LEXINGTON AIRPORT (9S9)
AIRPORT LAYOUT PLAN REPORT
2000-2020

FINAL REPORT

March 2001

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2000-2020

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Morrow County, Oregon

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Acknowledgements

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Chapter One
Introduction,
Conclusions and Recommendations

The preparation of the Lexington Airport Layout Plan Report and supporting documentation has been undertaken by Morrow County and the Oregon Department of Aviation (DOA) to examine the existing configuration of the airport and to address current and long-term airport needs.

Previous airport planning documents include the 1983 Airport Layout Plan Report and Environmental Assessment (Ted Soliday, Aviation Consultant). The 1983 drawings were prepared prior to the construction of the current Runway 8-26, which was completed in 1988. When constructed, it appears that the runway was shifted approximately 200 feet west. The shift provided approximately 200 feet of treated extended runway safety area beyond the end of Runway 26. The 1983 Airport Layout Plan drawings do not reflect the actual configuration of the runway as constructed.

This project provides updated ALP drawings that reflect current conditions and facilities. The study also examines prior recommendations and evaluates changes, which may affect development of aviation facilities at Lexington. The adoption of this plan will supersede previous planning documents for the airport.

Through its comprehensive planning and transportation planning, Morrow County has recognized the significant role played by the airport in the overall transportation system and economic base for the community and the county. In its role as a general aviation airport, Lexington Airport serves a wide range of users, including local residents, business and agricultural users, and visitors to the Lexington and other communities in Morrow County. The airport also has a significant public service role, as both a primary medevac site and as a key access point in emergency response planning for the Umatilla Army Depot.

The primary objective of the Airport Layout Plan Report is to identify current and future facility needs and improvements necessary to maintain a safe, efficient, economical, and environmentally acceptable air transportation facility.

The Airport Layout Plan Report:

- *Examines the recommended improvements depicted on the 1983* ***Airport Layout Plan*** *and described in the 1983* ***Airport Layout Plan Report;***
- *Determines current and future aviation activity and facility requirements;*
- *Examines previous recommendations and development alternatives as appropriate to meet the current and projected airport facility needs;*
- *Updates the airport layout plan, airspace plan, and land-use plan for the airport and its surrounding areas; and*
- *Schedules priorities of improvements and estimates development costs.*

The review and approval of the Airport Layout Plan drawing by the Federal Aviation Administration (FAA) will enable the County to apply for federal Airport Improvement Program (AIP) grants for eligible facility improvement projects. AIP funds are an essential source of funding for airport improvement projects at community general aviation airports. This plan was funded with a 90 percent grant from the Federal Aviation Administration, with the remaining 10 percent match provided by Morrow County.

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 3-41-4100-08) 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.

PUBLIC INVOLVEMENT

The public involvement element of the planning process provided opportunities for all interested individuals, organizations, or groups to participate in the project. At the project kickoff, a Joint Planning Conference (JPC) was held in which all parties with specific interest in the airport were invited to attend. The purpose of the JPC was to identify any concerns or issues, which needed to be addressed as part of this airport layout plan update. The input provided by Morrow County public works staff, Morrow County planning staff, City of Lexington representatives, airport users, local citizens, and a variety of state and federal government agencies, provided valuable information that was used in formulating the plan. During the study, draft working papers were prepared and coordination meetings were held with airport users and the general public. Through this coordination process, a preferred development alternative was selected for integration into the airport layout plan. The Draft Final Report contained the entire work effort and reflected input provided by all participants in the planning process. Following a final review period, public and agency comments were integrated into the Final Airport Layout Plan Report and drawing set.

AIRPORT LAYOUT PLAN REPORT CONCLUSIONS

1. Lexington Airport is owned, operated, and maintained by Morrow County. The airport accommodates a broad range of general aviation users, including agricultural and business aviation and medical evacuation (MEDEVAC) flights for Lexington and several other communities located within its service area.

2. Lexington Airport is categorized as a "Community General Aviation Airport" in the Oregon Aviation Plan and is included in Oregon's core system of airports, which denotes the significance of the airport to the state aviation system.

3. Lexington Airport has a single paved and lighted runway (4,150 feet by 75 feet) with a partial-length parallel taxiway, an aircraft parking apron, and an aircraft hangar area. The airport facilities are designed to meet FAA Airport Design Group (ADG) II standards.

4. The critical aircraft type identified for the airport is a turbine powered agricultural aircraft (Air Tractor), two of which are used by a local aerial applicator. This aircraft weighs less than 12,500 pounds and is included in ADG II and Approach Category A. This aircraft represents the most demanding aircraft based on physical characteristics (wingspan, etc.). However, a variety of light aircraft, including piston and turboprop multi-engine and business jet aircraft, included in ADG I

and II, require longer runway lengths than the Air Tractor. Based on the combined needs of these aircraft, airport reference code B-II is recommended for Lexington Airport.

5. Lexington Airport had approximately 10 based aircraft an estimated 4,500 operations in 2000.

6. Lexington Airport currently operates under visual flight rules (VFR) conditions (day or night) only and does not have instrument approach capabilities.

7. The airport land area is zoned Exclusive Farm Use (EFU) by Morrow County and is located outside the urban growth boundary (UGB) for the City of Lexington. An Airport Overlay Zone is described in the Morrow County zoning ordinance, but does not appear on any county or city mapping. Much of the land surrounding the airport is zoned Exclusive Farm Use (EFU) by Morrow County.

AIRPORT LAYOUT PLAN REPORT RECOMMENDATIONS

The recommendations of previous planning efforts were examined and revalidated or modified as appropriate, based on current considerations and design standards.

1. The airport should maintain FAA Airplane Design Group (ADG) II dimensional standards and a weight bearing capacity of 12,500 pounds (single wheel) for airfield pavement.

2. Conduct a schedule of routine pavement maintenance (vegetation control, crack filling, fog seals, patching etc) on all runway, taxiway and apron pavements, including participation in the Oregon Aeronautics Pavement Maintenance Program.

3. Conduct periodic slurry seals and asphalt resurfacing on runway, taxiway and apron pavements in conjunction with other FAA-funded pavement rehabilitation projects.

4. Reconstruct, reconfigure, and expand the main apron to accommodate aircraft parking and terminal area services.

5. Taxiway improvements including a diagonal access taxiway and cross taxiway should be completed to improve aircraft flow between the runway and aircraft parking, fueling, and AG areas.

6. Install taxiway edge reflectors on the parallel taxiway and access taxiways to improve safety during nighttime operations.

7. Formally request FAA development of a global positioning system (GPS) instrument approach for the airport.

8. Install an automated weather observation system (AWOS/ASOS) at the airport to support instrument approach requirements, particularly for medevac and business aviation users.

9. Install runway end identifier lights (REIL) in conjunction with the commissioning of the GPS approach.

10. Relocate agricultural aircraft operations and storage areas adjacent to the new diagonal taxiway. The new facilities would include a common-use containment pad, aircraft parking, and lease areas for AG users. This area should be developed in stages as demand occurs and will require considerable amounts of fill to provide relatively level development sites.

11. The existing airport access road (beyond the terminal vehicle parking area) should be widened and extended to serve the south hangar row and relocated AG facilities.

12. The south parallel taxiway should be relocated and reconstructed to meet FAA ADG II standards (240 feet separation from runway centerline).

13. To provide for airport water needs, including fire protection, a new water well and storage tank should be developed on the airport. The County and City of Lexington should evaluate potential community benefits that could result from the water system improvements and pursue funding through the US Department of Agriculture (USDA) Rural Development Program, or similar funding programs designed to support community infrastructure improvements.

14. The existing airport beacon should be elevated to improve visibility from the air.

15. An area of approximately 17 acres (160 feet wide) located along the north side of Runway 8-26 should be acquired and reserved for future taxiway construction.

16. The existing northeast-southwest taxiway, located west of the main apron should be resurfaced/reconstructed.

17. The existing visual approach slope indicators (VASI) should be replaced with precision approach slope indicators (PAPI) at the end of their useful life, or in conjunction with another development project.

18. Construct a north-side parallel taxiway extension (to the end of Runway 8) as demand and/or safety warrants.

19. The property immediately north of the airport should be reserved for long-term industrial development. A north side parallel taxiway reserve should be established (to the end of Runway 26) to preserve long-term airside access capabilities.

20. Overhead flood lighting should be provided on the main apron adjacent to the fueling areas, aircraft loading/unloading areas, and hangars.

21. Morrow County should develop airport-specific zoning for the airport to replace the existing EFU zoning to permit airport-related developments as "outright" rather than "conditional" uses.

22. Morrow County and the City of Lexington should jointly develop airport overlay zoning, which coincides with the FAR Part 77 surfaces depicted (Drawing 3) on the updated Airport Layout Plan set. Local governments must adopt and map airport overlay zoning consistent with state law (ORS Ch. 836.600-630).

23. Morrow County should adopt the Airport Layout Plan document and drawings in a timely manner for incorporation in the County comprehensive plan.

24. The County should request funding assistance under FAA and other federal or state funding programs for all eligible capital improvements.

25. The County should initiate the recommended improvements in a timely manner.

Chapter Two
Inventory and Forecasts

INTRODUCTION

This section of the report will document existing conditions and aviation activity at the airport. Existing forecasts of aviation activity will be evaluated, and updated as necessary, to identify in broad terms, anticipated trends that may affect development needs at Lexington Airport through the twenty-year planning period and beyond.

Historical data from a variety of sources are used in this evaluation, including forecasts of aviation activity contained in the 1997 **Oregon Aviation System Plan** (OASP) and the most recent **Airport Layout Plan Report** (August 1983); local documents, and regional socioeconomic data. Additional data sources include an **Airport Environmental Assessment** (July 1983) associated with the construction of Runway 8-26; the **Lexington Airport Pavement Evaluation Maintenance-Management Program** (1997) and the FAA Airport Master Record Form 5010-1. The existing airfield facilities were also examined during recent on-site inspections.

AIRPORT LOCALE

Lexington is located in north central Morrow County on Oregon's northeastern corner. Morrow County was formed from part of Umatilla County in 1885. Heppner, the county seat, is located nine miles southeast of Lexington on Highway 207/74. Ione is located about nine miles northwest of Lexington, also on Highway 207/74. The highway is designated the Blue Mountain Scenic Byway. Lexington is located in the Willow Creek Valley near the base of the Blue Mountains.

The region is comprised of forest, agriculture and range lands bordered by the Columbia River to the north, the Cascade Mountains to the west, and the Blue Mountains to the south and east. The Columbia River represents the northern border for Morrow County and Oregon.

Lexington is located approximately 27 miles south of U.S. Interstate 84 (I-84) at Heppner Junction. Lexington is approximately 182 miles east of Portland and 68 miles west-southwest of Pendleton. Highways 207 and 74 connect at Lexington and continue to Heppner, where they continue in different directions. Highway 74 runs from Interstate 84 to a connection with Highway 395 near Pilot Rock. Highway 207 runs from north of Hermiston to Lexington, then continues southward until reaching Mitchell, on Highway 26, northeast of Prineville.

Highway 207 passes immediately east of the airport and serves as the primary surface access route to the airport. The airport is approximately one-half mile from the city center sitting on a plateau approximately 200 feet above town.

Hospital and emergency medical care (Oregon Trauma Level IV) are available at Pioneer Memorial Hospital in Heppner. Lexington Airport is the only airport capable of accommodating fixed wing medevac flights for central and southern Morrow County. When required, patients are transported to Walla Walla, Bend, or Portland for higher-level trauma care.

CLIMATE

Moderate temperatures and low precipitation characterize the region. Detailed data were not available for Lexington, although Heppner, located nine miles southeast, provides a seventy-year summary of climate data for the period 1928 and 1998. Heppner averages 13.4 inches of precipitation and 16.3 inches of snowfall annually. The average maximum temperature is 84.8 degrees Fahrenheit (July) and the average minimum temperature is 25.0 degrees (January). The 1983 ALP listed the mean maximum daily temperature as 91 degrees. Although the source of the 91 degree value is unknown, it will be used since it may be from on-site measurements, and is the more conservative value as concerns airport analysis.

Limited precipitation data is also available for Ione for the period 1948 and 1998. Ione averages 12.4 inches of precipitation and 17.8 inches of snowfall annually. The similar precipitation data for Heppner and Ione would suggest that local weather conditions at Lexington, located between the two communities, are comparable, reflecting the gradual elevation and terrain changes that occur along the 18-mile stretch.

The current airport layout plan drawing does not include a wind rose, although the runway coverage data block indicates 94.1 percent coverage with an unspecified crosswind component. The 1983 Airport Layout Plan Report (Chapter 3, Page 3) includes a wind rose that appears to have been created by combining wind data from Pendleton, Condon and The Dalles. Although the Lexington runway alignment was not overlaid on the wind rose, the report estimates that "Runway 8-26 will have in excess of 95 percent all weather wind coverage" (at 12 miles per hour).

Prevailing winds in the area generally follow a westerly-easterly pattern. Local pilots indicate the runway alignment is generally adequate, although the airport does experience occasional strong crosswinds in a northeast-southwest direction. A 1947 Airport Master Plan drawing indicated that east-west winds were predominate (86.6 percent), with the remaining winds divided between north-south and northeast-southwest.

GEOLOGY

According to the General Soil Map, prepared by the U.S. Department of Agriculture, Soil Conservation Service, the geology of the Morrow County includes several distinct soil types and zones within the overall Columbia River Plateau. The overall area is dominated by well to somewhat poorly drained soils formed in Loess and recent Alluvium and well drained shallow, stony soils on 0 to 70 percent slopes in a 9 to 14 inch precipitation zone.

The airport is located on a plateau, which is approximately 200 feet higher than town. This area is part of the Ritzville Association, which consists of a band of gently sloping terrain about 15 to 20 miles wide between Lexington and the Columbia River basin. This area consists of soils which have good suitability for irrigated crops, with slopes of less than 7 percent and rooting depths of over 40 inches. The steeply sloped areas found along the highways between Lexington and Heppner, Pilot Rock and Heppner Junction are referred to as Lickskillet-Wrentham Associations. These areas are characterized by shallow rocky soils, which have very poor suitability for irrigated crops, slopes up to 75 percent, and less than 12 inches of rooting depth.

SOCIOECONOMIC CONDITIONS

Population

According to data maintained by the State of Oregon Office of Economic Analysis, the population of Morrow County was estimated at 9,000 in 1996. The population of Morrow County is distributed primarily between the northern and central part of the county. Boardman and Irrigon, located at the north end of the county, account for about 41 percent of the County's population. Lexington, Ione, and Heppner account for slightly less than 23 percent of Morrow County's population. The remaining population (37 percent) resides in unincorporated areas of the county.

Morrow County's population is projected to increase to over 13,300 by the year 2020, representing an overall increase of more than 48 percent, or an annual average growth rate of 1.65 percent between 1996 and 2020. Available projections do not provide information about potential trends or

changes in the geographic distribution of population within the county. In 1996, Lexington's population was estimated at 295; the combined population of Lexington, Heppner, and Ione was estimated at 2,025.

Economy

The economy of Morrow County is heavily dependent on the production of natural resources in both agriculture and timber harvesting, which each have unique seasonal activity trends. In the nonfarm employment category, both manufacturing and construction have historically been subject to sharp swings in activity. The Kinzua Lumber mill in Heppner is one of the local area's leading employers, providing approximately 100 jobs. County government, local school districts, municipal government, and the Morrow County Health District are among the local area's leading employers.

The region experiences strong seasonal shifts in unemployment ranging from lows of around 5 percent to highs of around 12 percent. According to data maintained by the Oregon Department of Employment, the 12-month moving average for Region 12 unemployment, which includes both Morrow and Umatilla County, has ranged from 7 to 9 percent since 1990. The local area has consistently experienced unemployment levels that are 2 to 2.6 percentage points higher than the statewide average. Between 1990 and 1996, Morrow County's annual unemployment rate averaged approximately one percentage point higher than adjacent Umatilla County.

The 1992 Agricultural Census identified more than 1.1 million acres in farms, 450,000 acres in cropland, and 220,000 acres as harvested cropland in Morrow County. In addition to wheat, which is Morrow County's leading crop, other leading agricultural products includes livestock, barley, and hay. In 1996, the market value of Morrow County agricultural products sold was estimated at nearly $118 million.

AIRPORT HISTORY

According to information contained in the 1983 Airport Layout Plan Report, the Lexington Airport site has been in aviation use since early 1945. Through local efforts, the airport has undergone a series of improvements 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. The airport 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 ENVIRONMENT

Lexington Airport is located one-half mile north of the city center, just west of Highway 207. The airport access road is located approximately one-half mile north of the intersection of Highway 207 and 74. The paved airport access road travels approximately ¼ mile from Highway 207 to the vehicle parking area.

The airport is located in an area of low-density agricultural use, although residential development is located within one-half mile south of the airport. However, the normal aircraft flight paths and the 200-foot higher elevation of the airport in relation to the surrounding community, combine to minimize potential conflicts between the airport and nearby community land uses. Lexington Airport is located entirely outside the city limits and urban growth boundary (UGB) of the City of Lexington.

AIRFIELD FACILITIES

Historically, Lexington Airport has served a variety of general aviation users, including agricultural aerial applicators. The existing airport facilities have been developed based on the needs associated with these users.

The airport currently accommodates locally based single engine aircraft, including two turbine-powered agricultural aircraft. In addition to local aircraft, the airport accommodates itinerant general aviation, business aviation, including turboprop, business jet, and helicopter operations.

The airport planning process at Lexington began in 1945 with the construction of the initial runway (2,875-foot gravel surface) and has continued through the most recent airport layout plan, completed in 1983. The airport originally had a 2,200-foot crosswind runway (approximately 030-210 degree alignment) intersecting the primary runway near the east end. The 1983 ALP recommended the construction of a new runway, with the original runway to be used as a parallel taxiway. The crosswind runway was converted into a taxiway as part of the airport reconstruction. The original hangar and aircraft parking areas were retained and a layout for future landside facilities was prepared.

Table 2-1 summarizes airport data and **Figure 2-1** depicts existing conditions at the airport.

Figure 2-1

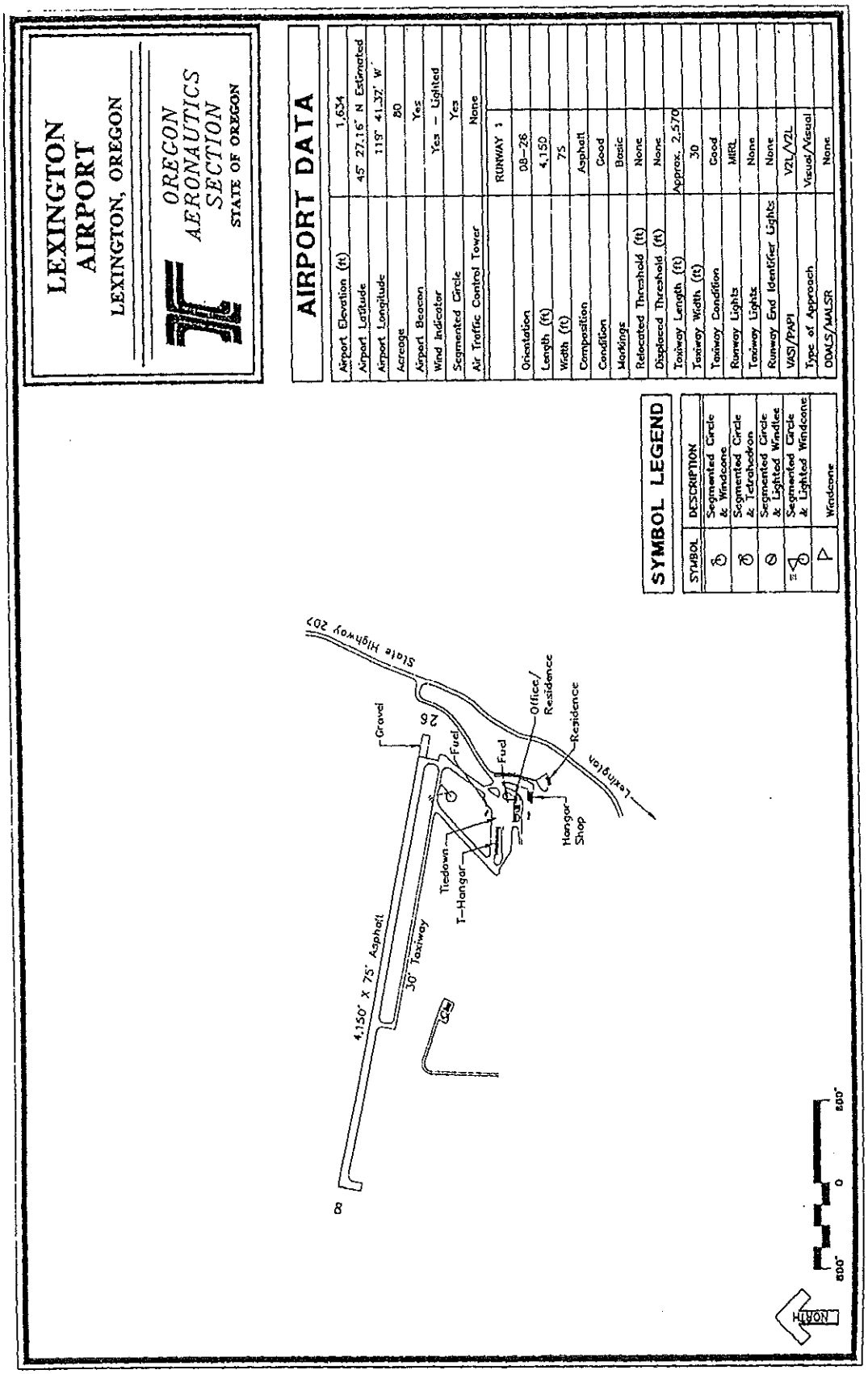

LEXINGTON AIRPORT
LEXINGTON, OREGON
OREGON AERONAUTICS SECTION
STATE OF OREGON
AIRPORT DATA
Airport Elevation (ft) 1,634
Airport Latitude 45° 27.16' N Estimated
Airport Longitude 119° 41.32' W
Acreage 80
Airport Beacon Yes
Wind Indicator Yes – Lighted
Segmented Circle Yes
Air Traffic Control Tower None
RUNWAY 1
Orientation 08–26
Length (ft) 4,150
Width (ft) 75
Composition Asphalt
Condition Good
Markings Basic
Relocated Threshold (ft) None
Displaced Threshold (ft) None
Taxiway Length (ft) Approx. 2,570
Taxiway Width (ft) 30
Taxiway Condition Good
Runway Lights MIRL
Taxiway Lights None
Runway End Identifier Lights None
VASI/PAPI V2L/V2L
Type of Approach Visual/Visual
ODALS/MALSR None
SYMBOL LEGEND
SYMBOL DESCRIPTION
Segmented Circle & Windcone
Segmented Circle & Tetrahedron
Segmented Circle & Lighted Windtee
Segmented Circle & Lighted Windcone
Windcone
State Highway 207
Gravel
26
Fuel
Fuel
Office/ Residence
Residence
Lexington
Hangar
Shop
Tiedown
T-Hangar
4,150' X 75' Asphalt
30' Taxiway
8
0
800'
800'
HWY

TABLE 2-1
AIRPORT DATA

Airport Name/Designation	Lexington Airport (9S9)
Airport Owner	Morrow County
Date Established	July 1945
Airport Category	National Plan of Integrated Airport Systems (NPIAS) – General Aviation FAA Airport Reference Code: B-II
Airport Acreage	80 Acres (5010 estimate); perhaps as much as 104 acres through most recent property acquisition (requires verification)
Airport Coordinates	N 45° 27.16' W 119° 41.32'
Airport Elevation	1,634 Feet Mean Sea Level (MSL)
Airport Traffic Pattern Configuration/Altitude	Left Traffic – 1,000 feet above ground level

RUNWAY AND TAXIWAYS

Lexington Airport has one paved runway (8-26) which is oriented on a 080-260 degree magnetic alignment. Runway 8-26 has a partial-length parallel taxiway located on its south side, which extends approximately 2,500 feet from the east end of the runway. The parallel taxiway has two exit taxiway connections to the runway. The parallel taxiway provides access to all aircraft parking and hangar areas. An aircraft holding area is located near the Runway 8 threshold. Runway and taxiway data are listed in **Tables 2-2 and 2-3**.

