insured. (Not less than maximum set in Oregon Tort Claims statute. ORS 302).
6. Indemnification. Tenant shall indemnify and defend the County, its officers , agents and employees from any claims, demands, loss or liability arising out of or relate to any activity of the Tenant on the Premises, including the use of the airport and its facilities.
7. Alterations. Tenant will make no alterations in or additions to the premises, including painting, without first obtaining the written consent of the County.
8. Conformance with Law. Tenant will not use or permit in the premises anything that would violate any County, city, state or federal law, code, ordinance or administrative rule.
9. Taxes. Assessment and License. If by reason of this lease the real property or hangar occupied by Tenant becomes taxable under the laws of the State of Oregon, the obligation to pay the same shall be added to the monthly rental obligation of Tenant and paid each month. The amount is to be included in a written notice given Tenant. By reason of Oregon Revised Statutes, the premises are, at present, exempt from property taxation.
10. Use of Premises. Tenant agrees that the premises shall be used for the storage of aircraft. Other items of personal property may not be stored and does otherwise violate this agreement. Tenant further agrees not to store any flammable or explosive liquids or solids within the premises. For the purpose of this agreement, "flammable or explosive liquids or solids" shall not apply to fuel or other flammable items contained within the tanks or normal portions of any airplane or automobile placed in said hangar. However, fueling of aircraft while in the hangar is strictly prohibited.
11. Assignments or Sublease. This may not be done.
12. Right of Entry. The County or County agents may use a passkey to enable them to examine the premises with reference to any emergency or to the general maintenance of premises. The County shall log any such entry at the airport manager's office during normal working hours.
13. Ground Maintenance. The Tenant shall maintain the grounds and premises in and around the rental area in a reasonably neat, clean and orderly condition.
14. Rules and Regulations. The Tenant agrees to abide by the Airport Rules and Regulations as they now exist or may hereafter be amended by the County
15. Corrective Action by County. In the event of damage by Tenant other than wear and tear, the County may make repairs or take any corrective action necessary for the protection of the property and operation of the lease. County shall first give Tenant 10 days' written notice and demand for correction except in case of emergency when no notice will be required. Tenant shall pay County for all costs and expenses incurred in curing the defaults or repairs upon presentation of a bill there for as additional rent.
16. Landlord's lien. When the Tenant's rent is in default, the County has a lien on all personal property owned by the Tenant or occupant legally responsible for rent, brought upon the Premises, to secure the payment of rent under this lease. The County may retain the personal property until the amount of rent in default is paid.

17. Termination. In the event of a default the lease may be terminated at the option of the County by written notice to Tenant. Whether or not the lease is terminated by the election of the County or otherwise, the County shall be entitled to recover damages from Tenant for the default, and the County may reenter, take possession of the Premises, and remove any persons or property by legal action or by self-help with the use of reasonable force and without liability for damages and without having accepted a surrender.

18. Holdover. If Tenant does not vacate the Premises at the time required, the county shall treat Tenant as a tenant from month to month, subject to all of the provisions of this lease at a rental rate equal to 150 percent of the rent last paid by Tenant during the original term.

19. Attorney Fees. In any action, arbitration, or suit (including any appeal there from) involving this lease agreement and the rights and obligations of the parties hereto, the prevailing party shall be entitled to receive reasonable attorney's fees and costs incurred in such arbitration or litigation, including attorney's fees on appeal, from the non-prevailing party.

20. Notice. Any notice required or permitted under this lease shall be given when actually delivered or 48 hours after deposited in United States mail as certified mail to the address given in this lease or to such other address as may be specified from time to time by either of the parties in writing.

21. Destruction of Premises. If the Premises are destroyed or damaged such that the cost of repair exceeds 10% of the value of the structure before the damage, either party may elect to terminate the lease as of the date of the damage or destruction by notice to the other in writing not more than 45 days following the date of damage. In such event all rights and obligations of the parties shall cease as of the date of termination, and Tenant shall be entitled to the reimbursement of any prepaid amounts paid by the Tenant and attributable to the anticipated term. If neither party elects to terminate nor the amount of damage or destruction does not exceed 10%, the County shall proceed to restore the Premises to substantially the same form as before the damage or destruction. Work shall proceed as soon as reasonably possible after the 45 day election period and shall proceed without interruption except for work stoppages on account of labor disputes and matters beyond the County's reasonable control.

IN WITNESS WHEREOF the parties affixed their signatures:

TENANT

BY: _____
Signature

Printed Name

Date

Mailing Address and Phone

Glossary of Terms



GLOSSARY OF AVIATION TERMS

The following glossary of aviation terms was compiled from a variety of sources and edited by David Miller, AICP for use in aviation planning projects.

Above Ground Level (AGL) – As measured above the ground; used to identify heights of built items (towers, etc.) on aeronautical charts in terms of absolute height above the ground.

Accelerate Stop Distance Available (ASDA) – The length of the takeoff run available plus the length of a stopway, when available.

Agricultural Aviation – The use of fixed-wing or rotor-wing aircraft in the aerial application of agricultural products (i.e., fertilizers, pesticides, etc.).

Air Cargo - All commercial air express and air freight with the exception of airmail and parcel post.

Air Carrier/Airline - All regularly scheduled airline activity performed by airlines certificated in accordance with Federal Aviation Regulations (FAR Part 121).

Air Taxi - Operations of aircraft "for hire" for specific trips, commonly referred to as aircraft available for charter (FAR Part 135).

Aircraft Approach Category - Grouping of aircraft based on the speed they are traveling when configured for landing (typically 1.3 times the aircraft stall speed in landing configuration). As a rule of thumb, slower approach speeds mean smaller airport dimensions and faster approach speeds require larger dimensions. The aircraft approach categories are:

- Category A - Speed less than 91 knots;
- Category B - Speed 91 knots or more but less than 121 knots
- Category C - Speed 121 knots or more but less than 141 knots
- Category D - Speed 141 knots or more but less than 166 knots
- Category E - Speed 166 knots or more

Aircraft Holding Area – An area typically located adjacent to a taxiway and runway end designed to accommodate aircraft prior to departure (for pre-takeoff engine checks, instrument flight plan clearances, etc.). Per FAA design standards, aircraft holding areas should be located outside the runway safety area (RSA) and obstacle free zone (OFZ) and aircraft located in the holding area should not

interfere with normal taxiway use (taxiway object free area). Sometimes referred to as holding bays or "elephant ear." Smaller areas (aircraft turnarounds) are used to facilitate aircraft movement on runways without exit taxiways or where back-taxiing is required.

Aircraft Operation - A landing or takeoff is one operation. An aircraft that takes off and then lands creates two aircraft operations.

Aircraft Owners and Pilots Association (AOPA) – A general aviation organization.

Aircraft Parking Line (APL) – A setback depicted on an ALP or other drawings that defines the minimum separation between aircraft parking areas and an adjacent runway or taxiway. The APL dimension reflects runway and taxiway clearances (object free area, etc.) and FAR Part 77 airspace surface clearance (transitional surface penetrations) for parked aircraft. Typically the tail height of the parked aircraft is used to determine adequate clearance for the transitional surface.

Airplane Design Group - A grouping of airplanes based on wingspan and tail height. As with Approach Category, the wider the wingspan, the bigger the aircraft is, the more room it takes up for operating on an airport. The Airplane Design Groups are:

- Group I: Up to but not including 49 feet or tail height up to but not including 20 feet.
- Group II: 49 feet up to but not including 79 feet or tail height from 20 up to but not including 30 feet.
- Group III: 79 feet up to but not including 118 feet or tail height from 30 up to but not including 45 feet.
- Group IV: 118 feet up to but not including 171 feet or tail height from 45 up to but not including 60 feet.
- Group V: 171 feet up to but not including 214 feet or tail height from 60 up to but not including 66 feet.
- Group VI: 214 feet up to but not including 262 feet or tail height from 66 up to but not including 80 feet.

Airport - A landing area regularly used by aircraft for receiving or discharging passengers or cargo, including heliports and seaplane bases.

Airport Beacon (also Rotating Beacon) – A visual navigational aid that displays alternating green and white flashes for a lighted land airport and white for an unlighted land airport.

Airports District Office (ADO) - The "local" office of the FAA that coordinates planning and construction projects. The Seattle ADO is responsible for airports located in Washington, Oregon, and Idaho.

Airport Improvement Program (AIP) - The funding program administered by the Federal Aviation Administration (FAA) with user fees which are dedicated to improvement of the national airport system. This program currently provides 95% of funding for eligible airport improvement projects. The local sponsor of the project (i.e., airport owner) provides the remaining 5% known as the "match."

Airport Layout Plan (ALP) - The FAA approved drawing which shows the existing and anticipated layout of an airport for the next 20 years. An ALP is prepared using FAA design standards. Future development projects must be consistent with the ALP to be eligible for FAA funding. ALP drawings are typically updated every 7 to 10 years to reflect significant changes, or as needed.

Airport Reference Code (ARC) - An FAA airport coding system that is defined based on the critical or design aircraft for an airport or individual runway. The ARC is an alpha-numeric code based on aircraft approach speed and airplane wingspan (see definitions in glossary). The ARC is used to determine the appropriate design standards for runways, taxiways, and other associated facilities. An airport designed to accommodate a Piper Cub (an A-I aircraft) requires less room than an airport designed to accommodate a Boeing 747 (a D-V aircraft).

Airport Reference Point (ARP) – The approximate mid-point of an airfield that is designated as the official airport location.

Aircraft Rescue and Fire Fighting (ARFF) - On airport emergency response required for certificated commercial service airports (see FAR Part 139).

Airside – The portion of an airport that includes aircraft movement areas (runways, taxiways, etc.)

Airspace - The area above the ground in which aircraft travel. It is divided into enroute and terminal airspace, with corridors, routes, and restricted zones established for the control and safety of air traffic.

Alternate Airport – An airport that is available for landing when the intended airport becomes unavailable. Required for instrument flight planning in the event that weather conditions at destination

airport fall below approach minimums (cloud ceiling or visibility).

Annual Service Volume (ASV) - An estimate of how many aircraft operations an airport can handle based upon the number, type and configuration of runways, aircraft mix (large vs. small, etc), instrumentation, and weather conditions with a "reasonable" amount of delay. ASV is a primary planning standard used to determine when a runway (or an airport) is nearing its capacity, and may require new runways or taxiways. As operations levels approach ASV, the amount of delay per operation increases; once ASV is exceeded, "excessive" delay generally exists.