Runway 8-26 has a published length of 4,150 feet (U.S. Government Flight Information Publication – Airport Facility Directory 9/9/99; FAA Form 5010-1; 12/96). However, upon review of various documents and the most recent aerial photography, it appears that the runway is actually approximately 4,300 feet long. The runway design drawings completed in 1988 by CH2M Hill, illustrate a reconstructed runway 4,153 by 75 feet. However, the aerial photography indicates that the runway was shifted approximately 200 feet west and constructed at a length of approximately 4,300 feet. The March 1997 Pavement Maintenance-Management Program for Lexington Airport, prepared by Pavement Consultants Inc., provides dimensional details for all airfield pavements. The PCI report lists the runway dimension as 4,355 x 75 feet. A recently developed airport sketch prepared as part of the Oregon Aviation System Plan (OASP) depicts Runway 8-26 as 4,300 by 75 feet.

For clarification purposes, airport management should measure the runway pavement to determine actual length and make the appropriate changes to published airport facility guides.

TABLE 2-2
RUNWAY DATA

Dimensions	4,150 x 75 feet (published); 4,300 x 75 feet based on more recent data (requires verification)
Effective Gradient	0.0126% (estimated)
Surface	Asphaltic Concrete (AC) 1.5" 4" Crushed Aggregate Base; 4" Aggregate Subbase
Weight Bearing Capacity (WBC)	4,000 Pounds – Single Wheel Landing Gear[1]
Marking	Basic (runway numbers, centerline stripe)
Lighting	Medium Intensity Runway Edge Lighting (MIRL) Threshold Lights
Wind Coverage	95 % (estimated) at 12 mph (based on other nearby airport's wind data)

1. Pavement Strength as Published in U.S. Airport/Facility Directory, state pavement data indicates strength at 12,500#.

TABLE 2-3
TAXIWAY DATA

Configuration	Partial length parallel taxiway with two exits Aircraft holding area (80x130') at Runway 8 end Aircraft taxilane on north side of shade hangar Two access taxiways in terminal area Connecting taxiway between West Taxiway and West Apron
Dimensions	2,729 x 40 feet (parallel taxiway) Hangar Taxilane 30 feet wide Access Taxiways 40 and 45 feet wide Connecting Taxiway 20 feet wide
Surface	Bituminous Surface Treatment (BST) on 3-4" Crushed Aggregate Base
Marking	Centerline Stripes (eastern 1,250 feet only); Aircraft Hold Lines (at runway thresholds); Taxiway Lead-in Lines (yellow paint)
Lighting/Reflectors	None
Runway-Parallel Taxiway Separation	195 to 210 feet tapered at Runway 26 end Aircraft hold lines 125 feet from runway centerline.

Two access taxiways extend from the parallel taxiway to the aircraft parking and hangar areas located near the southeast corner of the airport. The eastern taxiway extends from the apron and fueling area to the parallel taxiway and the end of Runway 26. The western taxiway follows the alignment of the former crosswind runway and connects to the west apron and taxilane located immediately north and south of the shade hangar. It was noted during the facility inventory that a

multi-engine aircraft once struck the northeast corner of the shade hangar with its wingtip when attempting to travel on the taxilane. It appears that the building clearance available on the taxilane is not adequate for larger aircraft. There is approximately 30 feet of hard surfaced taxilane used for aircraft taxiing along the north edge of the shade hangar.

A recent visual inspection of the runway indicated that the pavement is in generally good condition, showing normal signs of weathering. The runway pavement was applied in 1989 and should be sealed to maximize its useful life. The runway markings are worn and need to be repainted. Vegetation control and crackfilling appear to have been conducted on a regular basis, although some additional crackfilling was needed. Along the runway edges, tall grass (12-18") was observed in line with the runway edge lights. In some cases, the grass had grown taller than the runway light standards. Additional clearing is needed to maintain the lights full visibility.

The parallel taxiway is in poor condition, with visible settling and cracking, particularly on the western section of the taxiway. According to local information, the parallel taxiway has a minimal base beneath the thin bituminous surface treatment. At least one aircraft is known to have broken through the pavement while taxiing. The recent visual observation identified severe cracking, settling, several large holes (4-inch diameter, 3-4 inches deep), portions of large rocks protruding through the surface, and areas of failed pavement. The eastern section of the parallel taxiway is in slightly better condition, but it too is in poor condition.

The East Access Taxiway is in excellent condition. The West Access Taxiway is in poor condition. The thin BST treatment on the taxilane located north of the T-hangar is also in poor condition. The connector taxiway between the West Access Taxiway and the West Apron has failed. The paved road/taxiway used to access a hangar located off airport property is in good condition.

AIRCRAFT APRON

The aircraft parking and hangar areas are located on the south side of the runway near the east end. The landside facilities include the main apron, which accommodates light aircraft tiedowns, itinerant aircraft, and agricultural aircraft ground operations; a fueling area; and a narrow (west) apron located south of the shade hangar. These areas are summarized in **Table 2-4**.

The main apron provides a paved area for transient aircraft loading and unloading directly in front of the terminal building. An aircraft tiedown area is located immediately adjacent (east) of the shade hangar. Two 150-foot long cables are fixed in the pavement to provide tiedowns for five or six light aircraft.

A small extension on the north end of the main apron provides a paved area for aircraft fueling. An above ground fuel tank and pump shack are located off the paved surface along the west edge of the apron. The east access taxiway abuts the eastern edge of the fueling area. There is approximately 100 feet of separation between the taxiway centerline and the fuel pump shack.

The West Apron is a narrow parking apron abutting the southwest corner of the main apron. The west apron is used primarily for agricultural aircraft ground operations. Most of the area located along the south edge of the apron is used for storage of agricultural aerial spraying equipment, compounds, and associated items. A 20-foot wide taxiway connects the west end of the apron to the west access taxiway.

TABLE 2-4
AIRCRAFT APRON DATA

Main Apron	310x185' (6,370 square yards) Asphalt - PCI 84 "Very Good" Aircraft loading/unloading, business aircraft parking; tiedowns
West Apron	242x75' (2,020 square yards) BST – PCI 0 "Failed" Open apron, fronting conventional hangars, AG aircraft ground operations
Fueling Area	158x98' (1,720 square yards) Asphalt – PCI 84 "Very Good" Light aircraft fueling

AIRFIELD PAVEMENT CONDITION

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. Through the use of MicroPAVER computer software, existing conditions data can be entered, and projections of future pavement condition and specific needs can be estimated. **Table 2-5** summarizes pavement condition at Lexington Airport.

According to the data contained in the 1997 report, the runway, east access taxiway, the main apron, and the fueling area pavements are all rated "very good" or "excellent." These pavement sections were reconstructed or resurfaced as part of the major runway construction in 1988.

The parallel taxiway and west exit taxiway are rated in three separate sections. The eastern half of the parallel taxiway is rated "poor" and the western half of the taxiway is rated "very poor." The western exit taxiway between the runway and parallel taxiway is rated "very good."

The airport has two primary access taxiways for moving aircraft between the hangar and parking aprons and the runway-taxiway system. The eastern taxiway extends from the end of Runway 26 to the aircraft fueling area and the main apron. The eastern access taxiway is rated "excellent." The western access taxiway was formerly part of the crosswind runway. The western access taxiway is rated "very poor." A small connector taxiway extends from the end of the western access taxiway to the west apron. This taxiway pavement is rated "failed."

Three apron pavement sections are rated including the main apron, the fueling area, and the west apron. Both the main apron and the fueling apron are rated "very good" while the west apron pavement is rated "failed."

The main apron and fueling area appear to be in good condition and have been well maintained, showing normal signs of weathering. No vegetation or unfilled cracking was observed. Minor fuel/oil staining was noted in some tiedown positions. The "very poor" and "failed" pavements located in terminal area have thin bituminous surface treatments that have broken up. Many of the sections have visible gravel accumulations mixed with broken pavement.

TABLE 2-5
SUMMARY OF AIRFIELD PAVEMENT CONDITION

Pavement	PCI Rating [1]	Condition
Runway	82	Very Good
Parallel Taxiway	18 – western 1,250 feet	Very Poor
	38 – eastern 1,479 feet	Poor
Parallel Taxiway West Exit	71	Very Good
West Access Taxiway	16	Very Poor
East Access Taxiway	89 (between runway and parallel txy)	Excellent
	100 (between parallel txy and apron)	Excellent
Main Apron	84	Very Good
Aircraft Fueling Area	84	Very Good
West Apron	0	Failed
Taxiway Connector (West Apron to West Access Taxiway)	4	Failed

1. The Pavement Condition Index (PCI) scale ranges from 0 to 100, with seven general condition categories ranging from "failed" to "excellent." For additional details, see *Oregon Aviation System Plan Pavement Evaluation/Maintenance Management Program* (1997) for Lexington Airport.

LANDSIDE FACILITIES

HANGARS

Three aircraft hangars are located on the airport. One additional hangar is located off airport property with access provided via a roadway/taxiway, which extends from the airport access road. The off-airport hangar is a large conventional hangar used by the local agricultural aerial applicator for aircraft storage and maintenance.

The on-airport hangars include one Quonset style building, one conventional hangar, and one 6-unit shade hangar. The Quonset building is currently used for aircraft storage; the conventional hangar is used primarily for equipment storage and agricultural aircraft operations; the shade hangar is used for aircraft storage. All hangars located on the airport have door openings facing north.

AIRPORT BUILDINGS

In addition to aircraft hangars, the airport has a multi-use office/terminal building, which provides pilot flight planning, restrooms, and passenger waiting areas. The building also includes residential quarters for use by an on-site airport caretaker.

The airport office/terminal, Quonset hut, and conventional hangar are located along the south edge of the apron. Vehicle access is provided along the back of the buildings and from the apron. The access road is a narrow dirt roadway located near the southern property line of the airport. There is approximately 60 to 70 feet of clearance between the back of the on-airport hangars and the north side of the off-airport hangar. It appears that most trucks used for fuel or other deliveries access the area via the aircraft apron rather than using the narrow dirt access road.

A small fuel pump shed is located adjacent to the AVGAS fuel tank and the aircraft apron.

Table 2-6 summarizes existing airport hangars and other airport buildings.

TABLE 2-6
AIRPORT BUILDINGS

Building	Existing Use
Conventional Hangar	AG Aviation Business, Aircraft Storage
Quonset Style Hangar	Aircraft and Equipment Storage
Office/Terminal Building	Pilot/Passenger Services, Caretaker Residence
Fuel Pump House	Aircraft Fueling
Shade Hangar (6 units)	Aircraft Storage
Convention Hangar (off airport)	AG Aircraft Storage and Maintenance

AIRPORT SUPPORT FACILITIES

Aviation gasoline (AVGAS) is available at the airport. The airport has one aboveground tank, which is owned by Morrow County. The airport's local agricultural aircraft operator (Gar Aviation) maintains a private aboveground jet fuel storage tank on the airport. A privately owned fuel truck with 100LL AVGAS markings was also parked adjacent to the west apron. Public fuel storage is summarized in **Table 2-7**.

TABLE 2-7
AVIATION FUEL STORAGE

Fuel Type	Capacity/Storage Facility[1]
Aviation Gasoline (AVGAS) 100LL	6,000 gallons – above ground tank
Jet Fuel (Jet A)	None

1. Does not include privately-owned fuel storage

AGRICULTURAL AIRCRAFT OPERATIONS

Lexington Airport has supported agricultural aircraft spraying operations for many years. Existing facilities include a series of privately-owned above ground tanks, barrels, a large water storage tank, and equipment storage areas. Conventional hangars located on and off the airport are used by the local aerial applicator for aircraft storage and maintenance, and equipment storage.

The future needs of on-airport agricultural aircraft facilities including aircraft parking, loading and ground handling areas, dispensing and storage facilities, and containment will be addressed in the facility requirements analysis. The existing apron configuration and aircraft access through the tiedown area appear to create congestion when multiple aircraft are on the apron. Planning for the efficient operations of agricultural aircraft, which require fast turnarounds, will be an important part of this evaluation.

AIRPORT LIGHTING

The airfield lighting at Lexington Airport accommodates day-night operations in visual conditions. The airport has runway edge lighting, threshold lights, visual guidance indicators, two lighted guidance signs, a lighted wind cone/segmented circle, and an airport beacon. All lighting components appear to be in good condition. Existing lighting systems are described in **Table 2-8**.

TABLE 2-8
AIRPORT LIGHTING

Component	Type	Condition
Runway Lighting	Medium Intensity Runway Edge Lighting (MIRL) Threshold Lighting both runway ends Taxiway exit locator lights (2 blue fixtures) near mid-field exit to parallel taxiway	Good
Taxiway Lighting	None	N/A
Airfield Signage	2 Lumacurve Lighted Signs at Rwy-Txy Exits	Good
Visual Guidance Indicators	Visual Approach Slope Indicator (VASI) – Rwy 8 and 26	Good
Airport Lighting	Airport Rotating Beacon; Wind Sock Illumination	Reported poor beacon visibility from air

The runway edge lights are activated by radio contract with the common traffic advisory frequency (CTAF). The parallel taxiway does not have edge lighting or reflective markers.

The airport beacon is mounted on a platform located adjacent to the main apron and terminal building. Local pilots indicate that the existing airport beacon is difficult to see from the air. Relocation and/or raising the beacon should be considered.

The lighted wind cone and segmented circle are located on the south side of the runway, between the two access taxiways, south of the parallel taxiway. The wind cone has faded and will eventually need to be replaced.

Overhead flood lighting was not observed on the main apron, or in the fueling or hangar areas.

AIRSPACE AND NAVIGATIONAL AIDS

Lexington Airport operates under visual flight rules (VFR) conditions. The airport does not have a published instrument approach, although the County is currently working with FAA to establish a nonprecision global positioning system (GPS) instrument approach to the airport. There are no electronic navigational aids or automated weather observation system located on the field. **Table 2-9** summarizes existing navigational aids and related items.

TABLE 2-9
NAVIGATIONAL AIDS AND RELATED ITEMS

Type	Facilities
Electronic Navigational Aids	VORTAC Pendleton (PDT) 114.7 MHz (34.5 NM on 226 degree radial); Nondirectional Beacon (NDB) Foris (PD) 230 LHz (43 NM)
Instrument Approaches	None
Weather Observation	None
Communication	Unicom (122.9 MHz)

The airport has minimal obstructions and some restricted areas located within a ten-mile radius, as identified on the Seattle Sectional Aeronautical Chart. The airspace surrounding Lexington Airport is relatively uncomplicated and no conflicts are known to exist with other airports associated airspace. Local airport traffic pattern altitude is 1,000 feet (AGL) with standard left traffic. **Tables 2-10 and 2-11** summarize notable obstructions, special airspace designations and IFR routes in the vicinity of Lexington Airport.

TABLE 2-10
LOCAL AIRSPACE OBSTRUCTIONS/FEATURES
(10 nautical mile radius)

Type of Obstruction	Description	Distance From Airport
Overhead Power Lines	Major Transmission Lines	4 miles north
Tower	Single 290-foot AGL Tower	7 miles west-northwest
Military Training Routes	IR 342-344-346 and VR 1353	11.5 miles northwest
Restricted Airspace	R-5701 Boardman Surface to 6,000 feet MSL; other restricted sections continue approximately 25 miles west – ceilings to FL200	10 miles northwest
Military Operations Area (MOA)	Boardman MOA 4,000 feet to FL180	9 miles north

Source: Seattle Sectional Aeronautical Chart (June 18, 1998); U.S. Terminal Procedures – Northwest Volume dated 8 October 1998 National Oceanic and Atmospheric Administration, National Ocean Service

TABLE 2-11
AIRSPACE/INSTRUMENT ROUTES

Airspace Item	Description	Location
Class E Airspace	Triangular area surrounding Lexington Airport - 1,700 feet AGL floor	Extends 3 nautical miles west and 6 nautical miles east of the airport.
Low Altitude Enroute Airway	Victor 536 – 6,000/10,000 feet mean sea level minimum enroute altitude (MEA)	9 nautical miles southeast – connects to Pendleton VORTAC 210 degree radial
Low Altitude Enroute Airway	Victor 112 – 4,000 feet mean sea level minimum enroute altitude (MEA)	5 nautical miles north – connects to Pendleton VORTAC 234 degree radial
Low Altitude Enroute Airway	Victor 182 – 5,300 feet mean sea level minimum enroute altitude (MEA)	5 nautical miles southwest – connects to Baker City VORTAC 278 degree radial

SURFACE ACCESS AND VEHICLE PARKING

Vehicle access to the airport is provided by a 23-foot wide paved access road, which runs approximately one-quarter mile from Highway 207 to a gravel surfaced terminal area parking lot. The road is does not have markings, curbs, gutters, sidewalks, or lighting. At the terminal vehicle parking lot, a dirt road extends approximately ¼ mile to the west, along the airport's south property line along the back of the buildings located on the apron.

Vehicle parking on the airport includes a gravel surfaced parking area approximately 100 feet wide. The parking area located adjacent to the airport terminal/office can accommodate 10-12 vehicles. Other vehicle parking needs are accommodated adjacent to the hangars.

FENCING

Fencing on the airport is limited to wire fencing along the property line.

UTILITIES

The airport has water, electrical, and telephone service. The airport terminal/office uses a septic system. Water on the airport is provided through city wells. The higher elevation of the airport requires that water be pumped from the wells to the individual connections. The local agricultural operator at the airport maintains a 20,000-gallon water storage tank.

Local utility providers include Columbia Basin Electric (electric), CenturyTel (telephone), and the City of Lexington (water).

The adequacy of the existing water supply and storage system related to fire protection needs has been identified as a user concern for the airport.

LAND USE PLANNING AND ZONING

Lexington Airport is located outside the City of Lexington Urban Growth Boundary (UGB) and city limits. The airport is within Morrow County's Exclusive Farm Use (EFU) zone. An Airport Approach (A-A) zone also exists to protect the approaches to each runway end.

The airport's southern boundary coincides with the northern edge of the City of Lexington UGB and portions of the city limit boundary. City zoning for property adjacent to the airport includes Commercial (C), Public Use (PU), and General Residential (GR).

All current land uses on the airport are aviation related. A more detailed discussion of on-site and nearby land uses, and their potential compatibility issues, will be provided in the Compatible Land Use Chapter and Environmental Checklist. Existing land uses and zoning in the vicinity of the airport are summarized in **Table 2-12**.

TABLE 2-12
AIRPORT VICINITY LAND USE AND ZONING

Land Use	Zoning
North: Agriculture	Morrow County **Exclusive Farm Use (EFU)**
South: Single Family Residential Commercial Services County Shops Agriculture	City of Lexington **Residential** City of Lexington **Commercial** City of Lexington **Farm Residential** Morrow County **Exclusive Farm Use (EFU)**
East: Highway 207 Agriculture Farm Dwelling	Morrow County **Exclusive Farm Use (EFU)**
West: Agriculture	Morrow County **Exclusive Farm Use (EFU)**

AIRPORT SERVICE AREA

The airport service area refers to the area surrounding an airport that is directly affected by the activities at that airport. It is not uncommon to have other airports located within a service area, although the services or facilities available often define the size of the service area. Normally a 30 or 60-minute surface travel time is used to approximate the boundaries of a service area. **Table 2-13** lists the other public airports in the vicinity of Lexington.

The limited availability of other public airports within a 30 to 60-minute travel time of Lexington illustrates that Lexington Airport activity appears to focus on local and regional needs within central and southern Morrow County. Although north Morrow County also has two locally-owned public airports, Lexington is the only public airport with aviation fuel in Morrow County.

Based on their close proximity, it appears that the service areas of Lexington Airport and Hermiston Municipal Airport overlap, particularly for users in the north part of Morrow County.

TABLE 2-13
PUBLIC AIRPORTS IN VICINITY (within 40 nautical miles)

Airport	Location	Runway Dimension (feet)	Surface	Fuel
East. Oregon Regional at Pendleton	38 NM east-northeast	6,300 x 150 (primary rwy)	Asphalt	Yes
Boardman	22 NM north-northwest	4,200 x 150	Asphalt	No
Hermiston Municipal	29 NM northeast	4,500 x 75	Asphalt	Yes
Condon State	24 NM southwest	3,500 x 60	Concrete	No
Arlington	26 NM northwest	5,000 x 50	Gravel	No

AVIATION ACTIVITY AND FORECASTS

HISTORICAL AVIATION ACTIVITY

Historical data for Lexington Airport includes estimates of based aircraft and aircraft operations which have been developed over the last 25 years as part of local or statewide aviation planning projects. More recently, the Acoustical Activity Counting program administered by Oregon Department of Aviation has provided relatively reliable estimates of activity based on measurements made during 12- to 18-month periods. The acoustical counting program provides operations data for two different years at Lexington since 1986.