Approach End of Runway - The end of the runway used for landing. Pilots generally land into the wind and choose a runway end that best aligns with the wind.

Approach Light System (ALS) – Configurations of lights positioned symmetrically beyond the runway threshold and the extended runway centerline. The ALS visually augments the electronic navigational aids for the runway.

Approach Surface (Also FAR Part 77 Approach) - An imaginary (invisible) surface that rises and extends from the ends of a runway to provide an unobstructed path for aircraft to land or take off. The size and slope of the approach surface vary depending upon the size of aircraft that are accommodated and the approach capabilities (visual or instrument).

Apron - An area on an airport designated for the parking, loading, fueling, or servicing of aircraft (also referred to as tarmac and ramp).

Aqueous Film Forming Foam (AFFF) – A primary fire fighting agent that is used to create a blanket that smothers flame or prevents ignition (fuel spills, etc.). AFFF is also used to foam runways during emergency landings.

Asphalt or Asphaltic Concrete (AC) – Flexible oil-based pavement used for airfield facilities (runways, taxiways, aircraft parking apron, etc.); also commonly used for road construction.

Automated Surface Observation System (ASOS) and Automated Weather Observation System (AWOS) – Automated observation systems providing continuous on-site weather data, designed to support aviation activities and weather forecasting.

AVGAS – Highly refined gasoline used in airplanes with piston engines. The current grade of AVGAS available is 100 Octane Low Lead (100LL).

Avigation Easement - A grant of property interest (airspace) over land to ensure unobstructed flight. Typically acquired by airport owners to protect the integrity of runway approaches. Restrictions typically include maximum height limitations for natural (trees, etc.) or built items, but may also address permitted land uses by the owner of the underlying land that are compatible with airport operations.

Back-Taxiing – The practice of aircraft taxiing on a runway before takeoff or after landing, normally, in the opposite direction of the runway's traffic pattern. Back-taxiing is generally required on runways without taxiway access to both runway ends.

Based Aircraft - Aircraft permanently stationed at an airport usually through some form of agreement with the airport owner. Used as a measure of activity at an airport.

Capacity - A measure of the maximum number of aircraft operations that can be accommodated on the runways of an airport in an hour.

Ceiling – The height above the ground or water to base of the lowest cloud layers covering more than 50 percent of the sky.

Charter - Operations of aircraft "for hire" for specific trips, commonly referred to an aircraft available for charter.

Circle to Land or Circling Approach – An instrument approach procedure that allows pilots to "circle" the airfield to land on any authorized runway once visual contact with the runway environment is established and maintained throughout the procedure.

Commercial Service Airport - An airport designed and constructed to serve scheduled or unscheduled commercial airlines. Commercial service airports are certified under FAR Part 139.

Common Traffic Advisory Frequency (CTAF) – A frequency used by pilots to communicate and obtain airport advisories at an uncontrolled airport.

Complimentary Fire Extinguishing Agent – Fire extinguishing agents that provide rapid fire suppression, which may be used in conjunction with principal agents (e.g., foam). Examples include sodium-based and potassium-based dry chemicals, Halocarbons, and Carbon dioxide. Also recommended for electrical and metal fires where water-based foams are not used. Complimentary agents are paired with principal agents based on their compatibility of use.

Conical Surface - One of the "FAR Part 77 "Imaginary" Surfaces. The conical surface extends outward and upward from the edge of the horizontal surface at a slope of 20:1 to a horizontal distance of 4,000 feet.

Controlling Obstruction – The highest obstruction relative to a defined plane of airspace (i.e., approach surface, etc.).

Critical Aircraft - Aircraft which controls one or more design items based on wingspan, approach speed and/or maximum certificated take off weight. The same aircraft may not be critical to all design items (i.e., runway length, pavement strength, etc.). Also referred to as "design aircraft."

Crosswind - Wind direction that is not parallel to the runway or the path of an aircraft.

Crosswind Runway – An additional runway (secondary, tertiary, etc.) that provides wind coverage not adequately provided by the primary runway. Crosswind runways are generally eligible for FAA funding when a primary runway accommodates less than 95 percent of documented wind conditions (see wind rose).

Decision Height (DH) – For precision instrument approaches, the height (typically in feet or meters above runway end touchdown zone elevation) at which a decision to land or execute a missed approach must be made by the pilot.

Declared Distances – The distances the airport owner declares available for airplane operations (e.g., takeoff run, takeoff distance, accelerate-stop distance, and landing distance). In cases where runways meet all FAA design criteria without modification, declared distances equal the total runway length. In cases where any declared distances are less than full runway length, the dimension should be published in the FAA Airport/Facility Directory (A/FD).

Departure Surface – A surface that extends upward from the departure end of an instrument runway that should be free of any obstacle penetrations. For instrument runways other than air carrier, the slope is 40:1, extending 10,200 feet from the runway end. Air carrier runways have a similar surface designed for one-engine inoperative conditions with a slope of 62.5: 1.

Design Aircraft - Aircraft which controls one or more design items based on wingspan, approach speed and/or maximum certificated takeoff weight. The same aircraft may not represent the design aircraft for all design items (i.e., runway length, pavement strength, etc.). Also referred to as "critical aircraft."

Displaced Threshold – A landing threshold located at a point other than on the runway end, usually provided to mitigate close-in obstructions to runway approaches for landing aircraft. The area between the runway end and the displaced threshold accommodates aircraft taxi and takeoff, but not landing.

Distance Measuring Equipment (DME) – Equipment that provides electronic distance information to enroute or approaching aircraft from a land-based transponder that sends and receives pulses of fixed duration and separation. The ground stations are typically co-located with VORs, but they can also be co-located with an ILS.

Distance Remaining Signs – Airfield signs that indicate to pilots the amount of useable runway remaining in 1,000-foot increments. The signs are located along the side of the runway, visible for each direction of runway operation.

DNL - Day-night sound levels, a mathematical method of measuring noise exposure based on cumulative, rather than single event impacts. Night time operations (10pm to 7AM) are assessed a noise penalty to reflect the increased noise sensitivity that exists during normal hours of rest. Previously referred to as Ldn.

Easement – An agreement that provides use or access of land or airspace (see aviation easement) in exchange for compensation.

Enplanements - Domestic, territorial, and international revenue passengers who board an aircraft in the states in scheduled and non-scheduled service of aircraft in intrastate, interstate, and foreign commerce and includes intransit passengers (passengers on board international flights that transit an airport in the US for non-traffic purposes).

Entitlements - Distribution of Airport Improvement Plan (AIP) funds by FAA from the Airport & Airways Trust Fund to commercial service airport sponsors based on passenger enplanements or cargo volumes and smaller fixed amounts for general aviation airports (Non-Primary Entitlements).

Experimental Aircraft – See homebuilt aircraft.

Federal Aviation Administration (FAA) - The FAA is the branch of the U.S. Department of Transportation that is responsible for the development of airports and air navigation systems.

FAR Part 77 - Federal Air Regulations (FAR) which establish standards for determining obstructions in navigable airspace and defines imaginary (airspace) surfaces for airports and heliports that are designed to prevent hazards to air navigation. FAR Part 77

surfaces include approach, primary, transitional, horizontal, and conical surfaces. The dimensions of surfaces can vary with the runway classification (large or small airplanes) and approach type of each runway end (visual, nonprecision instrument, precision instrument). The slope of an approach surface also varies by approach type and runway classification. FAR Part 77 also applies to helicopter landing areas.

FAR Part 139 - Federal Aviation Regulations which establish standards for airports with scheduled passenger commercial air service. Airports accommodating scheduled passenger service with aircraft more than 9 passenger seats must be certified as a "Part 139" airport. Airports that are not certified under Part 139 may accommodate scheduled commercial passenger service with aircraft having 9 passenger seats or less.

Final Approach Fix (FAF) – The fix (location) from which the final instrument approach to an airport is executed; also identifies beginning of final approach segment.

Final Approach Point (FAP) – For non-precision instrument approaches, the point at which an aircraft is established inbound for the approach and where the final descent may begin.

Fixed Base Operator (FBO) - An individual or company located at an airport providing aviation services. Sometimes further defined as a "full service" FBO or a limited service. Full service FBOs typically provide a broad range of services (flight instruction, aircraft rental, charter, fueling, repair, etc) where a limited service FBO provides only one or two services (such as fueling, flight instruction or repair).

Fixed Wing - A plane with one or more "fixed wings," as opposed to a helicopter that utilizes a rotary wing.

Flexible Pavement – Typically constructed with an asphalt surface course and one or more layers of base and subbase courses that rest on a subgrade layer.

Flight Service Station (FSS) – FAA or contracted service for pilots to contact (on the ground or in the air) to get weather and airport information. Flight plans are also filed with the FSS.

General Aviation (GA) - All civil (non-military) aviation operations other than scheduled air services and non-scheduled air transport operations for hire.

Glide Slope (GS) – For precision instrument approaches, such as an instrument landing system (ILS), the component that provides electronic vertical guidance to aircraft.

Global Positioning System (GPS) - GPS is a system of navigating which uses multiple satellites to establish the location and altitude of an aircraft with a high degree of accuracy. GPS supports both enroute flight and instrument approach procedures.

Helicopter Landing Pad (Helipad) – A designated landing area for rotor wing aircraft. Requires protected FAR Part 77 imaginary surfaces, as defined for heliports (FAR Part 77.29).

Helicopter Parking Area – A designated area for rotor wing aircraft parking that is typically accessed via hover-taxi or ground taxiing from a designated landing area (e.g., helipad or runway-taxiway system). If not used as a designated landing area, helicopter parking pads do not require dedicated FAR Part 77 imaginary surfaces.

Heliport – A designated helicopter landing facility (as defined by FAR Part 77).

Height Above Airport (HAA) – The height of the published minimum descent altitude (MDA) above the published airport elevation. This is normally published in conjunction with circling minimums.

High Intensity Runway Lights (HIRL) - High intensity (i.e., very bright) lights are used on instrument runways to help pilots to see the runway when visibility is poor.