As noted earlier, agricultural aircraft activity at Lexington Airport represents a major part of overall activity. Based on the unique needs of spraying operators, it is difficult to determine whether this activity has been fully captured in the acoustical activity counting program. Due to the highly seasonal and weather dependent nature of spraying flights, it is possible that many busy flying days are not recorded during the periodic monitoring. The acoustical counting program does a good job of estimating relatively consistent activity that may occur over a one to two week period. However, the timing of the counting and the localized weather conditions, both have the potential of skewing the statistical sample. For planning purposes, the number of annual operations at a low activity airport will not dramatically change the facility needs. More important to determine will be the activity levels of the critical aircraft and other aircraft which have specific facility requirements.

Table 2-14 and **Figure 2-2** summarize historical activity data from available sources. A review of the data indicates that the highest levels of activity and based aircraft at Lexington Airport occurred in the early 1980's. Since the peak in activity, based aircraft and aircraft operations appear to have

declined. However, a rise or decline in aircraft operations of this magnitude will not significantly alter the airport's basic facility need in supporting agricultural aviation, general and business aviation, and medevac flights. **Table 2-15** summarizes current based aircraft at the airport.

TABLE 2-14
HISTORICAL AVIATION ACTIVITY

Year	Based Aircraft	Aircraft Operations	Avg. Operations per Based Aircraft	Data Source
1970	10	-	-	Historic Data
1982	20	13,800	690	1983 Airport Layout Plan Estimate
1986	15	4,432	296	Acoustical Activity Measurement Program
1989	15	4,400	293	OASP Estimate
1992	10	2,527	253	Acoustical Activity Measurement Program
1994	10	2,500	250	OASP Estimate

TABLE 2-15
1998 BASED AIRCRAFT
LEXINGTON AIRPORT

Aircraft Type	Quantity
Single Engine	10
Multi-Engine	0
Total	10

FORECASTS OF ACTIVITY

Figures 2-3 and 2-4 illustrate forecasts of based aircraft and aircraft operations developed through statewide aviation system plans and the Federal Aviation Administration's Terminal Air Forecast (TAF) program. The Oregon Aviation System Plan forecasts generally reflect low-to-moderate growth rates, which are typical of most lower activity airports in Oregon. Although short-terms spikes in activity may be expected, over the long-term, modest growth trends at most general aviation airports are reasonable to expect. The FAA TAF forecasts project a relatively low rate of growth in aircraft operations and static activity in based aircraft.

The 1983 Airport Layout Plan Report estimated base year activity at nearly 14,000 annual operations. The forecasts of aircraft operations based on the base year estimates resulted in a forecast of 26,500 operations by the year 2002. More recent acoustical activity counting data and based aircraft counts suggest that the 1983 forecasts are considerably higher than actual activity. As a result, the 1983 forecasts are not useful in evaluating current facility needs.

The 1997 Oregon Aviation System Plan (OASP) forecasts provide a reasonable baseline projection of aviation activity for Lexington Airport. The current OASP forecasts use 1994 as the base year to develop future year projections. These forecasts reflect relatively modest growth rates with base year data derived from acoustical counts and other more recent estimates.

Based aircraft and operations projections are summarized in **Table 2-16.**

BASED AIRCRAFT

The OASP forecasts project an increase in based aircraft at Lexington from 10 (1994) to 13 by the year 2014. This reflects a 30 percent increase over twenty years, which averages 1.3 percent annually. The existing distribution of single-engine and multi-engine aircraft is projected to remain relatively unchanged.

The Federal Aviation Administration's current Terminal Air Forecasts (TAF) for Lexington projects a flat ten (10) based aircraft through the year 2015.

AIRCRAFT OPERATIONS

The OASP forecast of aircraft operations project an increase from 2,500 (1994) to 3,130 by the year 2014. This reflects a 25 percent increase over twenty years, which averages 1.1 percent annually. The existing distribution of local and itinerant operations is projected to remain relatively unchanged.

The Federal Aviation Administration's current Terminal Air Forecasts (TAF) utilizes a higher base year operations total (4,432) for 1998, but uses a lower annual growth rate (0.7 %) resulting in a annual operations total of 5,027 in the year 2015. Although there is some difference in the OASP and TAF aircraft operations totals, both forecasts provide a relatively similar estimate of future activity levels at Lexington Airport. For the purposes of this planning project, the OASP forecasts provide a useful "baseline" projection of activity, and the TAF provides a reasonable "upper range" projection.

TABLE 2-16
CURRENT FORECASTS
LEXINGTON AIRPORT

OASP Based Aircraft	Base Year (1994)	1999	2004	2009*	2014
Single Engine	9	9	10	10	11
Multi Engine	1	1	1	2	2
Rotor	0	0	0	0	0
Other	0	0	0	0	0
Total	**10**	**10**	**11**	**12***	**13**
OASP Aircraft Operations					
Local	1,932	2,009	2,125	2,270	2,419
Itinerant	568	591	625	665	711
Total	**2,500**	**2,600**	**2,750**	**2,935***	**3,130**
FAA TAF Aircraft Operations					
Local	3,400	3,451	3,580	3,662	3,837
Itinerant	1,032	1,046	1,083	1,112	1,156
Total	**4,432**	**4,497**	**4,863**	**4,794**	**4,993**

Source: 1997 Oregon Aviation System Plan, Volume II Inventory and Forecasts * Interpolated by Century West Engineering; FAA Terminal Air Forecasts, updated 11/4/98.

AIRFIELD CAPACITY

Airfield capacity is determined by the methodologies described in Federal Aviation Administration **Advisory Circular 150/5060-5, Airport Capacity and Delay.** Runway capacity at Lexington is considered adequate through the planning period.

Hourly runway capacity is approximately 82 to 92 operations during visual flight rules (VFR) conditions. If peak month activity accounts for 20 percent of annual activity, *design day* demand in 2015 would be below existing *hourly* capacity. The 1997 Oregon Aviation System Plan (Volume II) lists the annual service volume (ASV) of Runway 8-26 at 145,000 annual operations, which exceeds forecast demand by a wide margin.

SUMMARY

For planning purposes, the Consultant recommends using the 1997 OASP forecasts as a "baseline" projection, with the FAA TAF operations forecasts providing an upper band projection which will create a envelope of activity which airport activity would likely fall.

Short-term fluctuations in activity can be expected, particularly as economic cycles occur. However, historical data indicates that projections of long-term growth which follow a more moderate trend are generally more reliable for planning purposes.

Modest growth in both based aircraft and aircraft operations during current planning period is a reasonable expectation. Although overall activity levels may remain relatively low, Lexington Airport will likely continue to experience frequent periods of heavy activity associated with aerial applicator operations. The potential of adding an instrument approach may also benefit existing business and medevac users, which may result in an increase of activity.

Figure 2-2 (Lexington)
Historical Airport Activity*

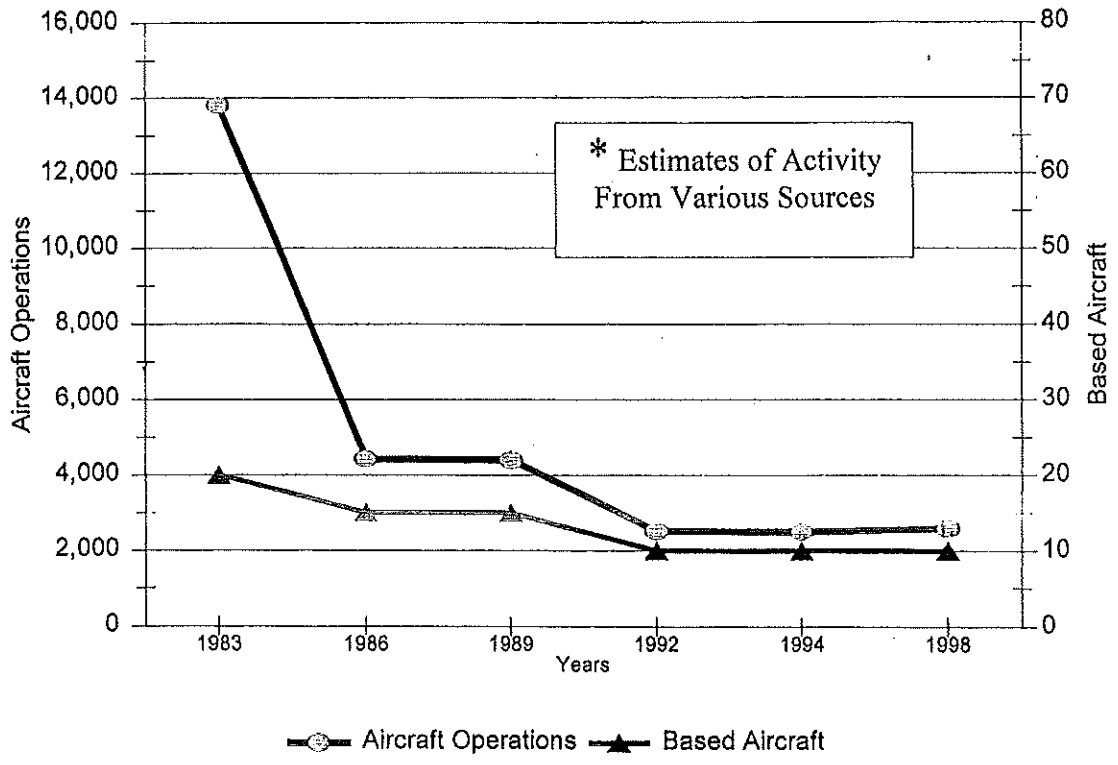


Figure 2-3 (Lexington)
Based Aircraft Forecasts

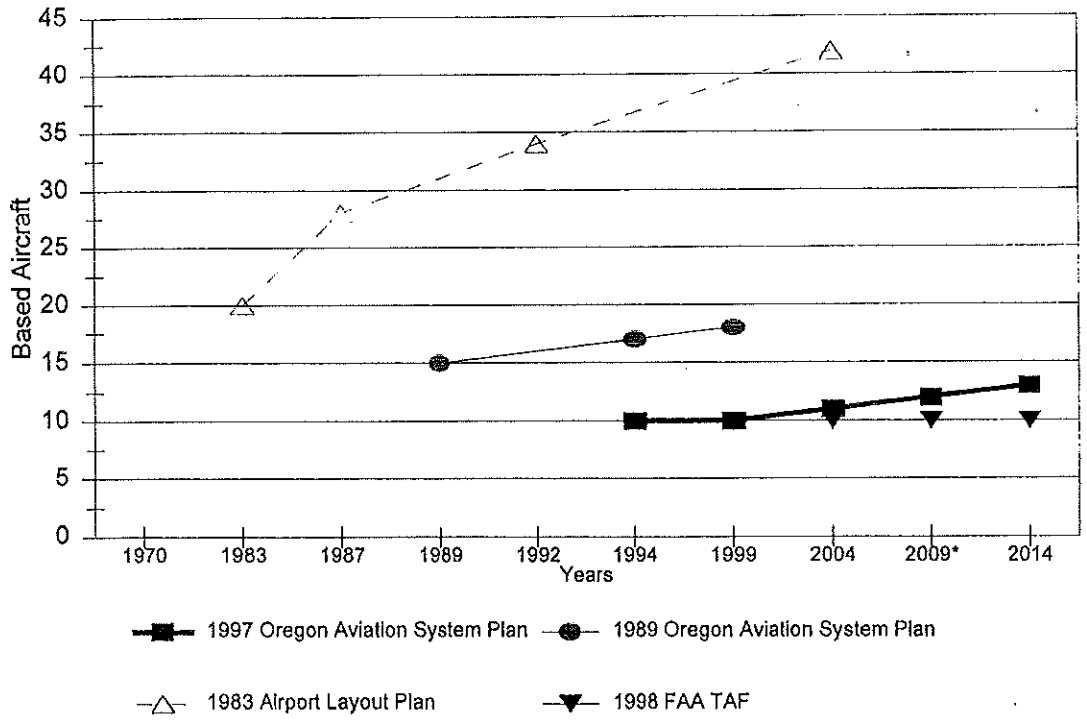
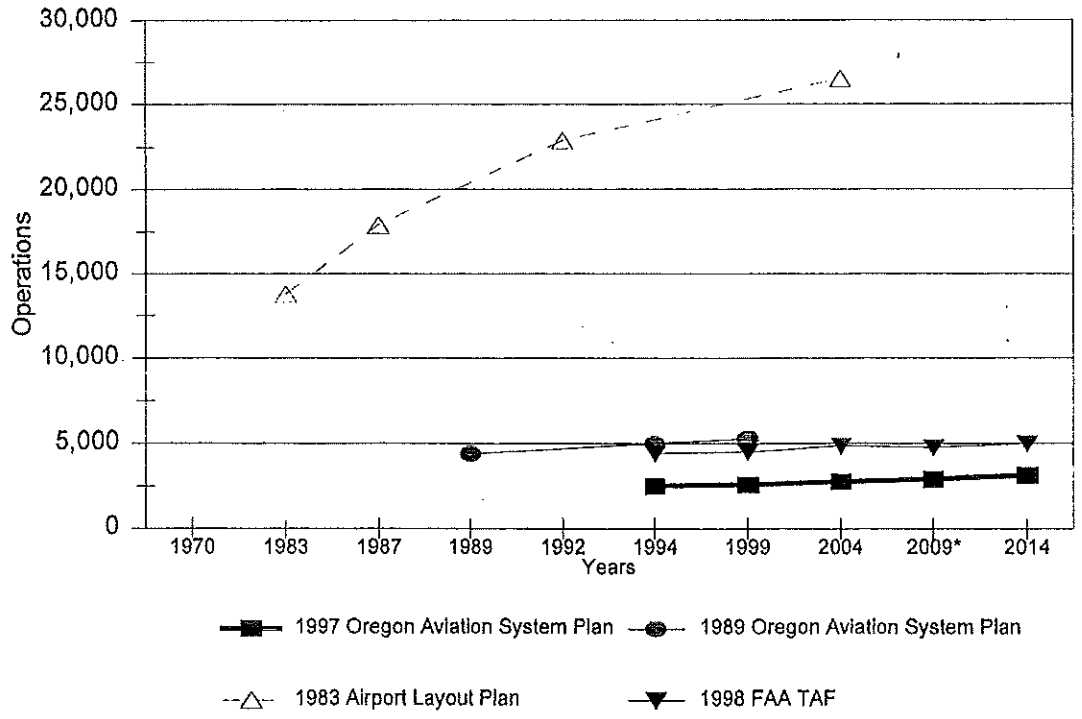


Figure 2-4 (Lexington)
Aircraft Operations Forecasts



Chapter Three
Airport Facility Requirements

INTRODUCTION

To plan for the future needs of Lexington Airport, it is necessary to translate forecast aviation demand--including type and volume--into specified types and quantities of facilities that can adequately serve this identified demand. This chapter uses the results of the inventory, forecast, and demand-capacity analyses conducted in **Chapter Two,** as well as established planning criteria, to determine the airside and landside facility requirements. Airside facilities include runways, taxiways, navigational aids and lighting systems. Landside facilities include hangars, fixed base operator (FBO) facilities, aircraft parking apron, agricultural aircraft facilities, aircraft fueling, automobile parking, utilities and surface access.

The objective of this effort is to identify the adequacy or inadequacy of the existing airport facilities and outline what new facilities may be needed to accommodate forecast demands. Having established facility requirements, alternatives for providing these facilities will be evaluated in **Chapter Four** to determine the most cost effective and efficient means for implementation.

OVERVIEW

The 1983 Airport Layout Plan Report (Ted Soliday, Aviation Consultant) addressed the need for the major runway improvements at Lexington. The original Runway 8-26 was too short and in need of major reconstruction in order to meet design aircraft needs. In 1988, a new runway was constructed and the former Runway 8-26 was converted into the current partial-length parallel taxiway. The runway was designed and constructed based on standards comparable to the current Airplane Design Group II (ADG II) standards. The main runway-taxiway system has not changed since the last major construction project.

Lexington Airport serves a wide range of local and itinerant general aviation users. Local aircraft include a variety of single-engine aircraft, including two turbine agricultural aircraft. The airport has also historically accommodated a limited number of light multi-engine aircraft, although none are currently based at the airport. The airport accommodates itinerant business aviation users associated with county government, forest products, and other resource-related industries. These aircraft include single and multi-engine piston aircraft, turboprops, and some light business jets.

Lexington Airport is the only airport in Morrow County with the airfield facilities capable of accommodating fixed wing medevac flights. The airport currently has the ability to accommodate day and night operations in visual flight rules (VFR) conditions. The absence of an instrument approach and 24-hour on-site weather observation are considered significant facility deficiencies. Adding these capabilities will enhance the airport's ability to perform existing functions with fewer weather-related constraints.

AIRSPACE

The airport is located in a relatively flat plain with mountainous terrain located in all directions within several miles of the airport. Notable airspace features identified in the facility inventory (Boardman MOA, IFR airways, military training routes, etc.) do not present a hazard to the airspace immediately surrounding the airport. The airspace structure surrounding Lexington Airport is relatively uncomplicated and is not expected to constrain future airport development or operation.

INSTRUMENT APPROACH CAPABILITIES

As noted in the facility inventory, the airport does not have published instrument approach procedure (IAP). The airport is currently in the process of obtaining a nonprecision global positioning system (GPS) approach for the airport.

It is anticipated that a straight-in approach to one, or possibly both runway ends can be developed. The approach minimum descent altitude (MDA) will depend on the elevation of surrounding terrain, missed approach procedure requirements, etc. Visibility minimums as low as one mile can be obtained without an approach light system. Protecting the airspace surfaces required for nonprecision instrument approach capabilities is recommended.

AIRPORT DESIGN STANDARDS

The selection of the appropriate design standards for the development of airfield facilities is based primarily upon the characteristics of the aircraft that are expected to use the airport. The most critical characteristics are the approach speed and wingspan of the critical design aircraft anticipated for the airport. Planning for future aircraft use is important because design standards are used to determine separation distances between facilities that could be very costly to relocate at a later date.

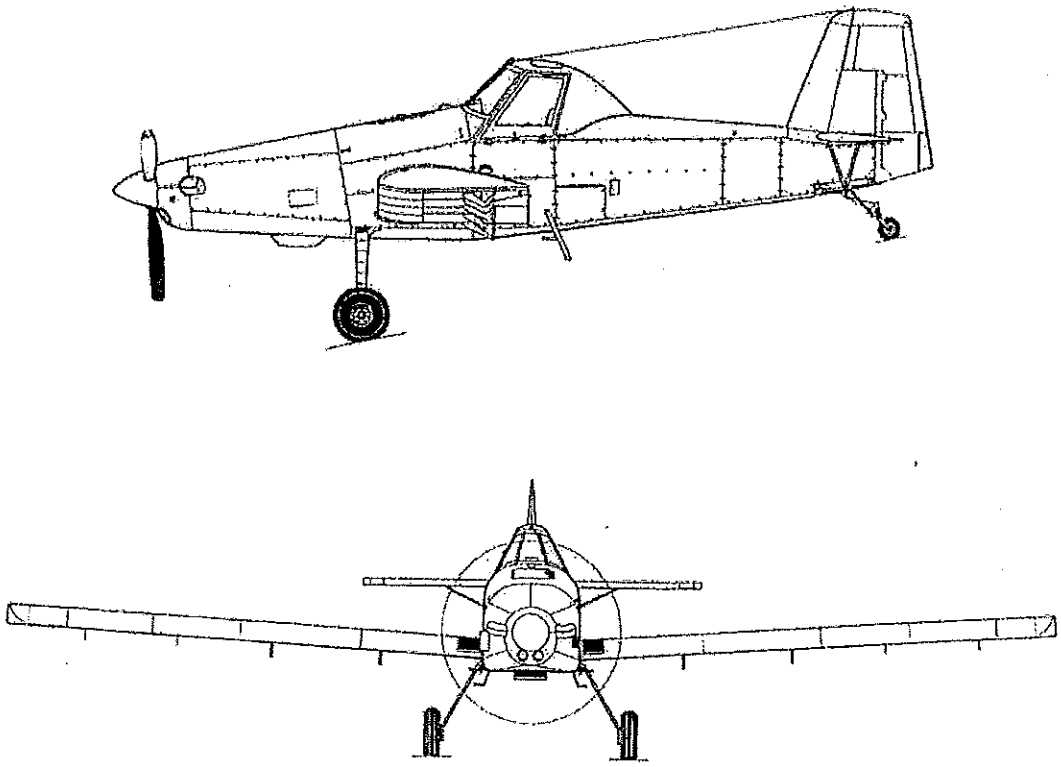
Federal Aviation Administration (FAA) **Advisory Circular (AC) 150/5300-13, Airport Design**, serves as the primary reference in planning airfield facilities. **FAR Part 77, Objects Affecting Navigable Airspace**, defines airport imaginary surfaces which are established to protect the airspace immediately 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.

FAA **Advisory Circular 150/5300-13** groups aircraft into five categories based upon their approach speed. Categories A and B include small propeller aircraft, some smaller business jet aircraft, and some larger aircraft with approach speeds of less than 121 knots. 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; these aircraft have approach speeds of 121 knots or more. The advisory circular also establishes six aircraft design groups, based on the physical size (wingspan) 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.

Historically, most aircraft operating at Lexington Airport have been included in Categories A and B and in Airplane Design Groups I and II. A summary of typical aircraft and their respective design categories is presented in **Table 3-1.**

Lexington has two locally based Air Tractor agricultural aircraft, which are included in Airplane Design Group II (ADG II). These turbine-powered aircraft (models 402B and 502B) have wingspans greater than 50 feet and weigh up to 9,700 pounds. The two aircraft are estimated to account for approximately one-third of annual airport operations (estimated 1,500 operations), although the activity levels vary depending on weather conditions and demand for spraying service. The airport has also periodically accommodated transient aerial applicators operating similar aircraft types. These aircraft represent the typical design aircraft based on wingspan.

The Air Tractor aircraft are designed to operate from short, unimproved runways and therefore do not represent typical runway length requirements of most ADG II aircraft.



Air Tractor 502B
Wingspan 52'- 0"
Max. Gross Takeoff Wt. 9,700 lbs.

Source: Air Tractor Inc, Olney, Texas

Runway length requirements at Lexington may be best represented by the percentage of the general aviation fleet that can be accommodated. The general aviation fleet of aircraft under 12,500 pounds represents the majority of aircraft operating at Lexington, including single and twin-engine piston, turboprop, and smaller business jets. A runway capable of accommodating a large percentage of the GA fleet is generally adequate at most airports unless specific aircraft requirements exist. Based on FAA methodology, the existing runway length can accommodate nearly 99 percent of the small airplanes with 10 or fewer seats, under most conditions.

Itinerant piston twin, turboprop, and business jet traffic, including medevac flights are not specifically recorded, but is estimated to be 100 to 200 annual operations. The addition of an

instrument approach and on-site weather observation will enable the airport to accommodate more of this activity in all weather conditions.