High Speed (Taxiway) Exit – An acute-angled exit taxiway extending from a runway to an adjacent parallel taxiway which allows landing aircraft to exit the runway at a higher rate of speed than is possible with standard (90-degree) exit taxiways.

Hold Line (Aircraft Hold Line) – Pavement markings located on taxiways that connect to runways, indicating where aircraft should stop before entering runway environment. At controlled airports, air traffic control clearance is required to proceed beyond a hold line. At uncontrolled airports, pilots are responsible for ensuring that a runway is clear prior to accessing for takeoff.

Hold/Holding Procedure – A defined maneuver in controlled airspace that allows aircraft to circle above a fixed point (often over a navigational aid or GPS waypoint) and altitude while awaiting further clearance from air traffic control.

Home Built Aircraft - An aircraft built by an amateur from a kit or specific design (not an FAA certified factory built aircraft). The aircraft built under the supervision of an FAA-licensed mechanic and are certified by FAA as “Experimental.”

Horizontal Surface - One of the FAR Part 77 Imaginary (invisible) Surfaces. The horizontal surface is an imaginary flat surface 150 feet above

the established airport elevation (typically the highest point on the airfield). Its perimeter is constructed by swinging arcs (circles) from each runway end and connecting the arcs with straight lines. The oval-shaped horizontal surface connects to other Part 77 surfaces extending upward from the runway and also beyond its perimeter.

Initial Approach Point/Fix (IAP/IAF) – For instrument approaches, a designated point where an aircraft may begin the approach procedure.

Instrument Approach Procedure (IAP) – A series of defined maneuvers designed to enable the safe transition between enroute instrument flight and landing under instrument flight conditions at a particular airport or heliport. IAPs define specific requirements for aircraft altitude, course, and missed approach procedures. See precision or nonprecision instrument approach.

Instrument Flight Rules (IFR) - IFR refers to the set of rules pilots must follow when they are flying in bad weather. Pilots are required to follow these rules when operating in controlled airspace with visibility (ability to see in front of themselves) of less than three miles and/or ceiling (a layer of clouds) lower than 1,000 feet.

Instrument Landing System (ILS) - An ILS is an electronic navigational aid system that guides aircraft for a landing in bad weather. Classified as a precision instrument approach, it is designed to provide a precise approach path for course alignment and vertical descent of aircraft. Generally consists of a localizer, glide slope, outer marker, and middle marker. ILS runways are generally equipped with an approach lighting system (ALS) to maximize approach capabilities. A Category I ILS allows aircraft to descend as low as 200 feet above runway elevation with ½ mile visibility.

Instrument Meteorological Conditions (IMC) - Meteorological conditions expressed in terms of visibility, distance from clouds, and ceiling less than minima specified for visual meteorological conditions.

Instrument Runway - A runway equipped with electronic navigational aids that accommodate straight-in precision or nonprecision instrument approaches.

Itinerant Operation - All aircraft operations at an airport other than local, i.e., flights that come in from another airport.

Jet Fuel – Highly refined grade of kerosene used by turbine engine aircraft. Jet-A is currently the common commercial grade of jet fuel.

Knot (Nautical Mile) – one nautical mile = 1.152 statute miles.

Landing Area - That part of the movement area intended for the landing and takeoff of aircraft.

Landing Distance Available (LDA) – The length of runway which is available and suitable for the ground run of an airplane landing.

Landside – The portion of an airport that includes aircraft parking areas, fueling, hangars, airport terminal area facilities, vehicle parking and other associated facilities.

Larger than Utility Runway – As defined under FAR Part 77, a runway designed and constructed to serve large planes (aircraft with maximum takeoff weights greater than 12,500 pounds).

Ldn – Noise measurement metric (see DNL)

Left Traffic – A term used to describe which side of a runway the airport traffic pattern is located. Left traffic indicates that the runway will be to the pilot's left when in the traffic pattern. Left traffic is standard unless otherwise noted in facility directories at a particular airport.

Large Aircraft - An aircraft with a maximum takeoff weight more than 12,500 lbs.

Light Sport Aircraft (LSA) – A basic aircraft certified by FAA that can be flown by pilots with limited flight training (Sport Pilot certificates), but also provide lower cost access to basic aircraft for all pilot levels. LSA design limits include maximum a gross takeoff weight of 1,320 pounds (land planes) and a maximum of two seats.

Local Area Augmentation System (LAAS) – GPS-based instrument approach that utilizes ground-based systems to augment satellite coverage to provide vertical (glideslope) and horizontal (course) guidance.

Local Operation - Aircraft operation in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport.

Localizer – The component of an instrument landing system (ILS) that provides electronic lateral (course) guidance to aircraft. Also used to support non-precision localizer approaches.

LORAN C - A navigation system using land based radio signals, which indicates position and ground speed, but not elevation. (See GPS)

Localizer Performance with Vertical Guidance (LPV) – Satellite navigation (SATNAV) based GPS approaches providing “near category I” precision approach capabilities with course and vertical guidance. LPV approaches are expected to eventually replace traditional step-down, VOR and NDB procedures by providing a constant, ILS glideslope-like descent path. LPV approaches use high-accuracy WAAS signals, which allow narrower glideslope and approach centerline obstacle clearance areas.