TABLE 3-1
TYPICAL AIRCRAFT & DESIGN CATEGORIES

Aircraft	Design Group	Approach Category	Maximum Gross Takeoff Weight (Lbs)
Cessna 206	A	I	3,600
Beechcraft Bonanza A36	A	I	3,650
Beechcraft Baron 55	A	I	5,300
Piper Aerostar 602P	B	I	6,000
Cessna 340	B	I	5,990
Cessna 402	B	I	6,300
Cessna 421	B	I	7,450
Cessna Citation I	B	I	11,850
Learjet 60	C	I	23,100
Air Tractor 502B	A	II	9,700
Piper Malibu	A	II	4,300
Cessna Caravan 1	A	II	8,000
Beech King Air B200	B	II	12,500
Cessna Citation III	B	II	22,000
Dassault Falcon 20	B	II	28,660
Gulfstream III	C	II	65,300

Source: FAA Advisory Circular (AC) 150/5300-13

Based on local requirements and projected activity, the use of Aircraft Approach Category B and Airplane Design Group (ADG) II standards is considered appropriate for use on Runway 8-26 at Lexington Airport (*Airport Reference Code - ARC B-II*). Airfield design standards for ADG II are summarized in **Table 3-2**. A summary of Lexington Airport's current compliance with the design standards is presented in **Table 3-3**.

TABLE 3-2
AIRPORT DESIGN STANDARDS SUMMARY
(Dimensions in feet)

Standard	ADG II[1] A&B Aircraft
Runway Length	3,660/4,300[3]
Runway Width	75
Runway Shoulder Width	10
Runway Safety Area Width	150
Runway Safety Area Length (Beyond Runway End)	300
Obstacle-Free Zone	250
Object Free Area Width	500
Object Free Area Length (Beyond Runway End)	300
Primary Surface Width	500[1]
Primary Surface Length (Beyond Runway End)	200[1]
Runway Protection Zone Length	1,000[1]
Runway Protection Zone Inner Width	500[1]
Runway Protection Zone Outer Width	700[1]
Runway Centerline to:	
Parallel Taxiway Centerline	240
Aircraft Parking Area	250
Building Restriction Line	404[3]
Taxiway Width	35
Taxiway Shoulder Width	10
Taxiway Safety Area Width	79
Taxiway Object Free Area Width	131
Taxiway Centerline to Fixed/Movable Object	65.5

Notes:

1. Utility runways (Per FAR Part 77); all other dimensions reflect visual or nonprecision runways with not lower than 3/4-statute mile approach visibility minimums (per AC 150/5300-13, Change 5). RPZ dimensions bases on visual and not lower than 1-mile approach visibility minimums.
2. Runway length required to accommodate 95 and 100 percent of General Aviation Fleet 12,500 pounds or less. 91 degrees F, 56-foot change in runway centerline elevation
3. Distance to protect ADG II parallel taxiway object free area and accommodate a 22-foot structure (at the BRL) beneath the 7:1 Transitional Surface.

TABLE 3-3
RUNWAY 8-26 COMPLIANCE
WITH FAA DESIGN STANDARDS

Item	Airplane Design Group II[1] A & B Aircraft
Runway Safety Area	Possible[2]
Runway Object Free Area	Yes
Runway Obstacle Free Zone	Yes
Taxiway Safety Area	Yes
Taxiway Object Free Area	Yes
Building Restriction Line	Yes
Aircraft Parking Line	Yes
Runway Protection Zones	No[3]
Runway-Parallel Taxiway Separation	No[4]
Runway Width	Yes
Runway Length	Yes[5]
Taxiway Width	Yes

Notes:

1. Runway design standards for approach category A&B visual runways and runways with not lower than ¾-statute mile approach visibility minimums.
2. +4-foot terrain located 200 feet beyond runway on centerline (per 1996 5010 inspection); lateral and extended safety area may have been graded since last inspection.
3. The airport access road and State Highway 207 crosses the Runway 26 protection zone, although a significant drop in elevation occurs immediately beyond the runway end. There is no obstruction created to the Runway 26 approach surface by vehicles traveling on the roadways. Fence located within Runway 8 RPZ
4. Existing separation varies between 190 and 215 feet.
5. Per FAA Runway Length Model – length needed to accommodate 95% of the general aviation fleet under 12,500 pounds

Airport Design Standards Note:

The following airport design standards are based on visual runways and runwa ¾ statute mile visibility minimums. For defining runway protection zones (RPZ standard is "visual and not lower than 1-mile." All references to the "standards approach visibility assumptions, unless otherwise noted. (Per FAA Advisory Cir change 6)

RUNWAY SAFETY AREA (RSA)

Runway safety area (RSA) standards exist for dimensions and physical condition (maximum grades, surface condition, etc.). Safety areas are intended to support aircraft that inadvertently leave (or miss) the runway environment during landing or takeoff.

The standard RSA for B-II runways is 150 feet wide, extending 300 feet beyond each runway end. For Runway 8-26, the lateral safety area should extend outward at least 37.5 feet from the edge of pavement. The RSA surrounding Runway 8-26 appears to be free of physical obstructions, although portions of the area may need leveling or filling to meet the width/length standard. The FAA-recommended grade for the lateral (transverse) RSA, beyond the runway shoulder, is between 1.5 and 5 percent.

The area beyond Runway 26 has a treated gravel surface, which extends approximately 200 to 300 feet at a width approximately the same as the runway. A 1996 airport inspection identified rising terrain (estimated +4 foot rise) approximately 200 feet beyond the end of Runway 8. The airport should ensure that the area meets both dimensional and grade standards. For both runway ends, the extended safety areas should provide a clear and level area 150 feet wide by 300 feet long. The FAA-recommended grade for the extended RSA is between 0 and 2 percent.

RUNWAY OBJECT FREE AREA (OFA)

Runway object free areas (OFA) are intended to be clear of ground objects protruding above the runway safety area edge elevation. Obstructions within the OFA may interfere with aircraft flight in the immediate vicinity of the runway.

The standard OFA for B-II runways is 500 feet wide and extends 300 feet beyond each runway end. It appears that the western portion of the Runway 8-26 OFA may be slightly penetrated by rising terrain (as noted above). A fence located 415 feet beyond the runway end is outside the OFA. There are no other obstructions identified in the OFA.

The surface grading recommended for the runway safety area would also address the OFA terrain penetrations.

RUNWAY OBSTACLE FREE ZONE (OFZ)

The obstacle free zone (OFZ) for Runway 8-26 is 250 feet wide and extends 200 feet beyond each runway end. This dimension corresponds with the B-II design aircraft and the visibility minimums provided by nonprecision instrument approaches. The OFZ is a plane of clear airspace extending vertically to a height of 150 feet, which coincides with the FAR Part 77 horizontal surface elevation. There are no penetrations to the Runway 8-26 OFZ, other than the visual approach slope indicators (VASI), which have locations fixed by function.

TAXIWAY SAFETY AREA

The standard taxiway safety area width for all airplane design group II (ADG II) aircraft is 79 feet, centered on the taxiway. The parallel taxiway is able to meet the ADG II standard.

TAXIWAY OBJECT FREE AREA

The standard taxiway OFA for ADG-II is 131 feet wide, centered on the taxiway. The parallel taxiway is able to meet the ADG II standard.

BUILDING RESTRICTION LINE (BRL)

The 1983 Airport Layout Plan depicts an "existing" building restriction line (BRL) along the south side of the runway, 400-feet from runway centerline. The ALP also depicts "future" BRLs located 50 feet from the centerlines of the parallel taxiway and the two main access taxiways. There are no buildings on the airport are located inside the BRLs, as depicted on the 1983 ALP.

The location of the BRLs should be reviewed based on any planned reconfiguration of the parallel taxiway and terminal area facilities. However, a minimum setback based on ADG II taxiway centerline-to-fixed or moveable object dimension (65.5 feet) should be protected along the access taxiways.

The review of BRL locations should also consider typical ground and building roof elevations in order to remain below the Part 77 transitional surface 7:1 slope that extends outward 250 feet from runway centerline. Based on the existing parallel taxiway location and alignment, the "future" BRL location ranges from 245 to 260 feet from centerline. At this distance, all buildings located at or near the BRL would penetrate the transitional surface. It also appears that the existing parallel taxiway may be slightly elevated above the runway, which would increase the height of any obstruction (above runway elevation).

RUNWAY PROTECTION ZONES (RPZ)

Runway protection zones (RPZ) are intended to protect people and property on the ground by restricting development within the RPZ boundary. RPZs are located beyond each runway end and coincide with the inner approach surfaces for runways. RPZs with buildings, roadways, or other items do not comply with FAA standards.

The 1983 ALP depicts clear zone (now runway protection zones) with inconsistent dimensions. The Runway 26 clear zone is identified as being 500 feet (inner width) by 800 feet (outer width) by 1000 feet (length). As drawn however, the clear zone measures 500 x 780 x 875 feet. The Runway 8 clear zone is identified and drawn at 500 x 650 x 1000 feet.

The current RPZ standard on Runway 8-26 is based on visual and not lower than 1-mile approach visibility minimums. The standard RPZ dimensions are 500 feet at the inner width, 700 feet at the outer width, and 1,000 feet in length.

Runway 8 has a fence crossing the RPZ approximately 415 feet from the runway end. It appears that the airport property line at this end of the runway follows a portion of the RPZ boundary. Acquiring property within the entire RPZ would be recommended; acquiring an avigation easement for the RPZ and relocating the fence, may also be an option.

Runway 26 has both the main airport access road (150 feet from inner edge) and Highway 207 (400 feet from inner edge) located within the RPZ. Based on the unique terrain of the area and the limited surface access options available, realigning these roadways outside the RPZ does not appear to be feasible.

AIRCRAFT PARKING LINE (APL)

The 1983 Airport Layout Plan does not depict aircraft parking lines, although it can be assumed that they would correspond with the building restriction lines depicted on the drawing.

The standard APL for B-II is 250 feet from runway centerline, although this distance would need to increase to meet parallel taxiway clearances. Based on a standard parallel taxiway separation of 240 feet, aircraft parking areas could be located approximately 305 feet from runway centerline. However, a 305-foot APL could result in some parked aircraft tail sections penetrating the FAR Part 77 transitional surface. Assuming a tail height of 10 feet for the average single engine aircraft, the aircraft parking line should be a minimum of 320 feet from runway centerline (assuming level ground elevation); parking areas designed to accommodate twin-engine aircraft should be at least 350 feet from the runway. These distances are compatible with a 500-foot wide primary surface, which is recommended for Runway 8-26.

Any future aircraft parking development should be clear of parallel taxiway (or access taxiway) clearances.

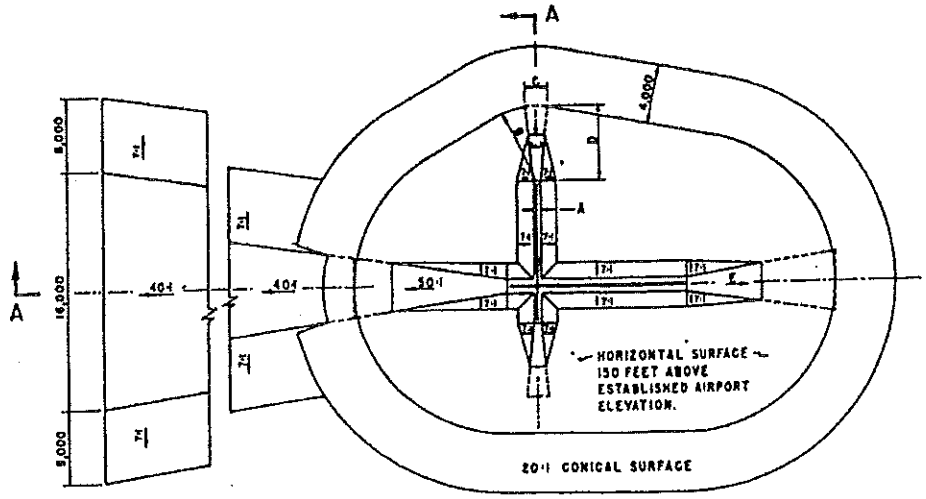
RUNWAY-PARALLEL TAXIWAY SEPARATION

Runway 8-26 has a partial-length parallel taxiway located on the south side of the runway. The taxiway alignment is slightly off parallel, with runway separations ranging from about 185 feet at the Runway 26 end, to approximately 200 feet at the west end of the taxiway.

The standard B-II runway-parallel taxiway separation is 240 feet. As noted in the pavement evaluations, the taxiway will require reconstruction during the current planning period due to its deteriorated condition. Relocating the taxiway to meet the runway separation standard should be completed as part of the reconstruction project.

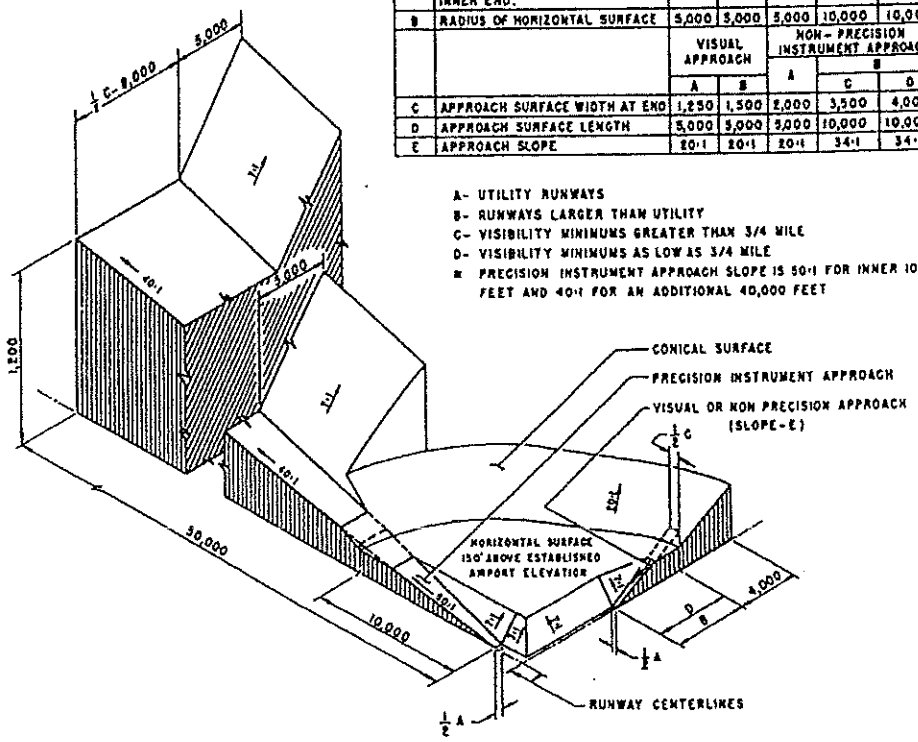
FAR PART 77 SURFACES

Airspace planning for U.S. airports is defined by Federal Air Regulations (FAR) Part 77 – Objects Affecting Navigable Airspace. FAR Part 77 defines imaginary surfaces (airspace) to be protected surrounding airports. The diagram on the following page illustrates plan and isometric views of the Part 77 surfaces.



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B C	B D	
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
		VISUAL APPROACH		NON-PRECISION INSTRUMENT APPROACH			PRECISION INSTRUMENT APPROACH
		A	B	A	B C	B D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

A- UTILITY RUNWAYS
B- RUNWAYS LARGER THAN UTILITY
C- VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
D- 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



ISOMETRIC VIEW OF SECTION A-A

§ 77.25 CIVIL AIRPORT IMAGINARY SURFACES

DESIGNED BY: DM	CHECKED BY:	CENTURY WEST ENGINEERING CORPORATION 825 NE Multnomah Suite 425 Portland, Oregon 97232 503-231-6078 phone * 503-231-6182 fax	DATE:
DRAWN BY: JLM	SCALE: NONE		FIGURE: 3-1
FILE: 41007002.01.7EM.DWG			

The 1983 Approach and Clear Zone Plan airspace surfaces that are consistent with nonprecision instrument approach capabilities and utility runways. Terrain penetrations were identified east of the runway in the approach, horizontal and conical surfaces. **Table 3-4** summarizes FAR Part 77 standards with the corresponding runway type and instrument approach capability.

For airspace planning purposes, the use of utility runway standards with nonprecision instrument capabilities (per FAR Part 77) is appropriate.

TABLE 3-4
FAR PART 77 AIRSPACE SURFACES

Item	Utility (Nonprecision)[1, 2]
Width of Primary Surface	500 feet
Radius of Horizontal Surface	5,000 feet
Approach Surface Width at End	2,000 feet
Approach Surface Length	5,000 feet
Approach Slope	20:1

Notes:
1. Visibility minimums greater than ¾ mile.
2. As Depicted on 1983 Approach and Clear Zone Plan - Morrow County Airport
3. Utility runways are designed for aircraft weighing 12,500 pounds or less.

APPROACH SURFACES

Runway approach surfaces extend outward and upward from each runway end, along the common arrival and departure path for aircraft. The FAR Part 77 standard slope for utility runway approach surfaces is a 20:1. The inner edge of the approach surface connects to the primary surface and extends outward 5,000 feet. For Runway 8-26, the inner width of the nonprecision approach slope is 500 feet and the outer width is 2,000 feet.

The 1983 Approach and Clear Zone Plan identified a small area of terrain penetration in the approach surface for Runway 26 (approximately 4,700 feet from the beginning of the surface). As noted earlier, a fence located approximately 415 feet from the end of Runway 8 penetrates the 20:1 approach surface. The FAA 5010 Airport Record Form indicates that a 50:1 unobstructed approach surface exists beyond the fence. Removal or relocation of the fence would eliminate the obstruction and provide a clear approach surface for Runway 8.

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 should be free of any penetrations, except items with locations fixed by function (i.e., VASI, edge lights, etc.). The primary surface end connects to the inner portion of the runway approach surface.

The FAR Part 77 standard primary surface for Runway 8-26 is 500 feet wide, centered on the runway. This width meets the standard for utility runways with nonprecision approaches.

The 1983 Approach and Clear Zone Plan identified no penetrations to the primary surface; however, the terrain more recently identified beyond Runway 8, may penetrate the outer portion of the primary surface.

TRANSITIONAL SURFACE

The transitional surface is located at the outer edge of the primary surface, represented by a plane of airspace which 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.).

The 1983 Approach and Clear Zone Plan identified no penetrations to the transitional surface. No existing structures penetrate the runway transitional surface for Runway 8-26.

HORIZONTAL SURFACE

The horizontal surface is a flat plane of airspace located 150 feet above runway elevation. The outer boundary of the Runway 8-26 horizontal surface is defined by two 5,000-foot radii, which extend from the runway ends (the intersection point of the extended runway centerline, the outer edge of primary surface, and the inner edge of the approach surface). The outer points of the radii for each runway are connected to form an oval, which is defined as the horizontal surface.

The 1983 Approach and Clear Zone Plan identified a small area of terrain penetration to the horizontal surface, approximately 4,200 feet east of the runway. The terrain in this area rises to an elevation of approximately 1,830 feet MSL.

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 will be 200 feet above the horizontal surface and 350 feet above airport elevation.

The 1983 Approach and Clear Zone Plan identified an area of terrain penetration to conical surface, east of the runway. The terrain in this area rises to an elevation of approximately 2,100 feet MSL.

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

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. The runway (8-26) at Lexington Airport is oriented in an east-west direction and is generally in line with prevailing winds.

When landing and taking off, aircraft are able to maneuver on a runway as long as the wind component perpendicular to the aircraft's direction of travel (defined as crosswind) is not excessive. For runway planning and design, a crosswind component is considered excessive at 12 miles per hour for smaller aircraft (gross takeoff weight 12,500 pounds or less) and 15 miles per hour for larger

aircraft. FAA planning standards indicate that an airport should be planned with the capability to operate under allowable wind conditions at least 95 percent of the time.

The 1983 Airport Layout Plan Report indicated that Runway 8-26 was expected to have wind coverage in excess of 95 percent, based on a 12 mile per hour direct crosswind component. The wind data used in the analysis was from the airports in Pendleton, Condon, and The Dalles. The 1983 Airport Layout Plan drawing listed wind coverage at 94.1 percent. Obtaining current on-site wind data would provide a better indication of Runway 8-26 wind coverage. Based on preliminary evaluations, the 12-mile per hour wind coverage would probably be within 1 to 2 percentage points of the FAA-recommended 95 percent coverage standard.

Local pilots indicate that strong seasonal northeast-southwest crosswinds are common, making landing on Runway 8-26 difficult. A portion of the former crosswind runway is still used by local pilots during these strong wind conditions. Although the area may be adequate for limited emergency use, it does not provide enough area to accommodate standard safety area, runway protection zones, etc. Additional property acquisition would be required to redevelop a crosswind runway capable of meeting FAA design standards.

Runway Length

Runway 8-26 has a published length of 4,150 feet (12/8/98 U.S. Government Airport/Facility Directory). 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.

Based on local conditions and the methodology outlined in **AC 150/5325-4A**, a runway length of 4,300 feet would be required to accommodate 100 percent of small aircraft (12,500 pounds or less maximum gross takeoff weight) in the general aviation fleet. **At 4,150 feet, Runway 8-26 is capable of accommodating approximately 99 percent of the general aviation fleet** in the same conditions. A summary of FAA-recommended runway lengths for a variety of aircraft types and load configurations are described below.

FAA Runway Lengths Recommended For Airport Design (From FAA Computer Model):

Airport Elevation: 1,634 MSL
Mean Max Temperature in Hottest Month: 91.0 F
Maximum Difference in runway centerline elevation: 56 Feet
Current Runway Length: 4,150 feet

Small Airplanes with less than 10 seats
75 percent of these airplanes 3,070 feet
95 percent of these airplanes 3,660 feet
100 percent of these airplanes 4,300 feet
Small airplanes with 10 or more seats 4,600 feet

Large Airplanes of 60,000 pounds or less
75 percent of these airplanes at 60 percent useful load 5,530 feet
75 percent of these airplanes at 90 percent useful load 7,460 feet
Airplanes of more than 60,000 pounds 5,590 feet

The existing runway length of 4,150 feet is able to accommodate most business jet or turboprop aircraft, except during very high temperatures. Based on the selected design aircraft and projected activity, Runway 8-26 appears to be adequate to accommodate the majority of aircraft in the most common local weather conditions.

The existing width of Runway 8-26 is 75 feet, which meets the Airplane Design Group (ADG) II standard.

AIRFIELD PAVEMENT

According to the data contained in the 1997 pavement condition report, more than 70 percent of Lexington's airfield pavements were rated "very good" or "excellent." These pavement sections (runway, main apron, fueling area) were reconstructed or resurfaced as part of the major runway construction in 1988. However, beyond these sections, the average condition of the remaining airfield pavements ranges from "poor" to "failed." Many of these sections have visible gravel accumulations mixed with broken pavement. **Table 3-5** summarizes the existing condition of airfield pavements at Lexington.

The 1997 PCI Report outlined a five-year pavement maintenance and rehabilitation program, which included the following items:

- Parallel taxiway (west end – remove BST and reconstruct; east end – 2" asphalt overlay)
- NE-SW West Diagonal taxiway (reconstruct)
- West End of Apron (reconstruct)
- Miscellaneous slurry seal projects (runway, main apron, fueling area, taxiway connectors)
- Localized areas of crack sealing, slurry seal, fog seal, and deep asphalt concrete patching

TABLE 3-5
SUMMARY OF AIRFIELD PAVEMENT CONDITION

Pavement	PCI Rating [1]	Condition
Runway	82	Very Good
Parallel Taxiway	18 – western 1,250 feet 38 – eastern 1,479 feet	Very Poor Poor
Parallel Taxiway West Exit	71	Very Good
West Access Taxiway	16	Very Poor
East Access Taxiway	89 (between runway and parallel txy) 100 (between parallel txy and apron)	Excellent Excellent
Main Apron	61	Very Good
Aircraft Fueling Area	84	Very Good
West Apron	0	Failed
Taxiway Connector (Apron to West Access Taxiway)	4	Failed

1. The Pavement Condition Index (PCI) scale ranges from 0 to 100, with seven general condition categories ranging from "failed" to "excellent." For additional details, see *Oregon Aviation System Plan Pavement Evaluation/Maintenance Management Program* (1997) for Lexington Airport.

Runway and Taxiway Pavements

The surface of the runway is in very good condition, showing only normal wear. The current Airport/Facility Directory, published by NOAA, lists Runway 8-26 having a pavement strength of 4,000 lbs. (single wheel land gear design), although some state data suggests the pavement is rated at 12,500 pounds. The standard pavement weight bearing capacity for runways serving general aviation aircraft is 12,500 pounds. The parallel taxiway and access taxiways have a minimal depth subbase (typically 3 to 4 inches) and a BST surface, which does not provide the same pavement strength as the runway. All future improvements to the runway and taxiway pavements should be based on the 12,500 pounds weight bearing capacity.

Existing pavement markings also require periodic repainting.

Aircraft Apron Pavements

As noted in the PCI Report, the main apron and fueling areas are in very good condition. The western extensions of the apron have failed and require reconstruction. The overall apron area may require some reconfiguration and/or expansion to accommodate the variety of uses (hangars,

tiedowns, fueling, business aircraft parking, AG aircraft facilities, etc.). New pavements should be designed to meet the 12,500 pound single wheel standard.

AIRFIELD CAPACITY

The hourly capacity of Runway 8-26 is approximately 82 to 92 operations during visual flight rules (VFR) conditions. Based on forecast operations, the runway will continue to operate below capacity during the twenty-year planning period and well beyond.

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.

Runway 8-26 is served by a partial parallel taxiway, located 190 to 215 feet from the runway centerline. The standard B-II runway-parallel taxiway separation is 240 feet. As noted earlier, the taxiway will require reconstruction during the current planning period due to its deteriorated condition. Relocating the taxiway to meet the runway separation standard should be considered as part of the reconstruction.

The existing taxiway width of 40 feet exceeds the ADG II standard of 35 feet. New taxiways should be designed to meet the ADG II 35-foot standard.

The runway has two exit taxiways connected to the parallel taxiway. The exits are located at the end of Runway 26 and approximately 2,500 feet to the west. Adding another exit taxiway on the east end of the runway could reduce aircraft taxiing time and improve access to the terminal area.

Although the need to extend taxiway access to the Runway 8 end was identified as a possible facility improvement during the facility inventory, is not generally considered a high priority project. An extension of the existing (south) parallel taxiway is considered difficult due to terrain and property ownership issues. Available options for providing taxiway access to Runway 8 end will be evaluated in the alternatives analysis. A parallel taxiway extension should be identified as a long-term project with the area reserved and any associated property acquisition needs identified on the airport layout plan.

Airport users have identified a need to provide improved taxiway access from the terminal area toward the west end of the runway-taxiway system. A northwest-southeast taxiway connection between the terminal area and parallel taxiway would reduce aircraft taxiing time and improve access to the terminal area.

AIRFIELD INSTRUMENTATION AND LIGHTING

Runway 8-26 has medium-intensity runway edge lighting (MIRL), the standard for general aviation runways. Runways 8 and 26 are equipped with visual approach slope indicators (VASI).

Runway end identifier lights (REILs) are generally recommended for instrument runways without approach lights. REILs consist of two sequenced strobes that provide rapid and positive identification of the approach end of the runway. REILS improve utilization of the runway during nighttime and poor visibility conditions. The airport is in the process of obtaining a straight-in GPS instrument approach. REILs should be located at both runway ends once an approach is commissioned.

Precision Approach Path Indicators (PAPI) are currently used as the primary visual guidance system. The existing VASIs on Runway 8 and 26 should be replaced at the end of their useful life with PAPIs.

The existing taxiway system does not have lighting or edge reflectors. Adding reflective edge markers on the access taxiways is recommended for nighttime operations. Adding medium-intensity taxiway edge lighting (MITL) would also be an option, although based on the relatively low level of nighttime operations and the cost of lighting, reflectors would be adequate.

The aircraft apron and hangar areas have limited flood lighting. Flood lighting is recommended for all operations areas for improved utilization and security.

The airport beacon may reach the end of its useful life within the current planning period. Local pilots indicate that the location and height of the beacon may not be adequate for maximum visibility from the air. Raising the beacon or relocating it to provide better visibility is recommended.

ON-FIELD WEATHER DATA

The airport does not have an automated weather observation system (AWOS) located on the field. An AWOS or comparable system is needed to satisfy weather observation requirements for general aviation and commercial operations (i.e. charter flights, medevac, etc.).

LANDSIDE FACILITIES

The purpose of this section is to determine the space requirements during the planning period for the following types of facilities normally associated with general aviation operations areas:

- **Hangars**
- **Aircraft Parking and Tiedown Apron**
- **Agricultural Aircraft Facilities**

HANGARS

The 1998 estimate of ten based aircraft included two agricultural aircraft that are stored in a hangar located off the airport. It is estimated that 90 percent of the remaining based aircraft are typically stored in hangars.

All hangars are located in the terminal area, at the southeast corner of the airport. As described in the facility inventory, the on-airport hangars include one conventional hangar, one Quonset-style hangar, and one 7-unit shade hangar. The local aerial applicator has a large conventional hangar located off airport property. It is estimated that the on-airport hangars could provide storage for up to 10 light aircraft, although some portions of the existing buildings are being used for equipment or vehicle storage.

It is expected that the level of hangar utilization will remain relatively high during the planning period with at least 80 percent of based aircraft utilizing hangar storage. A planning standard of 1,500 square feet per based aircraft stored in hangars was used.

The projected hangar needs for Lexington are presented in **Table 3-6.** Based on fairly flat projections of growth in based aircraft, it appears the existing hangar space should be able to absorb much of the future demand for hangars during the planning period. However, individual aircraft owners needs vary and demand can be influenced by a wide range of factors beyond the control of an airport.

It is recommended that hangar development areas and reserves be established to accommodate a range of demand and provide the most flexibility for the airport. Relying too heavily on conservative projections of demand could result in underestimating space requirements and creating unnecessary

development constraints. Reserves should be established to accommodate a combination of large and small conventional hangars and T-hangars.

AIRCRAFT PARKING AND TIEDOWN APRON

Aircraft parking apron should be provided for locally based aircraft which are not stored in hangars and for transient aircraft visiting the airport. Currently, the majority of locally based aircraft at Lexington are stored in hangars. There is one primary aircraft parking apron at Lexington Airport, which accommodates local and itinerant aircraft.

The main apron is approximately 310 feet by 185 feet (6,370 square yards), with adjacent fueling area (1,720 sy) and a tiedown area (6 designated spaces). The main apron is used for aircraft loading, unloading and parking for passengers, agricultural aircraft ground operations, and medevacs. The aircraft fueling area is located directly adjacent to the main apron. The space requirements for aircraft taxiing and ground operations on the main apron significantly reduce the space available for tiedowns.

FAA **Advisory Circular 150/5300-13** suggests a methodology by which itinerant parking requirements can be determined from knowledge of busy-day operations. At Lexington Airport, the number of itinerant spaces was determined to be approximately 30 percent of busy day itinerant operations. The FAA planning criterion of 360 square yards per itinerant aircraft was applied to the number itinerant spaces to determine future itinerant ramp requirements. Locally based aircraft tiedowns are planned at 300 square yards per position. The aircraft parking area requirements are summarized in **Table 3-6.**

Although a reconfiguration of the existing apron areas may be needed, it appears that gross space requirements will be modest through the planning period. However, as noted earlier, large portions of the existing aprons have very poor or failed pavement areas. The overall terminal area requirements will reflect functional aircraft parking and circulation requirements based on local conditions. In addition, apron reserves should be identified to accommodate any unanticipated needs, and the needs beyond the current planning period.

Adequate areas also need to be reserved for aircraft fueling and passenger loading/unloading in the area immediately adjacent to the fixed base operator. The airport recently indicated that a private company has expressed interest in renovating the main airport terminal/FBO building, part of which apparently would be used in their outdoor guiding business. Increased use of the building would benefit by improved aircraft and vehicle access.

Aircraft circulation also becomes increasingly important when itinerant corporate aircraft, AG aircraft, and light aircraft tiedowns share the same area. The configuration of the apron should provide a smooth flow for all aircraft and ground operations.

AGRICULTURAL AIRCRAFT FACILITIES

The existing agricultural aircraft facilities at the airport are located on- and directly adjacent to airport property. The area located along the back of the aircraft apron is used primarily for storage of equipment, water and mixing tanks, vehicles and chemical/pesticides drums and pallets. AG aircraft loading, fueling and other ground servicing occurs primarily in this area.

The airport does not currently have a common use loading/rinse facility for agricultural aerial applicators. Developing a rinse facility on the airport was identified as a primary facility need during the facility inventory process.

The design of rinse facilities can vary greatly depending on size and intended use. In general, these facilities are designed to capture rinse or spilled application on an impervious hard surface. The pad is sloped toward drains, which is piped to collection tanks. The collected liquid is recycled or disposed off-site. The sizing of the pad, collection and storage capacity, and other features depend designed use and agency regulations.

An example of a relatively new rinse facility can be found at Hermiston Municipal Airport. This facility, which meets current state and federal environmental regulations for containment, has a pad, which is approximately 80 x 80 feet, several storage tanks, and an equipment storage building. This type of rinse facility would be adequate for use by most agricultural aircraft. If a new rinse facility is developed, all aerial applicator loading and rinse activities should be limited to this facility.

When considering siting alternatives, it will be desirable to provide some physical separation between the AG facilities and general aviation parking and fueling areas. AG operators require a quick turnaround with minimal ground time. Aircraft access to and from the runway-taxiway system should be convenient and clear of aircraft parking and fueling activities.

TABLE 3-6
APRON AND HANGAR
FACILITY REQUIREMENTS SUMMARY

Item	Base Year (1994)	1999	2004	2014
Demand				
Based Aircraft	10	10	11	13
Itinerant GA Peak Day Aircraft[1]	3	3	3	3
Existing Facilities				
Light Aircraft Tiedowns	5			
Business Aircraft Parking Spaces[2]	0[2]			
On-Airport Hangar Spaces[3]	10 spaces / 14,400 sf (estimated)			
Total Apron Area	10,100 sy			
Projected Needs				
Itinerant Aircraft Parking (@ 360 sy each)	3 spaces / 1,080 sy	3 spaces / 1,080 sy	3 spaces / 1,080 sy	3 spaces / 1,080 sy
Locally-Based Tiedown Needs (@ 300 sy each)	2 spaces / 600 sy	2 spaces / 600 sy	3 spaces / 900 sy	3 spaces / 900 sy
Business Aircraft Parking (@ 600 sy each)	1 spaces / 600 sy	1 spaces / 600 sy	2 spaces / 1,200 sy	2 spaces / 1,200 sy
Total Apron Needs	6 spaces / 2,280 sy	6 spaces / 2,280 sy	8 spaces / 3,180 sy	8 spaces / 3,180 sy
On-Airport Hangar Spaces (@ 1,500 sf per space)	8 spaces / 12,000 sf	8 spaces / 12,000 sf	9 spaces / 13,500 sf	10 spaces / 15,000 sf

1. Assumes 30% of busy day itinerant aircraft operations
2. Limited parking for itinerant twin-engine turboprop or business jet is located on the main apron, but reduces light aircraft tiedowns.
3. Estimate of existing hangar spaces and square footage; some buildings used primarily for equipment storage.

SURFACE ACCESS REQUIREMENTS

Surface access to the airport appears to be adequate for the planning period. Vehicle access within the airport terminal area may require some improvements as new facility development occurs. Vehicle access to the existing agricultural aircraft area is limited, and most access occurs from the apron side.

Vehicle parking in the terminal area appears to be adequate based on current needs; the area could be expanded to accommodate increased demand for vehicle parking. Additional parking should be provided adjacent to new hangars.

SUPPORT FACILITIES

TERMINAL AREA FACILITIES

The airport office/terminal was recently renovated to upgrade interior space for local and itinerant users. The existing building may require additional upgrades or renovation, but appears to be adequate in space and general configuration to meet current and anticipated needs.

AVIATION FUEL STORAGE

Aviation gasoline (AVGAS) is available at Lexington Airport. The airport has one aboveground 6,000-gallon tank. Jet Fuel is not available for public sale at the airport, although the local aerial applicator maintains a private 12,000 gallon above ground storage tank for Jet Fuel. Aside from the needs of the aerial applicator, it appears that the demand for retail sales of Jet Fuel at the airport is very limited. For the purposes of evaluating airport fuel storage requirements, it is assumed that private fueling needs will be addressed by individual users.

A review of fuel delivery records indicated approximately 5,500 gallons of AVGAS was delivered to the airport in 1998. Recent estimates of air traffic at the airport range from around 2,500 to 4,000 annual operations. It is estimated that piston aircraft operations account for approximately 70 percent of total activity, with the two locally based turbine agricultural aircraft accounting for about 30 percent of current aircraft operations. This level of activity would equate to approximately 2 gallons of AVGAS per piston aircraft operation.

Using the FAA's terminal air forecasts (TAF) as a more aggressive projection, aircraft operations at Lexington are expected to increase to nearly 5,000 by the end of the 20-year planning period. If the

current 70/30 split between piston and turbine operations holds true, approximately 3,500 annual piston aircraft operations may be expected at the end of the planning period. In 2014, the peak month is projected to be 1,000 operations (estimated to be 20% of annual operations) and piston aircraft could account for approximately 700 peak month operations. By using the current average of 2 gallons of AVGAS per piston operation, the peak month storage requirements would be approximately 1,400 gallons by the end of the current planning period.

Annual fuel consumption could be expected to range between 6,000 and 10,000 gallons per year through the current planning period. Based on forecast activity levels, the existing 6,000-gallon capacity will be adequate through the planning period. The existing capacity could also accommodate demand well beyond projected levels through more frequent product restocking.

Adding additional storage capacity or different fuel grades will be primarily dictated by market conditions. To protect long-term potential, the area located adjacent to the existing tanks should be reserved for expanded fuel storage requirements.

AIRPORT UTILITIES

The airport has water, sewer (septic and drain field), electrical, and telephone service.

Increasing water storage on the airport to improve fire safety has been identified by airport users as an important facility improvement. The airport should consult with local fire officials to determine a storage capacity, which could support fire protection for buildings and aircraft. Although, the local aerial applicator has a 20,000-gallon storage tank, which has been offered for use in airport fire protection, additional capacity may be needed.

Upgrading the existing water service to the airport may coincide with the potential development of industrial land north of the airport and extension of city services. If that option does not materialize, airport management should consider upgrading the well, distribution, and storage capabilities on the airport.

Overhead electrical lines should be buried whenever possible; new electrical connections to hangars or other airfield developments should also be placed underground. New airfield electrical requirements include providing power to the AWOS and REILs.

SECURITY

The airport has wire fencing along its boundary. Chain-link fencing and gates should be considered where the access road enters the terminal area to protect active airfield areas, aircraft tie-down and hangar areas and fueling. Upgrading fencing around the airport property line or to surround active areas of the airfield may be helpful in reducing animal incursions.

Additional flood lighting should be provided around the aircraft parking apron, fueling area, and hangar areas to maintain adequate security.

FACILITY REQUIREMENTS SUMMARY

The facility requirements for Lexington Airport are largely related to maintaining existing airfield capabilities through preservation and modernization. For the most part, the need for new or expanded facilities, such as aircraft hangars, will be market driven. In general, Lexington Airport has excellent facilities capable of accommodating a wide range of user needs.

The projected twenty-year facility needs are summarized in **Table 3-7**. The next step in the planning process is to analyze alternatives that can accommodate these requirements.

The forecasts of aviation activity contained in Chapter Two anticipate nominal growth in activity that will result in modest facility demands beyond existing capabilities. The basic airfield facilities have the ability to accommodate a significant increase in activity, without requiring major facility upgrades or expansion.

Considerable pavement-related needs are anticipated during the 20-year planning period, including normal preservation, overlays and major reconstruction. The frequency of regular pavement maintenance (vegetation control, crack filling, and seal coats) will in part determine how quickly existing pavements deteriorate.

TABLE 3-7
FACILITY REQUIREMENTS SUMMARY

Item	Short Term	Long Term
Runway	Pavement Maintenance[1] RSA /OFA Grading/Fill	Pavement Maintenance Pavement Overlay
Taxiways	NW/SE Diagonal Access Taxiway Reconstruct/Relocate Parallel Taxiway	Pavement Maintenance Additional Exit Taxiway to Parallel Txy. Taxiways to New Development Areas Parallel Taxiway Extension/Reserve
Main Apron	Pavement Maintenance Reconfiguration of Apron	Pavement Maintenance Apron Development Reserves Pavement Overlay
Fueling Area	Pavement Maintenance	Same
Tiedown Apron	Pavement Maintenance Reconfiguration of Tiedowns	Pavement Maintenance Development Reserve
Agricultural Aircraft Facilities	Rinse Pad with Collection Tanks Designated AG Operations Area Lease Area for AG Operations	None
Hangars	Reserves for T-hangar and Conventional Hangar Development	Same
Navigational Aids and Lighting	GPS Nonprecision Instrument Approach Automated Weather System (AWOS/ASOS) REIL (Rwy 8 & 26) Taxiway Edge Reflectors Flood Lighting (a/c parking & fueling areas)	Replace VASI w/ PAPI (Rwy 8 & 26) Replace/Relocate Airport Beacon
Airport Buildings	Maintenance on FBO hangar/office	Same
Fuel Storage	None	Fuel Storage Reserve
Utilities	Water System Improvements (storage and distribution) Extend Water/Electrical to Lease Areas	Same
Roadways	Improved Hangar and AG Facility Access	Same
Security	Terminal Area Fencing; Flood Lighting	Same

1. Vegetation control, crackfill, sealcoat

Chapter Four
Development Alternatives
Airport Layout Plan

Overview

The evaluation phase of the Airport Layout Plan Update project began with preliminary development concepts being presented at a public meeting in Lexington. Based on the facility requirements analyses, facility needs were identified and incorporated into two primary development alternatives. The process of identifying and evaluating development options provided an opportunity for the local community to be directly involved with planning of airport improvements. Airport users, the general public, Morrow County staff, and Oregon Department of Aviation staff each provided input regarding the development concepts, which allowed for the refinement of alternatives. Following the public review of the conceptual options, a preferred alternative was created that contained the desired development components. The preferred alternative configuration will be depicted on the Airport Layout Plan.

The alternatives for Lexington Airport focus on facility improvements in the terminal area and to the runway-taxiway system. Primary facility needs include a reconfigured and expanded main apron with adequate space for based and transient aircraft tiedowns, business aircraft parking, and medevac loading area. The existing agricultural (AG) aircraft operations area located along the south edge of the main apron will be relocated in both alternatives. This area, which includes equipment and application storage, is located within 200 feet of a city water well and 75,000 gallon cistern. The City of Lexington has indicated that relocating the AG facilities away from the water supply is very desirable.

Both options include a relocated south parallel taxiway, a new diagonal taxiway connecting the terminal area with the parallel taxiway, and a north parallel taxiway extension to the end of Runway 8.

Option A

This option reconfigures light aircraft tiedowns, parking for itinerant corporate aircraft, and relocates the fuel area to the east end of the main apron, in front of the airport office/terminal. Two rows of T-hangars would be located between the parallel taxiway and the main apron, adjacent to the segmented

circle. A single row of light aircraft tiedowns would be located immediately south of the 7-unit open front hangar. Two corporate aircraft positions would be located east of the hangar, where light aircraft tiedowns are currently located. A new agricultural aircraft operations and lease area is located south of the new diagonal taxiway connecting the terminal area and parallel taxiway. The AG area would require fill to provide a fully developable site. The facility would include a loading pad with secondary containment, parking apron and a lease area for hangars, storage buildings, equipment storage, etc.

Option B

This option includes a major reconfiguration of the main apron, including demolition of the existing 7-unit hangar and the addition of a larger diagonal taxiway loop serving the facilities. In this option, the diagonal taxiway is located further to the southwest, providing a larger development area for hangars and apron development inside the taxiway loop, but requiring additional fill to construct the taxiway. The main apron would be reconfigured with three primary development areas. A row of corporate parking positions and the relocated fueling area would be located in the area currently containing the 7-unit hangar. A single row of light aircraft tiedowns and the relocated AG operations facility would be located at the outer edge of the apron. A lease area for three T-hangars (or several smaller conventional hangars) would be located near the building restriction line (BRL).

Preferred Alternative

The preferred alternative reconfigures the main apron and improves taxiway access between the terminal area and the runway-taxiway system. New developments include a light aircraft tiedown apron, an AG aircraft operations and lease area, and new sites for hangars.

An 800-foot diagonal taxiway and a 350-foot cross taxiway will loop between the east access taxiway/fueling area and the parallel taxiway. South of the taxiway loop will be the reconfigured main apron with corporate aircraft parking, loading area for itinerant and medevac aircraft, and several small/medium conventional hangar sites. As noted earlier, the poor condition of the pavement in this area indicates that the apron will require reconstruction. The hangar sites are intended to accommodate several small/medium conventional hangars; space for T-hangar construction is provided north of the diagonal taxiway.