Magnetic Declination – Also called magnetic variation, is the angle between magnetic north and true north. Declination is considered positive east of true north and negative when west. Magnetic declination changes over time and with location. Runway end numbers, which reflect the magnetic heading/alignment (within 5 degrees +/-) occasionally require change due to declination.

MALS - **Medium-intensity Approach Lighting System with Runway alignment indicator lights.** An approach lighting system (ALS) which provides visual guidance to landing aircraft.

Medevac - Fixed wing or rotor-wing aircraft used to transport critical medical patients. These aircraft are equipped to provide life support during transport.

Medium Intensity Runway Lights (MIRL) - Runway edge lights which are not as intense as HIRLs (high intensity runway lights). Typical at medium and smaller airports which do not have sophisticated instrument landing systems.

Microwave Landing System (MLS) - An instrument landing system operating in the microwave spectrum, which provides lateral and vertical guidance to aircraft with compatible equipment. Originally developed as the “next-generation” replacement for the ILS, the FAA discontinued the MLS program in favor of GPS-based systems.

Minimum Descent Altitude (MDA) – The lowest altitude in a nonprecision instrument approach that an aircraft may descend without establishing visual contact with the runway or airport environment.

Minimums - Weather condition requirements established for a particular operation or type of operation.

Missed Approach Procedure – A prescribed maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. Usually requires aircraft to climb from the airport environment to a specific holding location where another approach can be executed or the aircraft can divert to another airport.

Missed Approach Point (MAP) – The defined location in a nonprecision instrument approach where the procedure must be terminated if the pilot has not visually established the runway or airport environment.

Movement Area - The runways, taxiways and other areas of the airport used for taxiing, takeoff and landing of aircraft, i.e., for aircraft movement.

MSL - Elevation above Mean Sea Level.

National Plan of Integrated Airport Systems (NPIAS). The NPIAS is the federal airport classification system that includes public use airports that meet specific eligibility and activity criteria. A "NPIAS designation" is required for an airport to be eligible to receive FAA funding for airport projects.

Navigational Aid (Navaid) - Any visual or electronic device that helps a pilot navigate. Can be for use to land at an airport or for traveling from point A to point B.

Noise Contours – Continuous lines of equal noise level usually drawn around a noise source, such as runway, highway or railway. The lines are generally plotted in 5-decibel increments, with higher noise levels located nearer the noise source, and lesser exposure levels extending away from the source.

Non-directional Beacon (NDB) - Non-Directional Beacon which transmits a signal on which a pilot may "home" using equipment installed in the aircraft.

Non-Precision Instrument (NPI) Approach - A non-precision instrument approach provides horizontal (course) guidance to pilots for landing. NPI approaches often involve a series of "step down" sequences where aircraft descend in increments (based on terrain clearance), rather than following a continuous glide path. The pilot is responsible for maintaining altitude control between approach segments since no "vertical" guidance is provided.

Obstacle Clearance Surface (OCS) – As defined by FAA, an approach surface that is used in conjunction with alternative threshold siting/clearing criteria to mitigate obstructions within runway approach surfaces. Dimensions, slope and placement depend on runway type and approach capabilities. Also known as Obstacle Clearance Approach (OCA).

Obstruction - An object (tree, house, road, phone pole, etc) that penetrates an imaginary surface described in FAR Part 77.

Obstruction Chart (OC) - A chart that depicts surveyed obstructions that penetrate an FAR Part

77 imaginary surface surrounding an airport. OC charts are developed by the National Ocean Service (NOS) based on a comprehensive survey that provides detailed location (latitude/longitude coordinates) and elevation data in addition to critical airfield data.

Parallel Taxiway – A taxiway that is aligned parallel to a runway, with connecting taxiways to allow efficient movement of aircraft between the runway and taxiway. The parallel taxiway effectively separates taxiing aircraft from arriving and departing aircraft located on the runway. Used to increase runway capacity and improve safety.

Passenger Facility Charge (PFC) – A user fee charged by commercial service airports for enplaning passengers. Airports must apply to the FAA and meet certain requirements in order to impose a PFC.

Pavement Condition Index (PCI) – A scale of 0-100 that is used to rate airfield pavements ranging from failed to excellent based on visual inspection. Future PCIs can be predicted based on pavement type, age, condition and use as part of a pavement maintenance program.

Pavement Strength or Weight Bearing Capacity – The design limits of airfield pavement expressed in maximum aircraft weight for specific and landing gear configurations (i.e., single wheel, dual wheel, etc.) Small general aviation airport pavements are typically designed to accommodate aircraft weighing up to 12,500 pounds with a single-wheel landing gear.

Portland Cement Concrete (PCC) – Rigid pavement used for airfield facilities (runways, taxiways, aircraft parking, helipads, etc.).

Precision Approach Path Indicator (PAPI) - A system of lights located by the approach end of a runway that provides visual approach slope guidance to aircraft during approach to landing. The lights typically show green if a pilot is on the correct flight path, and turn red if a pilot is too low.

Precision Instrument Runway (PIR) - A runway equipped with a "precision" instrument approach (descent and course guidance), which allows aircraft to land in bad weather.

Precision Instrument Approach – An instrument approach that provides electronic lateral (course) and vertical (descent) guidance to a runway end. A nonprecision instrument approach typically provides only course guidance and the pilot is responsible for managing defined altitude assignments at designated points within the approach.