Immediately south of the diagonal taxiway is the site for the relocated AG aircraft facilities. This terrain in this area drops significantly and will require some fill to develop the site. Initially, the area would include a loading pad with secondary containment, a small parking apron, and lease area for equipment storage or buildings. The first phase of this development would occur near the intersection of the new diagonal taxiway and the existing NE/SW taxiway where fill requirements would be less. The existing dirt access road entering this area would be reconstructed to provide improved access to the AG facilities and the southern row of hangars along the main apron. The entire area located along

the south side of the diagonal taxiway is reserved for agricultural aviation or aviation related use. This area will require a substantial amount of fill to support future development. As a long-term development reserve, the County could gradually fill and grade the area as inexpensive fill materials become available through other construction projects in the area.

A new aircraft tiedown apron and sites for hangar development are located north of the taxiway loop. The tiedown apron would abut the fueling area and would have taxiway connections to the east access taxiway and the cross taxiway abutting the reconfigured main apron. The apron would provide nine aircraft tiedowns in three rows; the two outer rows of tiedowns would face inward and the center row would provide tail-in parking. This apron area will be capable of accommodating projected demand for aircraft parking through the current planning period. An apron reserve extends to the north to provide additional capacity beyond current projections. If the reserve were developed, the segmented circle would be relocated approximately 500 feet to the west. The hangar area can accommodate a 12-unit T-hangar and a smaller T-hangar or medium conventional hangar.

The existing parallel taxiway would be relocated and reconstructed to meet FAA runway separation standards (240 feet from runway centerline to taxiway centerline). Depending on the availability of funding, it may be possible to reconstruct the parallel taxiway in two phases. The first phase could relocate the western 1,000 feet of the taxiway in conjunction with construction of the diagonal taxiway and cross taxiway. A new exit taxiway is located where the diagonal taxiway and parallel taxiway meet to improve flexibility and efficiency for aircraft ground operations, particularly for AG aircraft that require minimal time for fueling or application loading. The location of the future AG operations area would concentrate activity in this area. With the diagonal taxiway in place, improvements to the eastern section of the parallel taxiway could be deferred. The second phase (1,300 feet) could be completed in conjunction with another major paving project, such as runway reconstruction.

A new water well and storage tank have been recommended for the airport due to limitations that exist with the current water system. The improvements are intended to provide basic fire protection and water service to airport users. The final location for the well and storage tank will depend in part on geology, soils, and the drilling depth needed to reach the desired water level. Adequate measures should be taken to protect the well and storage site from potential contamination sources such as fuel storage or maintenance activities. In addition, the storage tank should not create a potential hazard to air navigation, remaining well below all FAR Part 77 airspace surfaces for the airport.

A small area of property acquisition is required on the north side of the runway to accommodate the north-side parallel taxiway, taxiway reserve, and potential AWOS site. An alternative AWOS site is located on the south side of the runway, west of the parallel taxiway. Both sites require a 500-foot clear area surrounding the weather station to ensure reliable observations; for both sites, a large portion of the clear area extends beyond airport property and will require an agreement (easement) to protect the clear area from incompatible development.

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August 24, 1999

Lexington Airport
Airport Layout Plan Options

Key for use in attached Concept Plan

A. Relocate parallel taxiway to meet FAA standards for current design aircraft BII (240 feet taxiway centerline to runway centerline). This also results in relocated Aircraft Parking Line (305.5 feet from runway centerline = 240 foot parallel taxiway centerline +65.5 feet to clear taxiway OFA.

B. New taxiway to allow "loop" for Ag, Corporate, and Lifeflight operations.

C. New Ag operations area with rinse area.

D. New agricultural lease area for offices, storage, and related uses.

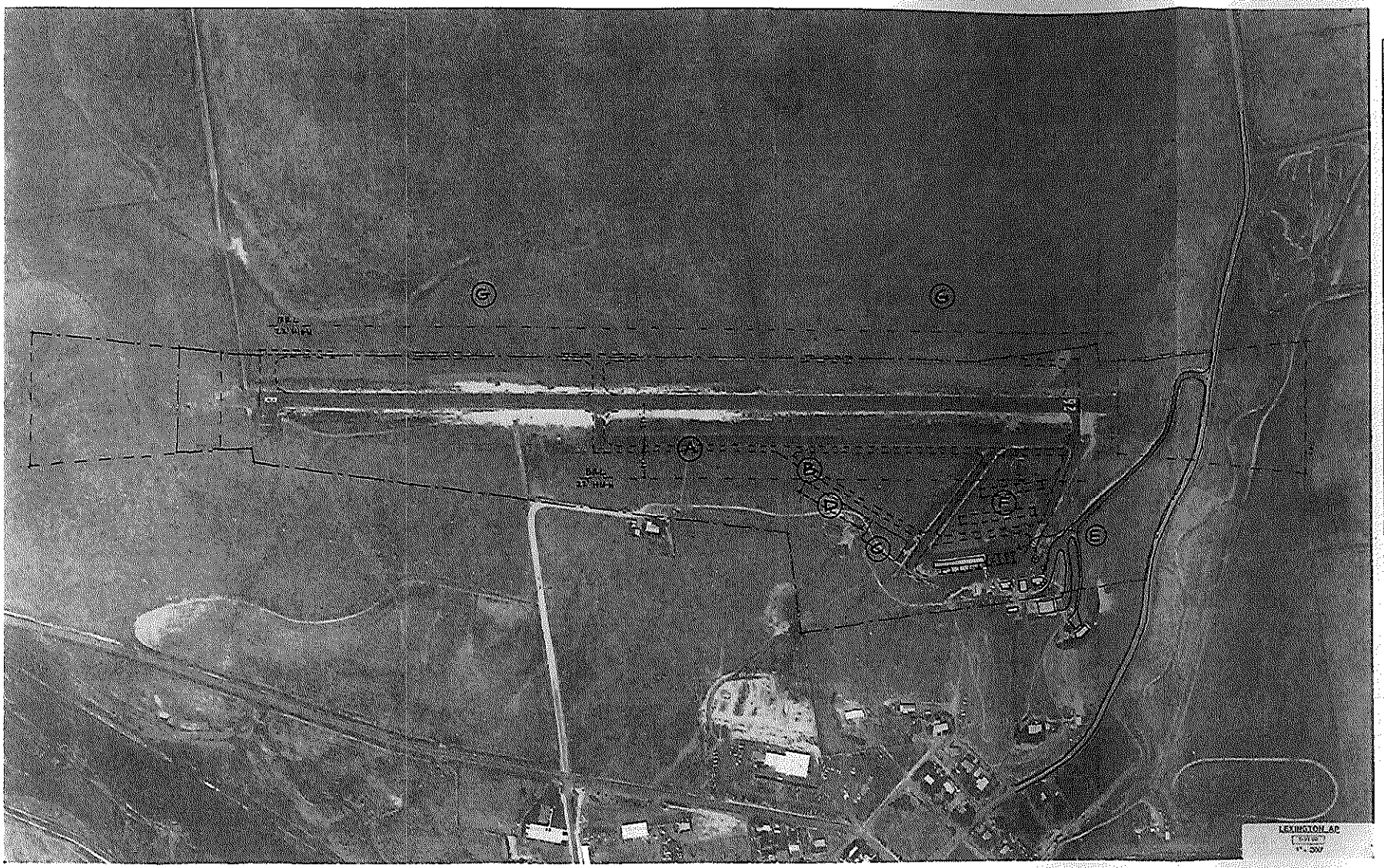
E. New Corporate Tiedown Area.

F. New Hangar Area.

G. Future Aviation-related Industrial Park.

Miscellaneous

1. Add Runway End Identifier Lights (REIL's).
2. Add Taxiway Reflectors.
3. Relocate Fueling Equipment and Area.
4. Raise Airport Beacon.



1 AIRPORT LAYOUT PLAN DESIGN OPTIONS
SCALE: 1 INCH = 500 FEET

0 250 500 1000 FT

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with
CENTURY WEST ENGINEERING, &
GAZELEY & ASSOC.

AIRPORT LAYOUT PLAN UPDATE

LEXINGTON AIRPORT

MORROW COUNTY, OREGON

CONCEPT AIRPORT PLAN

DRAWN BY: AF CHECKED BY: AF
DATE: 8-24-99 PLOT FILE NAME: LEX11.DWG

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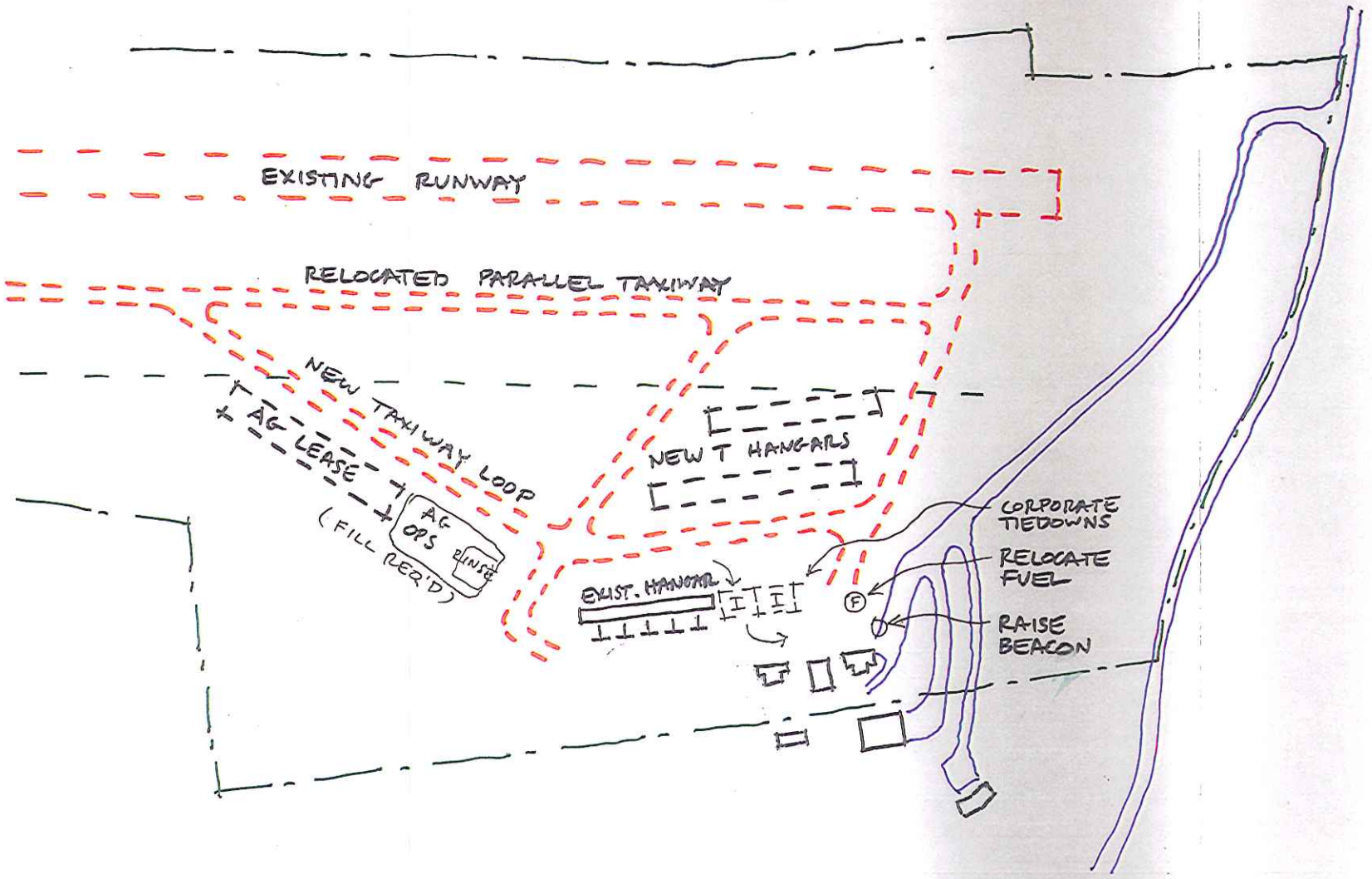

1 TERMINAL AREA DESIGN OPTION A

SCALE: 1 INCH = 200 FEET

0 100 200 400 FT

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CENTURY WEST ENGINEERING, &
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AIRPORT LAYOUT PLAN UPDATE

LEXINGTON AIRPORT

MORROW COUNTY, OREGON

CONCEPT A
TERMINAL PLAN

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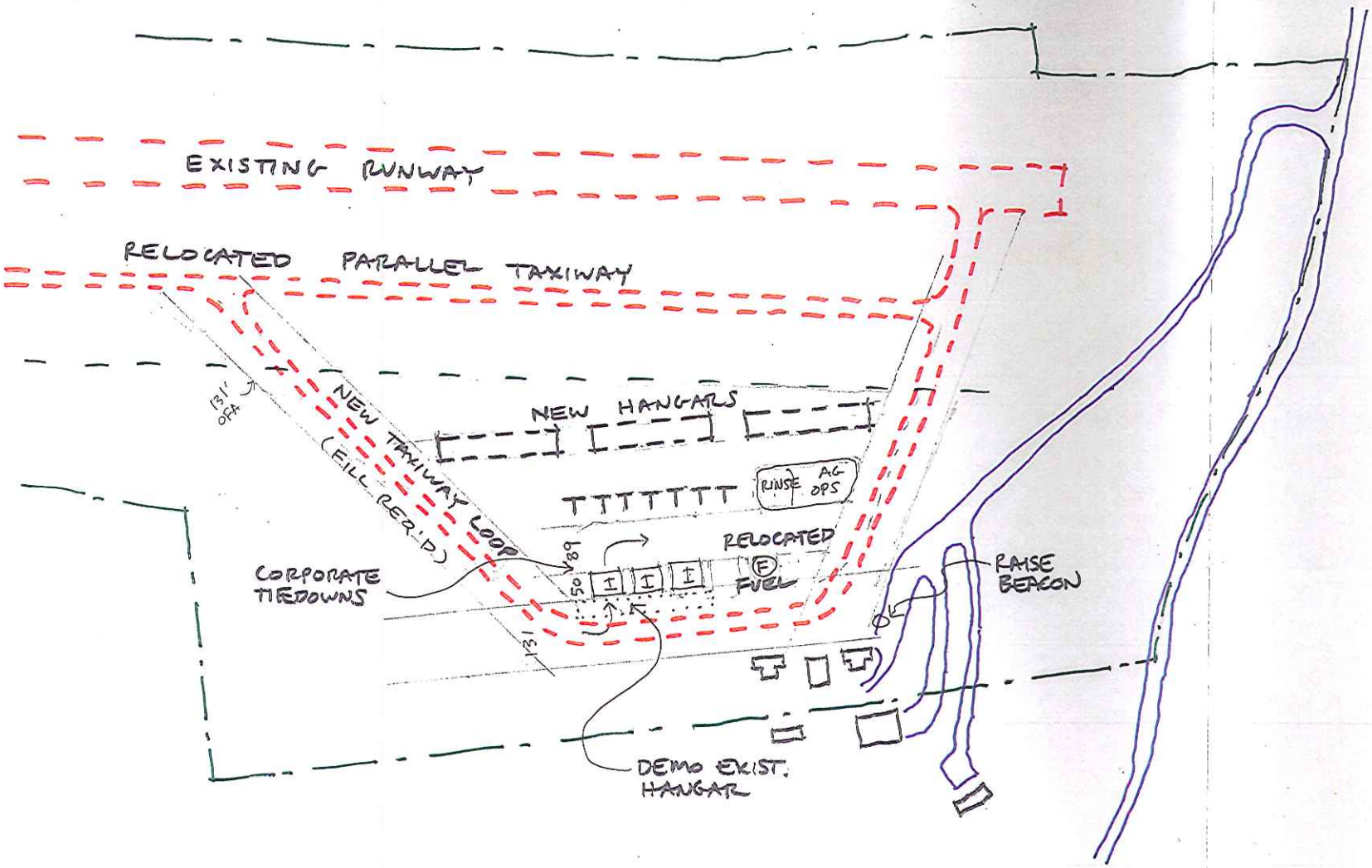

1 TERMINAL AREA DESIGN OPTION B

SCALE: 1 INCH = 200 FEET

0 100 200 400 FT

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AIRPORT LAYOUT PLAN UPDATE

LEXINGTON AIRPORT

MORROW COUNTY, OREGON

CONCEPT B
TERMINAL PLAN

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AIRPORT LAYOUT PLAN DRAWINGS

In the Alternatives section, options were evaluated for the long-term development of Lexington Airport. This effort resulted in the selection of a Preferred Alternative. The purpose of this section is to describe in narrative and graphic form, the recommended development through the 20-year planning period. A set of plans, referred to in the aggregate as the **Airport Layout Plans**, has been prepared to graphically depict recommendations for airfield layout, land use, and the identification and possible disposition of obstructions in the runway protection zones (RPZs) or approach surfaces. This set of plans, prepared pursuant to guidelines established by the Federal Aviation Administration (FAA), includes:

- *Airport Layout Plan*
- *Part 77 Airspace Plan*
- *Land-Use Plan with Noise Contours*

AIRPORT LAYOUT PLAN

The Airport Layout Plan (ALP) presents the existing and ultimate airport layout and depicts the recommended improvements, which will enable the airport to meet forecast aviation demand. Detailed airport and runway data legends and a list of buildings and facilities are provided are provided to facilitate the interpretation of the planning recommendations.

The improvements depicted on the ALP reflect all major airfield developments recommended during the current 20-year planning period. Decisions made by the airport sponsor, regarding the actual scheduling of projects will be based on specific demand and the availability of funding.

Runway-Taxiway Improvements

The ALP depicts Runway 8-26 with existing and future dimensions of 4,150 by 75 feet, with dimensional standards based on ADG II standards. The existing partial-length parallel taxiway located on the south side of the runway is shown as being relocated to meet FAA ADG II runway separation standards. The taxiway is in poor condition and requires reconstruction; relocation should be accomplished as part of the reconstruction project.

A new diagonal taxiway and access taxiway would extend from the terminal area to near the midpoint of the existing parallel taxiway. The taxiways will improve aircraft flow between the runway-taxiway system and the terminal area. An additional exit taxiway would be provided where the diagonal and parallel taxiways connect. The location of the additional exit taxiway will enable aircraft to exit the runway and enter the terminal area more directly.

A north-side parallel taxiway is also depicted on the ALP to provide taxiway access to the end of Runway 8. Although providing full-length taxiway access is a relatively low priority in light of other needs on the airport, the north-side alignment is considered more practical to eventually develop based on terrain and property acquisition requirements. A taxiway reserve is also depicted on the ALP to provide full-length parallel taxiway access on the north side of the runway. There is some interest in designating the property north of the airport as future light industrial areas. Preserving airside access options provides opportunities to support a variety of airport-related uses on the north side of the runway.

All runway and taxiway pavements will require maintenance and some rehabilitation during the twenty-year planning period.

Property Acquisition

Property acquisition is depicted on the north side of the airport to accommodate a north side parallel taxiway and future site for the weather observation station. An area of approximately 17 acres is identified in a 160-foot strip of property along the northern property airport line. This area would be adequate to accommodate the taxiway and required setbacks and a future ASOS/AWOS site (option 1) on the north side of the runway.

Aircraft Apron, Terminal Area Improvements

Large portions of the main apron pavement have failed or are in very poor condition. The main apron will be reconstructed and reconfigured to provide areas for business aircraft parking, medevac loading, and light aircraft tiedowns. As part of the reconfiguration, development of a new aircraft tiedown apron is recommended adjacent to the aircraft fueling area. The new apron would connect to the existing aircraft fueling area and would provide nine tiedowns in the first phase. A second phase expansion of tiedown apron would be located immediately north of the apron providing up to 12 additional tiedowns.

The hangar row located on the south side of the main apron will be redeveloped to accommodate new aircraft hangars. The existing AG aircraft facilities will be relocated to a new AG area adjacent to the new diagonal taxiway and the southern hangar row would accommodate three or four new conventional hangars. Three or four south-facing conventional hangars would also be accommodated immediately south of the existing open front 7-unit hangar. The area located between the two inward-facing hangar rows will be reconstructed. An area for T-hangar development would be located on the north side of the diagonal taxiway.

Access Roads

The access road located behind the existing south hangar row will be widened to provide improved access to the hangar area and the new AG aircraft operations and lease areas. The road can be improved in phases, with the initial improvements (approximately 900 feet) extending to the new AG operations area. A second phase (approximately 600 feet) would extend to the end of the adjacent lease area.

Agricultural Aircraft Facilities

The existing aerial applicator has a hangar located off airport property, although ground operations and storage of application and equipment is located on the airport. The existing AG area on the main apron is located relatively close to the City water storage cistern and well. Relocating this activity away from the water supply is recommended as a precaution, although there have been no known incidents involving spills or contamination resulting from on-airport AG operations.

The new AG facilities would include a loading pad with secondary containment, a small parking apron for AG aircraft, and a lease area for equipment storage or building development. The development of the AG aircraft lease area would continue as demand occurs. This area would require additional fill and extension of the access road as the development continues toward the west.

Weather Observation

An on-site weather observation system (AWOS) is planned for the airport. The siting standards for an AWOS system require a 500-foot clear area that should be free of permanent items such as parked aircraft, structures, etc. Two optional locations are identified on the ALP for siting the AWOS; both locations would require some control over lands located beyond airport property. Another option that may be more practical would be to locate the AWOS unit on an elevated platform in the terminal area. The 500-foot clearance standard would still apply, but the clearance arc would be located at the same elevation as the system sensors. Therefore, buildings and other items may be permitted within the radius, if they remain below the AWOS installation profile.

Other Items

Beyond the apron and taxiway improvements, the primary airside improvements include leveling and filling the extended runway safety areas; replacing the existing visual approach slope indicators (VASI) with precision approach path indicators (PAPI); and runway end identifier lights (REIL) when an instrument approach is commissioned at the airport. The FAA is currently evaluating approach configurations, although it appears that an approach toward Runway 8 may be most feasible in terms of obstruction clearance for both the arrival and missed approach segments. The existing airport beacon would be replaced (elevated) to improve visibility from the air. Taxiway edge reflectors are

recommended for all access taxiways.

Other projects such as overlays and sealcoats on the airfield pavements, which are not depicted on the ALP, are described in the Capital Improvement Program.

PART 77 AIRSPACE PLAN

The Part 77 Airspace Plan for Lexington Airport was developed based on Federal Aviation Regulations (FARs) **Part 77, Objects Affecting Navigable Airspace.** The plan provides the plan view of the ultimate imaginary surfaces for the airport and identifies the airspace and approaches to each runway end to protect them from encroachment by obstructions, which would affect safe airport operations. By comparing the elevations of the imaginary surfaces with the surrounding terrain, obstructions to navigable airspace were identified. The runway type and instrumentation determine the surface heights, angles, and radii. The Airspace Plan reflects **Part 77** critical surfaces for the recommended airfield development and identifies those obstructions, which penetrate the surfaces.

An area of terrain penetration is identified within the horizontal and conical surfaces, east of the airport. The penetration is located approximately 4,500 feet from the end of Runway 26, at its nearest point and continues through the conical surface. With the exception of this area of terrain, the airspace surfaces are free of other terrain penetration. There are no charted non-terrain obstructions (towers, powerlines, etc.) penetrating the Part 77 surfaces.

The airspace surfaces depicted on the drawing reflect the proposed nonprecision or visual instrument approach capabilities for Runway 8-26. The runway will be maintained in a manner consistent with utility runway standards (per Part 77). Existing and future plan and profile views of each runway are provided. The approaches for Runways 16 and 34 are free of penetrations. Vehicles traveling on the airport access road and Highway 207 remain well below the standard 20:1 approach surface for Runway 26 and do not penetrate any Part 77 surfaces.

LAND-USE PLAN

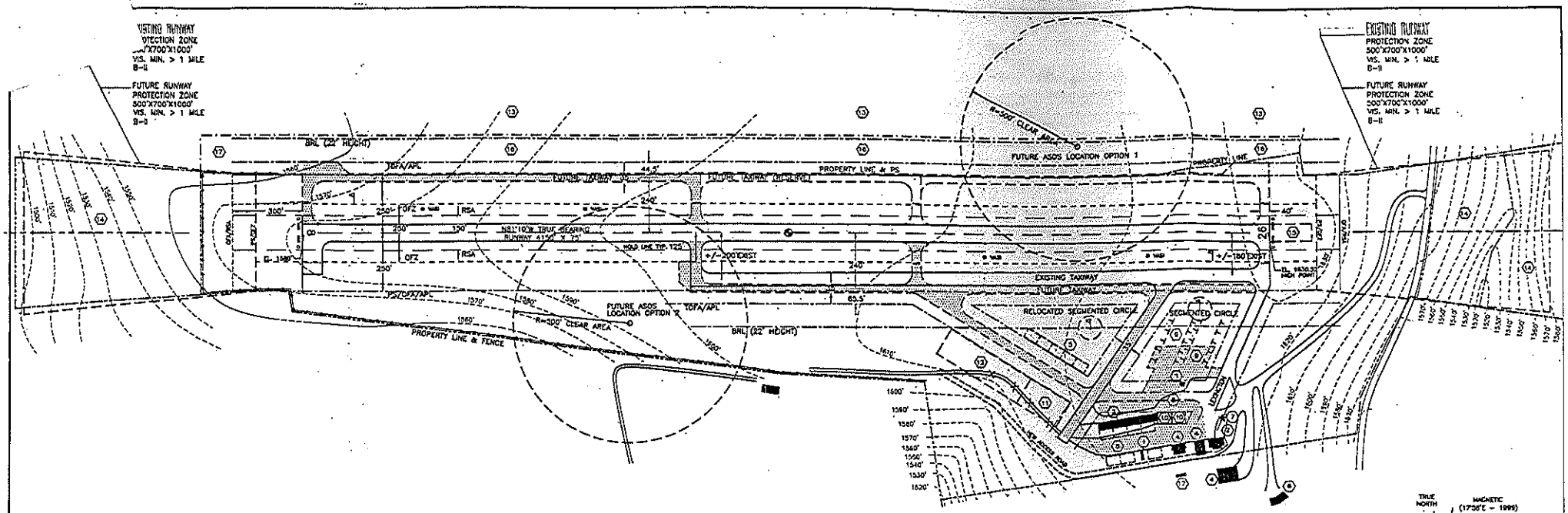
The Airport Land-Use and Zoning Plan (**Drawing 3**) for Lexington Airport depicts existing zoning in the immediate vicinity of the airport. The land areas surrounding the airport are in Morrow County and the City of Lexington jurisdiction. The airport is located outside the City of Lexington Urban Growth Boundary (UGB) and has Morrow County Exclusive Farm Use-Agricultural (EFU) zoning. City of Lexington zoning abuts the airport near its midpoint on the south side, with areas of Commercial, General Residential, Public Use, and Farm Residential zoning present. The majority of remaining land abutting the airport, but located outside the city UGB is zoned EFU (County).

An Airport Overlay Zone is described in the Morrow County Zoning Ordinance and Comprehensive Plan; however, no Airport Hazard, Airport Approach, or similar Overlay Zoning is described in the City of Lexington Zoning Ordinance, nor does any Overlay Zoning appear on either the County or City Zone Maps.

Noise contours for the twenty-year activity forecast are depicted on the Land Use Plan. The noise contours were created using the Federal Aviation Administration (FAA) Integrated Noise Model (INM), Version 5.2. Data from activity forecasts and fleet mix are combined with typical flight track information to create general indication of noise exposure.

Due to the narrow configuration of airport property along the runway, portions of the 55, 60, and 65 DNL contours extend beyond airport property boundaries. The 70 and 75 DNL contours are contained within airport property boundaries. In the areas where the noise contours extend beyond airport property, the adjacent property largely consist of agricultural lands with exclusive farm use (EFU) zoning.

Additional descriptions of land use and noise exposure are contained in Chapter Six.



AIRPORT DATA

ITEM	EXISTING	FUTURE
DATUM FOR ALL ITEMS	NAD83 / NAVD88	SAME
AIRPORT ELEVATION (MSL)	1630.52'	SAME
AIRPORT REFERENCE POINT	LAT: 45°27'14.92"N LONG:119°41'24.98"W	SAME
MEAN MAXIMUM DAILY TEMPERATURE	91°	SAME
AIRPORT REFERENCE CODE	B-II	SAME
NPIAS ROLE	GENERAL AVIATION	SAME
LAND OWNED IN FEE (ACRES)	109.8 ACRES	SAME
AIRPORT CODE	959	SAME

BUILDINGS AND FACILITIES

(1)	FUEL TANKS	(11)	AGRICULTURAL RAMP AREA
(2)	FBO OFFICE	(12)	AGRICULTURAL LEASE AREA
(3)	EXISTING PUBLIC HANGARS	(13)	POTENTIAL AVIATION/INDUSTRIAL
(4)	EXISTING PRIVATE HANGARS	(14)	AVIGATION EASEMENT
(5)	HANGARS (FUTURE)	(15)	TREATED GRAVEL OVERRUN
(6)	FSO/CARETAKER HOUSE	(16)	ACQUIRE FUTURE TAXIWAY LAND
(7)	AUTO PARKING	(17)	CITY POTABLE WATER TANK/WELL
(8)	EXISTING TIEDOWN APRON	(18)	(NOT USED)
(9)	FUTURE TIEDOWN APRON		
(10)	FUTURE LARGE AC TIEDOWN		

RUNWAY DATA

ITEM			RUNWAY 4-28 EXISTING	RUNWAY 4-28 FUTURE
LENGTH AND WIDTH			4150' X 75'	SAME
EFFECTIVE GRADIENT			1.2%	SAME
PAVEMENT STRENGTH (WHEEL-POUNDS)			SINGLE - 4,000	SINGLE - 12,500
PAVEMENT SURFACE			ASPHALT	SAME
RUNWAY SAFETY AREA			4755' X 150'	SAME
OBJECT FREE AREA			4755' X 500'	SAME
OBSTACLE FREE ZONE			4455' X 250'	SAME
CRITICAL AIRCRAFT			B200	SAME
APPROACH TYPE (NOTE A)		4	VISUAL	GPS
		28	VISUAL	GPS
APPROACH SLOPE REQUIRED/CLEAR		4	20:1/26:1	SAME
		28	20:1/30:1	SAME
APPROACH AND LANDING AIDS		4	VASI	GPS, VASI, REIL
		28	VASI	GPS, VASI, REIL
RUNWAY END COORDINATES	4	Latitude	45°27'18.06"N	SAME
		Longitude	119°41'53.76"W	SAME
	28	Latitude	45°27'11.78"N	SAME
		Longitude	119°40'55.17"W	SAME
TDZE		4	1613.00'	SAME
		28	1630.52'	SAME
RUNWAY LIGHTING			MEDIUM INTENSITY	SAME
TAXIWAY LIGHTING			NONE	REFLECTORS
RUNWAY MARKING			VISUAL	SAME
WIND COVERAGE (10) - 12/13 MPH			NOT AVAILABLE	-

DECLARED DISTANCES

	EXISTING 4	EXISTING 28	FUTURE 4	FUTURE 28
DISPLACED THRESHOLD (approach end)	0'	0'	0'	0'
TAKEOFF RUN AVAILABLE (TORA)	4150'	4150'	4150'	4150'
TAKEOFF DISTANCE AVAILABLE (TODA)	4150'	4150'	4150'	4150'
ACCELERATE - STOP DISTANCE AVAILABLE (ASDA)	4150'	4150'	4150'	4150'
LANDING DISTANCE AVAILABLE (LDA)	4150'	4150'	4150'	4150'

NOTES

A. GPS INSTRUMENT APPROACH WITH VISIBILITY MINIMUMS ≥ 1 MILE IS PLANNED FOR AIRPORT. BASED ON VISIBILITY REQUIREMENTS, FINAL APPROACH SEGMENT WILL BE VISUAL.

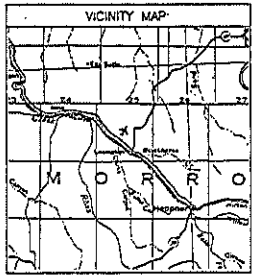
B. FUTURE ASOS TO BE LOCATED NEAR AIRPORT IN AREA WITH 500' RADIUS CLEARANCE.

C. CONTOURS BASED ON OLD 1947 DOCUMENT AND CURRENT USGS MAPS.

D. NO LOCAL WIND DATA ARE AVAILABLE.

E. TEMPERATURE FROM HOPPNER, 1925-1998.

VICINITY MAP



TRUE NORTH
MAGNETIC (17°36'E - 1999)

200 0 200 400
SCALE OF FEET
SCALE: 1"=200'

LEGEND

ITEM	EXISTING	FUTURE
AIRFIELD PAVEMENT		
PAVEMENT		
PERIMETER FENCE		
AIRPORT PROPERTY LINE		
BUILDING RESTRICTION LINE	BRL	SAME
AIRCRAFT PARKING LIMIT	APL	SAME
BUILDINGS		
BUILDINGS TO BE REMOVED		
TOPOGRAPHIC CONTOURS (10 FT)	1410	
WIND CONE		
AIRPORT REFERENCE POINT		
THRESHOLD LIGHTS (FUTURE W/ REIL)		
ROTATING BEACON		

APPROVALS

MORROW COUNTY, OREGON DATE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"

NO.	DATE	BY	APPR	REVISIONS

ARON FAEGRE AND ASSOCIATES
with
CENTURY, WEST ENGINEERING & GAZELEY ASSOC.

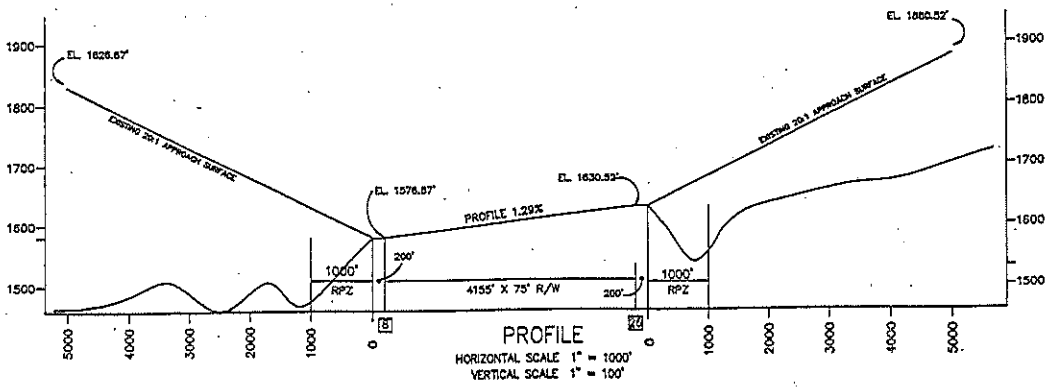
DESIGNED BY: DRAWN BY: CHECKED BY: SCALE:

LEXINGTON AIRPORT
AIRPORT LAYOUT PLAN UPDATE

DRAWING 1

NOTES:
1. HEIGHT RESTRICTIVE ZONING IS NOT IN EFFECT IN THE MORROW COUNTY AND CITY OF LEXINGTON ORDINANCES, BUT IS IN PROCESS OF ENACTMENT.
2. BASE MAP USGS 7.5 MINUTE LEXINGTON, OREGON 1968.

0 1000' 2000' 4000'



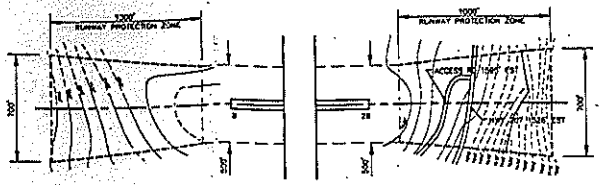
PROFILE
HORIZONTAL SCALE 1" = 1000'
VERTICAL SCALE 1" = 100'

OBSTRUCTION TABLE DETAILS

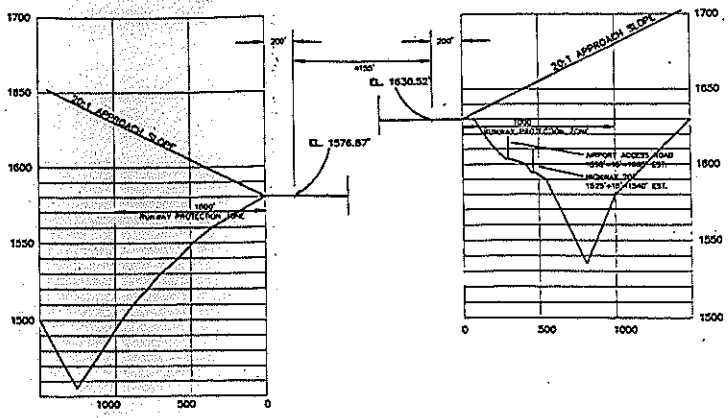
RUNWAY	OBSTRUCT. NUMBER	DESCRIPTION	APPROACH SURFACE PENETRATION	OBSTRUCTION ELEVATION	DIST. FROM RUNWAY	PROPOSED DISPOSITION
8 (DIST. 4155' LENGTH)	1	TERRAIN TO BE OF AIRPORT USE (SEE AIRSPACE DRAWING)				
26 (DIST. 4155' LENGTH)	NONE					

NOTES:
1. GROUND PROFILE IS A COMPOSITE OF THE ELEVATIONS ACROSS THE CENTER OF THE APPROACH.

LEGEND:
* 15 FEET OF ADDITIONAL HEIGHT ADDED TO ROAD ELEVATION, TYP. BY FAA STANDARDS.



EXISTING & FUTURE RUNWAY 8-26



APPROVALS	VERIFY SCALES	NO.	DATE	BY	APPR	REVISIONS
MORROW COUNTY, OREGON DATE	BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.					
FEDERAL AVIATION ADMINISTRATION DATE						

ARON FAEGRE AND ASSOCIATES
with
CENTURY WEST ENGINEERING & GAZELEY ASSOC.

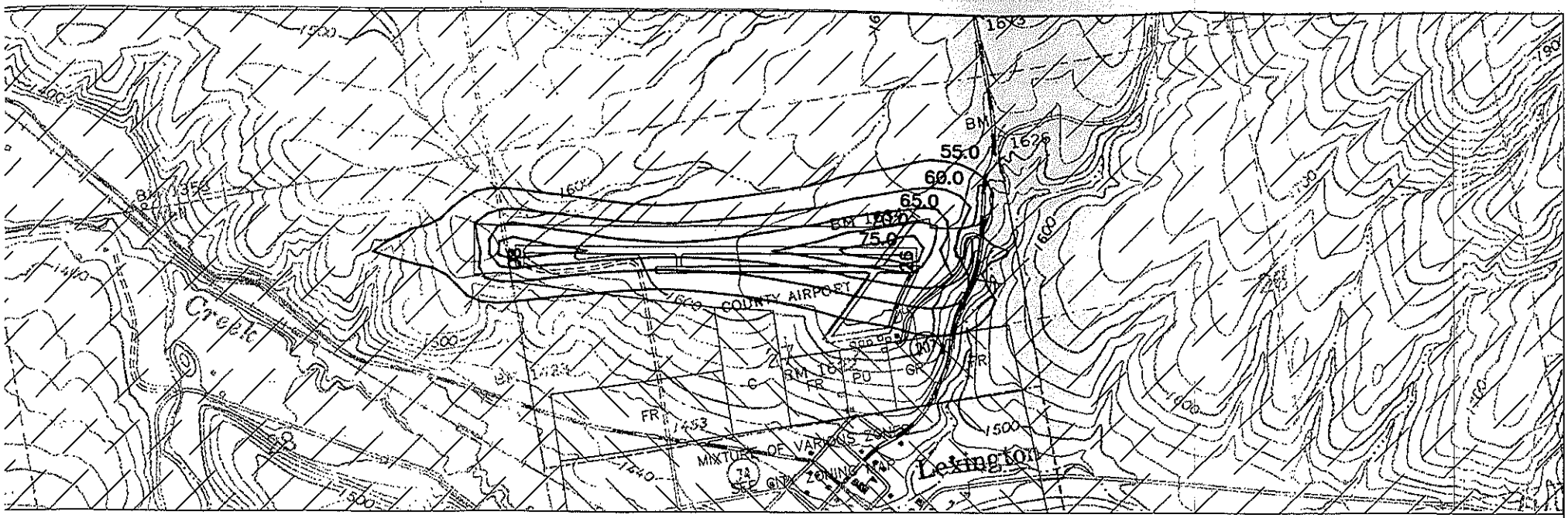
DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
AF	JH	DM	1"=2000'

DATE: MAY 6, 2001
PROJECT: LEX-2

LEXINGTON AIRPORT
AIRPORT LAYOUT PLAN UPDATE

AIRSPACE DRAWING

DRAWING 2



DNL NOISE CONTOURS FOR YEAR 2014
WITH 4,993 OPERATIONS

CITY OF LEXINGTON ⟷ MORROW COUNTY

URBAN GROWTH BOUNDARY

ZONING LEGEND

- AIRPORT
- COUNTY EFU
- CITY OF LEXINGTON URBAN GROWTH AREA
  - GR GENERAL RESIDENTIAL
  - C COMMERCIAL
  - PU PUBLIC USE
  - FR FARM RESIDENTIAL
  - LI LIGHT INDUSTRIAL

0' 500' 1000' 2000'

SCALE IN FEET

APPROVALS

MORROW COUNTY, OREGON DATE

FEDERAL AVIATION ADMINISTRATION DATE

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	APPR.	REVISIONS

ARON FAEGRE AND ASSOCIATES
with
CENTURY WEST ENGINEERING & GAZELEY ASSOC.

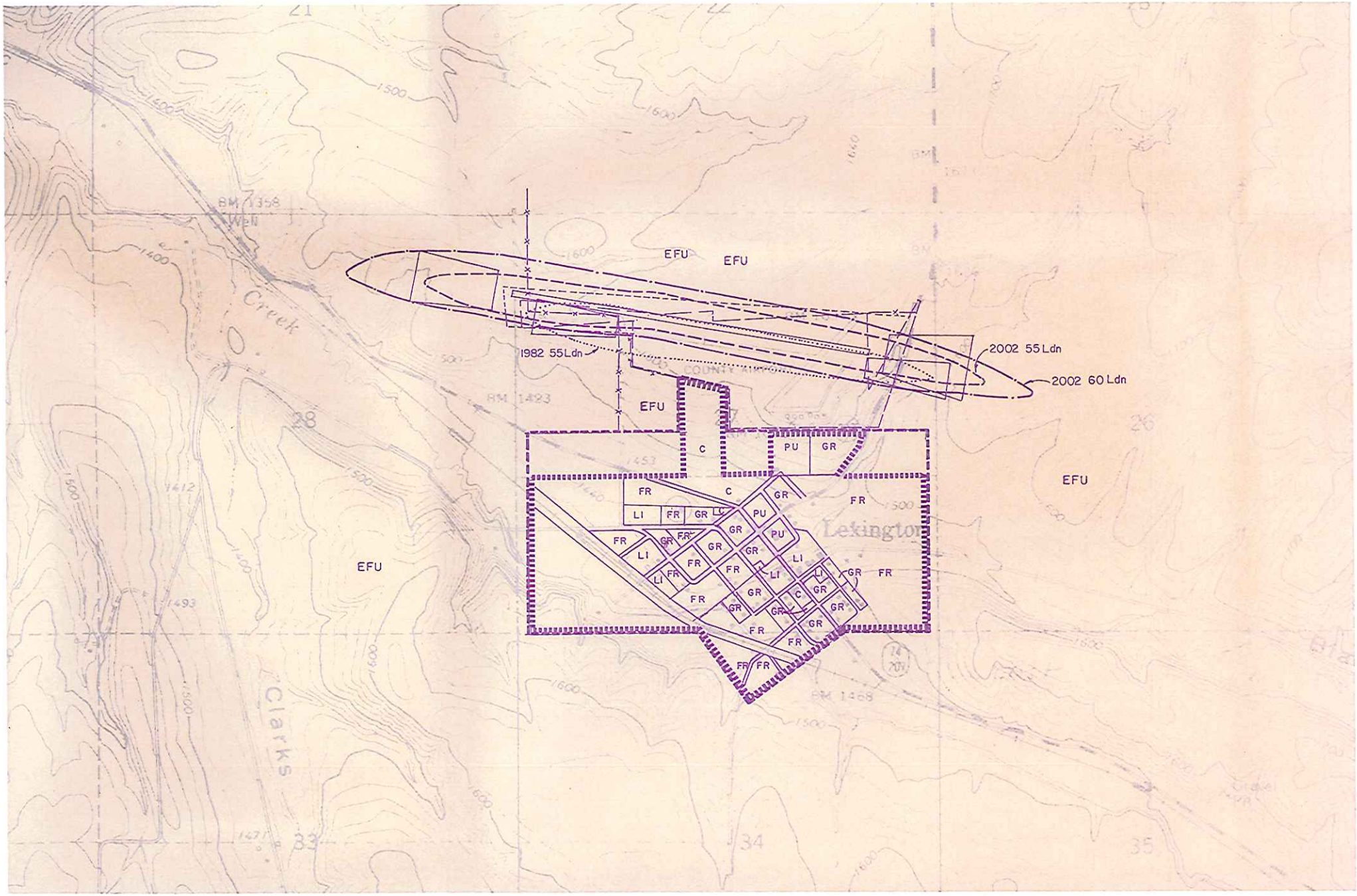
DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
AF	JH	DM	1"=500'

DATE: DECEMBER 31, 1999 PROJECT: LEX-3

LEXINGTON AIRPORT
AIRPORT LAYOUT PLAN UPDATE

AIRPORT LAND USE DRAWING & ZONING PLAN

DRAWING 3


EFU
EFU
1982 55 Ldn
2002 55 Ldn
2002 60 Ldn
EFU
C
PU
GR
EFU
FR
C
GR
FR
LI
FR
GR
LI
PU
GR
PU
FR
GR
FR
GR
LI
LI
FR
FR
LI
LI
GR
FR
LI
FR
GR
C
GR
FR
GR
GR
GR
FR
FR
FR
FR
EFU
Lexington
Clarks
Creek
BM 1358
BM 1423
BM 1468
28
33
34
35
26

Chapter Five
Capital Improvement Program

The previous chapters in the Airport Layout Plan Report have established the facility needs and recommended plans for Lexington Airport through the twenty-year planning period. The purpose of this chapter is to provide an implementation program by which the recommendations can be realized in an effective and economical manner. The following sections present development schedules and construction cost summaries for the development projects and financing options for capital improvements. The implementation of these projects will depend on actual user needs over time, and the availability of funding.