Primary Runway - That runway which provides the best wind coverage, etc., and receives the most usage at the airport.

Primary Surface - One of the FAR Part 77 Imaginary Surfaces, the primary surface is centered on top of the runway and extends 200 feet beyond each end. The width is from 250' to 1,000' wide depending upon the type of airplanes using the runway.

Principal Fire Extinguishing Agent - Fire extinguishing agents that provide permanent control of fire through a fire-smothering foam blanket. Examples include protein foam, aqueous film forming foam and fluoroprotein foam.

Procedure Turn (PT) - A maneuver in which a turn is made away from a designated track followed by a turn in an opposite direction to permit an aircraft to intercept the track in the opposite direction (usually inbound).

Area Navigation (RNAV) - is a method of instrument flight navigation that allows an aircraft to choose a course within a network of navigation beacons rather than navigating directly to and from the beacons. Originally developed in the 1960, RNAV elements are now being integrated into GPS-based navigation.

Relocated Threshold - A runway threshold (takeoff and landing point) that is located at a point other than the (original) runway end. Usually provided to mitigate nonstandard runway safety area (RSA) dimensions beyond a runway end. When a runway threshold is relocated, the published length of the runway is reduced and the pavement between the relocated threshold and to the original end of the runway is not available for aircraft takeoff or landing. This pavement is typically marked as taxiway, marked as unusable, or is removed.

Required Navigation Performance (RNP) - A type of performance-based navigation system that allows an aircraft to fly a specific path between two 3-dimensionally defined points in space. RNP approaches require on-board performance monitoring and alerting. RNP also refers to the level of performance required for a specific procedure or a specific block of airspace. For example, an RNP of .3 means the aircraft navigation system must be able to calculate its position to within a circle with a radius of 3 tenths of a nautical mile. RNP approaches have been designed with RNP values down to .1, which allow aircraft to follow precise 3 dimensional curved flight paths through congested airspace, around noise sensitive areas, or through difficult terrain.

Rigid Pavement - Typically constructed of Portland cement concrete (PCC), consisting of a slab placed on a prepared layer of imported materials.

Rotorcraft - A helicopter.

Runway - A defined area intended to accommodate aircraft takeoff and landing. Runways may be paved (asphalt or concrete) or unpaved (gravel, turf, dirt, etc.), depending on use. Water runways are defined takeoff and landing areas for use by seaplanes.

Runway Bearing - The angle of a runway centerline expressed in degrees (east or west) relative to true north.

Runway Designation Numbers - Numbers painted on the ends of a runway indicating runway orientation (in degrees) relative to magnetic north. "20" = 200 degrees magnetic, which means that the final approach for Runway 20 is approximately 200 degrees (+/- 5 degrees).

Runway End Identifier Lights (REILs) - Two high-intensity sequenced strobe lights that help pilots identify a runway end during landing in darkness or poor visibility.

Runway Object Free Area (OFA) - A defined area surrounding a runway that should be free of any obstructions that could interfere with aircraft operations. The dimensions for the OFA increase for runways accommodating larger or faster aircraft.

Runway Protection Zone (RPZ) - A trapezoid-shaped area located beyond the end of a runway that is intended to be clear of people or built items. The geometry of the RPZ often coincides with the inner portion of the runway approach surface. However, unlike the approach surface, the RPZ is a defined area on the ground that does not have a vertical slope component for obstruction clearance. The size of the RPZ increases as runway approach capabilities or aircraft approach speeds increase. Previously defined as "clear zone."

Runway Safety Area (RSA) - A symmetrical ground area extending along the sides and beyond the ends of a runway that is intended to accommodate inadvertent aircraft passage without causing damage. The dimensions for the RSA increase for runways accommodating larger or faster aircraft. FAA standards include surface condition (compaction, etc.) and absence of obstructions. Any items that must be located within an RSA because of their function (runway lights, airfield signage, wind cones, etc.) must be frangible (breakable) to avoid significant aircraft damage.

Segmented Circle - A system of visual indicators designed to show a pilot in the air the direction of the traffic pattern at that airport.

Small Aircraft - An aircraft that weighs 12,500 lbs or less.

Straight-In Approach – An instrument approach that directs aircraft to a specific runway end.

Statute Mile – 5,280 feet (a nautical mile = 6,080 feet)

Stop and Go – An aircraft operation where the aircraft lands and comes to a full stop on the runway before takeoff is initiated.

T-Hangar – A rectangular aircraft storage hangar with several interlocking "T" units that minimizes building per storage unit. Usually two-sided with either bi-fold or sliding doors.

Takeoff Distance Available (TODA) – the length of the takeoff run available plus the length of clearway, if available.

Takeoff Run Available (TORA) – the length of runway available and suitable for the ground run of aircraft when taking off.

Taxilane – A defined path used by aircraft to move within aircraft parking apron, hangar areas and other landside facilities.

Taxiway – A defined path used by aircraft to move from one point to another on an airport.

Threshold – The beginning of that portion of a runway that is useable for landing.

Threshold Lights – Components of runway edge lighting system located at the ends of runways and at displaced thresholds. Threshold lights typically have split lenses (green/red) that identify the beginning and ends of usable runway.

Through-the-Fence – Term used to describe how off-airport aviation users (private airparks, hangars, etc.) access an airport "through-the-fence," rather than having facilities located on airport property.

Tiedown - A place where an aircraft is parked and "tied down." Surface can be grass, gravel or paved. Tiedown anchors may be permanently installed or temporary.

Touch and Go – An aircraft operation involving a landing followed by a takeoff without the aircraft coming to a full stop or exiting the runway.

Traffic Pattern - The flow of traffic that is prescribed for aircraft landing and taking off from an airport. Traffic patterns are typically rectangular in shape, with upwind, crosswind, base and downwind legs and a final approach surrounding a runway.

Traffic Pattern Altitude - The established altitude for a runway traffic pattern, typically 800 to 1,000 feet above ground level (AGL).

Transitional Surfaces - One of the FAR Part 77 Imaginary Surfaces, the transitional surface extend outward and upward at right angles to the runway centerline and the extended runway centerline at a slope of 7:1 from the sides of the primary surface and from the sides of the approach surfaces.

Universal Communications (UNICOM) is an air-ground communication facility operated by a private agency to provide advisory service at uncontrolled airports.

Utility Runway – As defined under FAR Part 77, a runway designed and constructed to serve small planes (aircraft with maximum takeoff weights of 12,500 pounds or less).

Vertical Navigation (VNAV) – Vertical navigation descent data or descent path, typically associated with published GPS instrument approaches. The use of any VNAV approach technique requires operator approval, certified VNAV-capable avionics, and flight crew training.

VOR - Very High Frequency Omnidirectional Range – A ground based electronic navigational aid that transmits radials in all directions in the VHF frequency spectrum. The VOR provides azimuth guidance to aircraft by reception of radio signals.

VORTAC – VOR collocated with ultra high frequency tactical air navigation (TACAN)

Visual Approach Slope Indicator (VASI) - A system of lights located by the approach end of a runway which provides visual approach slope guidance to aircraft during approach to landing. The lights typically show some combination of green and white if a pilot is on the correct flight path, and turn red if a pilot is too low.

Visual Flight Rules (VFR) - Rules that govern the procedures to conducting flight under visual conditions. The term is also used in the US to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

Visual Guidance Indicator (VGI) – Equipment designed to provide visual guidance for pilots for landing through the use of different color light beams. Visual Approach Slope Indicators (VASI) and Precision Approach Path Indicators (PAPI) defined above are examples.

Waypoint – A specified geographical location used to define an area navigation route or the flight path of an aircraft ility, employing area navigation.

Wide Area Augmentation System (WAAS) – GPS-based instrument approach that can provide both

vertical (glideslope) and horizontal (course) guidance. WAAS-GPS approaches are able to provide approach minimums nearly comparable to a Category I Instrument Landing System (ILS).

Wind Rose - A diagram that depicts observed wind data direction and speed on a 360-degree compass rose. Existing or planned proposed runway alignments are overlain to determine wind coverage levels based on the crosswind limits of the design aircraft.

Wind Cone – A device located near landing areas used by pilots to verify wind direction and velocity. Usually manufactured with brightly colored fabric and may be lighted for nighttime visibility. Also referred to as “wind sock.”

List of Acronyms

AC – Advisory Circular	TSA- Taxiway Safety Area
AC – Asphaltic Concrete	TSA – Transportation Security Administration
ADG – Airplane Design Group	TODA – Takeoff Distance Available
ALP – Airport Layout Plan	TORA – Takeoff Run Available
ALS – Approach Lighting System	UGA – Urban Growth Area
APL – Aircraft Parking Line	UGB – Urban Growth Boundary
ARC – Airport Reference Code	UNICOM – Universal Communications
ARP - Airport Reference Point	VASI – Visual Approach Slope Indicator
ASDA – Accelerate-Stop Distance Available	VFR – Visual Flight Rules
ASV – Annual Service Volume	VGI - Visual Guidance Indicators
ATCT – Air Traffic Control Tower	
ASOS – Automated Surface Observation System	
AWOS – Automated Weather Observation System	
BRL – Building Restriction Line	
CTAF – Common Traffic Advisory Frequency	
FAA – Federal Aviation Administration	
FAR – Federal Air Regulation	
FBO – Fixed Base Operator	
GPS – Global Positioning System	
HIRL – High Intensity Runway Lighting	
IFR – Instrument Flight Rules	
IMC – Instrument Meteorological Conditions	
LDA – Landing Distance Available	
LDA - Localizer Directional Aid	
LIRL – Low Intensity Runway Lighting	
MIRL – Medium Intensity Runway Lighting	
MITL - Medium Intensity Taxiway Lighting	
NAVAID – Navigational Aid	
OCS – Obstacle Clearance Surface	
OFA – Object Free Area	
OFZ – Obstacle Free Zone	
PAPI – Precision Approach Path Indicator	
PCC – Portland Cement Concrete	
PCI – Pavement Condition Index	
REIL – Runway End Identifier Lights	
RPZ – Runway Protection Zone	
RSA – Runway Safety Area	
RVZ – Runway Visibility Zone	



L E A D I N G T H R O U G H E F F E C T I V E S O L U T I O N S

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