As proposed, Morrow County would be responsible for providing approximately 25 percent of the total development cost during the planning period, with the balance of project costs being eligible for federal (FAA) funding. Projects such as lease area site preparation and water system improvements are not typically eligible for FAA funding. The U.S. Department of Agriculture (USDA) Rural Development Program provides funding for community water and sewer improvement projects and may be a potential funding source for the airport water system improvements. However, without other outside funding, the water system projects represent nearly half of the local share of the CIP. Hangar development on the airport has been funded through both private and public sources. It is anticipated that future hangar development at Lexington Airport will be privately funded.

The maintenance needs of airfield pavement range from very minor items such as crack filling to periodic sealcoats (fog seals). Some of these projects are not currently eligible for FAA funding. The pavement maintenance items are not included in the capital improvement program, but need to be undertaken by the County on a regular basis. The State of Oregon Department of Aviation recently initiated a funding program to assist airport sponsors with pavement maintenance. Morrow County public works staff has worked with Oregon Aviation to ensure participation in the new funding program. The primary purpose of the program is to support a regular regimen of pavement maintenance (crack filling, patching, fog seals, etc.) that can significantly extend the useful life of airfield pavements.

The primary source for airport development funding is aviation users, both locally and nationally.

Typically, FAA grants fund 90 percent of eligible projects at airports such as Lexington Airport. These grant funds are derived from user fees deposited in the National Aviation Trust Fund. Since 1982, the federal **Airport Improvement Program (AIP)** has been the legislation authorizing the collection and use of these funds. The funds are collected through excise taxes on airline tickets, aviation fuel, accessories, aircraft registrations, and other aviation uses.

Where practical, the FAA's approach to funding general aviation airport projects is to consolidate several smaller projects into a single, larger grant. This approach has been used successfully at several Oregon airports in recent years. Consolidation of projects often results in significant facility upgrades for an airport, although it also normally suggests that there will be no other large project funding for several years. It has been several years since the most recent FAA grant for construction at Lexington; approval of the updated airport layout plan will enable the County to immediately pursue FAA funding for a variety of projects.

AIRPORT DEVELOPMENT SCHEDULES AND COST SUMMARIES

Prior to formulation of the development schedules, the cost of each proposed improvement has been estimated. The figures used for all development items throughout the planning period are expressed in 2000 dollars and include 30 percent overhead for administration, engineering, and contingencies. For future implementation of this plan, airport management can convert the 2000-based figures by adjusting for subsequent inflation. The interim change in the **United States Consumer Price Index (USCPI)** can be used to estimate future costs by using the following formula to yield a multiplier ratio:

$$\frac{X}{173.7} = Y$$

Where:

X	=	**USCPI** in any given future year
173.7	=	**USCPI** in September 2000 (1982-84 = 100)
Y	=	Conversion factor

Dividing the future **CPI** by the 2000 **CPI** provides a conversion factor (Y) which, in turn, is multiplied by the 2000-based cost estimates to provide appropriate amounts in any future reevaluation. Only national **CPI** data should be used, as local or regional indices may vary. Consumer Price Index information may be obtained from the U.S. Bureau of Labor Statistics and the economic research units of most commercial banks and councils of governments. The cost estimates used for capital

Table 5-1
20-Year Capital Improvement Program
Lexington Airport

Project	Qty.	Unit	Unit $	Total Cost*	FAA Eligible	Local / State
Short Term Projects						
Reconfigure/Reconstruct Main Apron	8,600	SY	$24	$206,400	$185,760	$20,640
Diagonal Access Taxiway (800 x 35')	3,700	SY	$24	$88,800	$79,920	$8,880
Main Apron Cross Taxiway (350 x 35')	1,400	SY	$24	$33,600	$30,240	$3,360
Taxiway Reflectors (access taxiways)	2,800	LF	$3	$8,400	$7,560	$840
Aircraft Tiedown Apron - Phase I	4,700	SY	$24	$112,800	$101,520	$11,280
Automated Weather Observation System (AWOS)	1	ea	$55,000	$55,000	$49,500	$5,500
REIL (in conjunction w/GPS approach)	2	ea	$20,000	$40,000	$36,000	$4,000
Slurry Seal Runway	36,300	SY	$2	$72,600	$65,340	$7,260
Slurry Seal Apron/East Txy (fueling area)	4,800	SY	$2	$9,600	$8,640	$960
Safety Area Grading/Fill (Rwy 26 end)	1,200	CY	$8	$9,600	$8,640	$960
Safety Area Grading/Fill (Rwy 8 end)	3,500	CY	$8	$28,000	$25,200	$2,800
General Fill - AG Apron Area	6,000	CY	$8	$48,000	$0	$48,000
AG Loading Pad w/ containment (6" PCC)	400	SY	$75	$30,000	$27,000	$3,000
AG Apron & Taxiways	1,500	SY	$24	$36,000	$32,400	$3,600
Hangar/AG Access Road - Phase I	900	LF	$28	$25,200	$22,680	$2,520
New Airport Well	1	ea	$80,000	$80,000	$0	$80,000
New Airport Beacon/Tower	1	ea	$16,000	$16,000	$14,400	$1,600
Total Short Term Projects				**$900,000**	**$694,800**	**$205,200**
Long Term Projects						
Slurry Seal Main Apron/Tiedown	13,000	SY	$2	$26,000	$23,400	$2,600
Slurry Seal Diagonal & Main Apron Taxiway	9,900	SY	$2	$19,800	$17,820	$1,980
Slurry Seal Apron/East Txy (fueling area)	4,800	SY	$2	$9,600	$8,640	$960
Slurry Seal Runway	36,300	SY	$2	$72,600	$65,340	$7,260
Property Acquisition (17 acres) North Side	17	acres	$5,000	$85,000	$76,500	$8,500
AG/Hangar Access Road (Phase II)	600	LF	$28	$16,800	$15,120	$1,680
General Fill - AG Lease Area	12,000	CY	$8	$96,000	$0	$96,000
Reconstruct NE/SW Taxiway	3,200	SY	$24	$76,800	$69,120	$7,680
PAPI (replace existing VASI)	2	ea	$25,000	$50,000	$45,000	$5,000
Reloc. S. Parallel Txy (2400 X 35'); Demo Exist. Txy.	10,900	SY	$24	$283,600	$255,240	$28,360
Taxiway Reflectors (S. Parallel Txy & Connectors)	2,700	LF	$3	$8,100	$7,290	$810
North Parallel Taxiway (1700 X 35')	8,200	SY	$24	$196,800	$177,120	$19,680
Taxiway Reflectors (N. Parallel Taxiway)	1,900	LF	$3	$5,700	$5,130	$570
Apron Flood Lighting	4	ea	$6,000	$24,000	$21,600	$2,400
Resurface Runway (2" AC)	34,600	SY	$6	$207,600	$186,840	$20,760
Slurry Seal Main Apron/Tiedown	13,000	SY	$2	$26,000	$23,400	$2,600
Slurry Seal Diagonal & Main Apron Taxiway	9,900	SY	$2	$19,800	$17,820	$1,980
Slurry Seal Apron/East Txy (fueling area)	4,800	SY	$2	$9,600	$8,640	$960
Slurry Seal South Parallel Taxiway	10,900	SY	$2	$21,800	$19,620	$2,180
Slurry Seal North Parallel Taxiway	8,200	SY	$2	$16,400	$14,760	$1,640
Water Storage Tank (180,000 gal.)	1	ea	$150,000	$150,000	$0	$150,000
Total Long Term Projects				**$1,422,000**	**$1,058,400**	**$363,600**
TOTAL SHORT & LONG TERM PROJECTS				**$2,322,000**	**$1,753,200**	**$568,800**

* Project costs include 30% engineering and contingency.

Table 5-2 - CIP Projects by Category - Lexington Airport

Project	Qty.	Unit	Unit $	Total Cost*	FAA Eligible	Local / State
Short Term Projects						
Preserve/Resurface Existing Pavement						
Slurry Seal Runway	36,300	SY	$2	$72,600	$65,340	$7,260
Slurry Seal Apron/East Txy (fueling area)	4,800	SY	$2	$9,600	$8,640	$960
Subtotal				*$82,200*	*$73,980*	*$8,220*
New or Reconstructed Pavement						
Reconfigure/Reconstruct Main Apron	8,600	SY	$24	$206,400	$185,760	$20,640
Diagonal Access Taxiway (2"AC)	3,700	SY	$24	$88,800	$79,920	$8,880
Main Apron Cross Taxiway (2" AC)	1,400	SY	$24	$33,600	$30,240	$3,360
Aircraft Tiedown Apron - Phase I (2" AC)	4,700	SY	$24	$112,800	$101,520	$11,280
AG Loading Pad w/ containment (6" PCC)	400	SY	$75	$30,000	$27,000	$3,000
AG Apron & Taxiways (2" AC)	1,500	SY	$24	$36,000	$32,400	$3,600
Subtotal				*$507,600*	*$456,840*	*$50,760*
NAVAIDS, Lighting, Marking						
Taxiway Reflectors (access taxiways)	2,800	LF	$3	$8,400	$7,560	$840
AWOS w/ elevated platform	1	ea	$55,000	$55,000	$49,500	$5,500
REIL (in conjunction w/GPS approach)	2	ea	$20,000	$40,000	$36,000	$4,000
New Airport Beacon/Tower	1	ea	$16,000	$16,000	$14,400	$1,600
Subtotal				*$119,400*	*$107,460*	*$11,940*
OTHER ITEMS						
Safety Area Grading/Fill (Rwy 26 end)	1,200	CY	$8	$9,600	$8,640	$960
Safety Area Grading/Fill (Rwy 8 end)	3,500	CY	$8	$28,000	$25,200	$2,800
General Fill - AG Apron Area	6,000	CY	$8	$48,000	$0	$48,000
Hangar/AG Access Road - Phase I	900	LF	$28	$25,200	$22,680	$2,520
Subtotal				*$110,800*	*$56,520*	*$54,280*
Water Service/Storage						
New Airport Well	1	ea	$80,000	$80,000	$0	$80,000
Subtotal				*$80,000*	*$0*	*$80,000*
Total Short Term Projects				**$900,000**	**$694,800**	**$205,200**
Long Term Projects						
Preserve/Resurface Existing Pavement						
Slurry Seal Main Apron/Tiedown	13,000	SY	$2	$26,000	$23,400	$2,600
Slurry Seal Diagonal & Main Apron Taxiway	9,900	SY	$2	$19,800	$17,820	$1,980
Slurry Seal Apron/East Txy (fueling area)	4,800	SY	$2	$9,600	$8,640	$960
Slurry Seal Runway	36,300	SY	$2	$72,600	$65,340	$7,260
Resurface Runway (2" AC)	34,600	SY	$6	$207,600	$186,840	$20,760
Slurry Seal Main Apron/Tiedown	13,000	SY	$2	$26,000	$23,400	$2,600
Slurry Seal Diagonal & Main Apron Taxiway	9,900	SY	$2	$19,800	$17,820	$1,980
Slurry Seal Apron/East Txy (fueling area)	4,800	SY	$2	$9,600	$8,640	$960
Slurry Seal South Parallel Taxiway	10,900	SY	$2	$21,800	$19,620	$2,180
Slurry Seal North Parallel Taxiway	8,200	SY	$2	$16,400	$14,760	$1,640
Subtotal				*$429,200*	*$386,280*	*$42,920*
New or Reconstructed Pavement						
Reconstruct NE/SW Taxiway	3,200	SY	$24	$76,800	$69,120	$7,680
Reloc. S. Parallel Txy (2400 X 35'); Demo Existing Txy.	10,900	SY	$24	$283,600	$255,240	$28,360
North Parallel Taxiway (1700 X 35')	8,200	SY	$24	$196,800	$177,120	$19,680
Subtotal				*$557,200*	*$501,480*	*$55,720*
NAVAIDS, Lighting, Marking						
PAPI (replace existing VASI)	2	ea	$25,000	$50,000	$45,000	$5,000
Taxiway Reflectors (S. Parallel Taxiway)	2,700	LF	$3	$8,100	$7,290	$810
Taxiway Reflectors (N. Parallel Taxiway)	1,900	LF	$3	$5,700	$5,130	$570
Apron Flood Lighting	4	ea	$6,000	$24,000	$21,600	$2,400
Subtotal				*$87,800*	*$79,020*	*$8,780*
OTHER ITEMS						
Property Acquisition (17 acres) North Side	17	acres	$5,000	$85,000	$76,500	$8,500
AG/Hangar Access Road (Phase II)	600	LF	$28	$16,800	$15,120	$1,680
General Fill - AG Lease Area	12,000	CY	$8	$96,000	$0	$96,000
Subtotal				*$197,800*	*$91,620*	*$106,180*
Water Service/Storage						
Water Storage Tank (180,000 gal.)	1	ea	$150,000	$150,000	$0	$150,000
Subtotal				*$150,000*	*$0*	*$150,000*
Total Long Term Projects				**$1,422,000**	**$1,058,400**	**$363,600**
TOTAL SHORT & LONG TERM PROJECTS				**$2,322,000**	**$1,753,200**	**$568,800**

* Project costs include 30% engineering and contingency.

AIRPORT CAPITAL IMPROVEMENTS FINANCING

While the primary responsibility for financing capital facility development rests with the sponsor, there are several sources from which airport development funds can be derived. Money for capital improvements may come from a number of sources and may be used singly or in combination to accomplish airport development. Sources for financing airport facilities include the FAA's Airport Improvement Program (AIP), state economic development funds, private donations, leasebacks, direct revenue loans, and certificates of participation. Local participation, donations of equipment, labor, and materials can also contribute to the implementation of the capital program.

FAA funds for airport development, which are derived from user fees, are available for land acquisition, construction, alteration and for establishing and improving air navigation facilities. Publicly-owned airports are eligible for such aid provided the proposed project is included in the National Plan. The federal share of these projects in Oregon is 90 percent of eligible costs as outlined above.

THIRD-PARTY SUPPORT

Morrow County, Lexington, and other nearby communities have a strong interest in continued private support and development of Lexington Airport. As business and industry benefit from the use of the airport, they should also be encouraged to invest in additional improvements, including hangars on leased land parcels. This type of support lowers the sponsor's overall cost of providing facilities needed for the airport, while providing opportunities for private investment. In addition to improving the financial outlook for development and operation, it also stimulates civic participation and pride in the airport.

Recent improvements to the airport office/terminal facility, most of which was privately funded, is an example of valuable private sector support for the community's and region's public facility.

Chapter Six
Airport Environmental Checklist

The purpose of the *Environmental Checklist* is to identify physical and environmental conditions of record, which may affect improvement options at Lexington Airport. In comparison to an Environmental Assessment or Environmental Review, the project scope was quite limited in this case, and included soliciting information of record from the applicable local, state and federal sources relative to the elements of environmental assessment as they apply to this site. The scope of the Environmental Checklist research did not involve extensive interpretation of the information, in-depth analyses, or the more comprehensive, follow-up correspondence and inquiries with affected agencies and persons as is normally associated with Environmental Assessments (EA's) and Reviews (ER's).

All research activities, including correspondence, data collection and documentation, were performed under the procedures of FAA Order 5050.4A, The Airport Environmental Handbook, which is intended to implement the applicable requirements of the National Environmental Policy Act (NEPA). This report briefly addresses each potential impact category, as identified by Order 5050.4A, which is to be investigated under the EA process. If a particular potential environmental impact category did not apply to this study site, the checklist is noted accordingly. Below is a narrative discussion of the categories in which potentially significant impacts were identified as possible, and where notable ecological or social conditions appear pertinent to the future development of this facility.

LAND USE COMPATIBILITY

The Lexington Airport is zoned Morrow County Exclusive Farm Use (EFU). EFU Zoning also surrounds the airport on three sides (easterly, westerly, and northerly). On its southerly exposure, the facility is adjacent to portions of the Lexington city limits, and in some places, the airport property also abuts the northerly edge of the City of Lexington's Urban Growth Boundary (UGB). Although a few single-family residences are located in general proximity to the airfield, none are located within the 55 DNL noise contours as projected for the planning period.

It is recommended that airport friendly zoning, which recognizes aviation-related uses as "outright permitted" is established for Lexington Airport. This recommendation is consistent with the Oregon Revised Statutes (ORS), Chapter 836.600 through 836.630, regarding the appropriate zoning and protection of Oregon's airports. The existing EFU zoning does not allow aviation-related activities or development as "permitted uses." Also, height restrictive zoning, and, to some extent, use-restrictive zoning, are necessary components around an airport periphery. Airport Overlay Zones, which protect necessary airspace and limit incompatible uses, are the typical means of ensuring the safe operations of a general aviation airports.

An Airport Overlay Zone is described in the Morrow County Zoning Ordinance and Comprehensive Plan; however, no Airport Hazard, Airport Approach, or similar Overlay Zoning is described in the City of Lexington Zoning Ordinance, nor does any Overlay Zoning appear on either the County or City Zone Maps. Each of these should be amended at the next periodic review to include Airport Overlay Zoning, which is consistent with ORS Chapter 836.600-630.

The Airport Land Use Compatibility Guidelines (Oregon Department of Transportation - Aeronautics Division, 1994) defines an "Airport Development Area" for use in planning compatible land uses around airports. For Lexington (defined as a small general aviation airport), the recommended area would be 1,300-foot wide and 6,550 feet long, centered on the runway. The area is intended to encompass the primary surface, runway protection zones, and the 55 DNL noise contour. The description of the Airport Development Area includes the following statement "*...this property, according to Federal guidelines, should be under the airport's control to prevent incompatible land use development*" (Page 56 of State Guidelines). The FAA often provides financial support for local airport land acquisition to control areas such as runway protection zones, runway safety areas, object free areas, etc., that may be outside airport control. However, the FAA does not typically provide financial support for property acquisition to control lands within the 55 DNL noise contours.

At Lexington, compliance with the "Airport Development Area" guideline would require the acquisition of acreage to the north of the current airport property (approximately 400 feet wide) beyond the current northerly property line, and some property along the southwest corner of the airport. Considering the current level of activity at this airfield, coupled with the fact that the property in question is in relatively low-impacting, farm use, acquisition of property for this purpose may or may not be a priority within the 20-year planning horizon.

A general review of all Ordinance and Comprehensive Plan language and Zone Maps pertaining to the Lexington Airport be performed. This information should be compared to the requirements of ORS Chapter 836.600-630 for airport compatibility to identify any necessary changes to the local codes, plans and or maps. Also, the Airport Layout Plan Report should be adopted as part of the Transportation Elements of the City and County's respective Comprehensive Plans.

Land uses surrounding the airport are primarily agriculture and single-family residences. No noise sensitive uses (e.g., residences) are located within the projected 55 DNL noise contours. The City of Lexington has a 70,000-gallon drinking water cistern on the south edge of the airport. An agricultural aircraft loading area has historically been located near this municipal water source. The Plan recommends relocating the AG facilities further from the water supply and storage facilities. This will incur positive social impacts by reducing the risk of contamination of the City's water source.

NOISE EXPOSURE

Noise is most often defined as unwanted sound. However, sound is measurable, whereas noise is subjective. The relationship between measurable sound and human irritation is the key to understanding aircraft noise impact. A rating scale has been developed to relate sound to the sensitivity of the human ear. The A-weighted decibel scale (dBA) is calibrated to the faintest sound audible to the average young human ear. The human ear often judges an increase of 10 decibels as a doubling of sound.

The difficulty lies in determining what amount and what kind of sound constitutes noise. The vast majority of people exposed to aircraft noise are not in danger of direct physical harm. However, research has shown that individual responses to noise are difficult to predict. Some people are annoyed by each perceivable noise event, while others show little concern over the most disruptive of events. However, predicting the responses of groups of people is possible. As a result, community response, not individual response, has emerged as the prime index of aircraft noise measurement.

DNL Methodology

A methodology has been devised to relate measurable sound from a variety of sources to community response. Termed "Day-Night Average Sound Level" (DNL), this metric has been adopted by the U.S. Environmental Protection Agency, Department of Housing and Urban Development, Oregon Department of Environmental Quality (DEQ), and the Federal Aviation Administration to use in evaluating noise impacts. The FAA's Integrated Noise Model (INM) is used to develop noise contours for the airport.

The basic unit in the computation of DNL is the sound exposure level (SEL). A SEL is computed by adding the dBA level for each second of a noise event above a certain threshold. For example, a noise monitor located in a residential area with a background noise level of 45 dBA receives the sound impulses of an approaching aircraft and records the dBA reading for each second of the event as the aircraft approaches and departs the site. Each of these one-second readings is then added logarithmically

to compute the SEL. Because of the logarithmic calculation, noise levels below 10 dBA of the maximum level are significant in terms of DNL value.

The computation of an airport DNL involves the addition, weighting, and averaging of each SEL to achieve a DNL level at particular location. The SEL of each noise event occurring between the hours of 10:00 p.m. and 7:00 a.m. is automatically weighted by adding 10 dBA to the SEL to account for the assumed additional irritation perceived during that period. At Lexington, activity distribution is estimated to be 95 percent daytime and 5 percent nighttime. Estimates of runway use, percentage of touch-and-go operations, flight tracks, and aircraft fleet mix are also factored into the model. All SELs are then averaged over a given time period (day, week, year) to achieve a level characteristic of the total noise environment.

Stated simply, a DNL is approximately equal to the average dBA level during an entire time period, with weighting for nighttime noise events. The main advantage of DNL is that it provides a common measure for a variety of different noise environments. The same DNL level can describe both an area with very few high-noise events and an area with many low-level events.

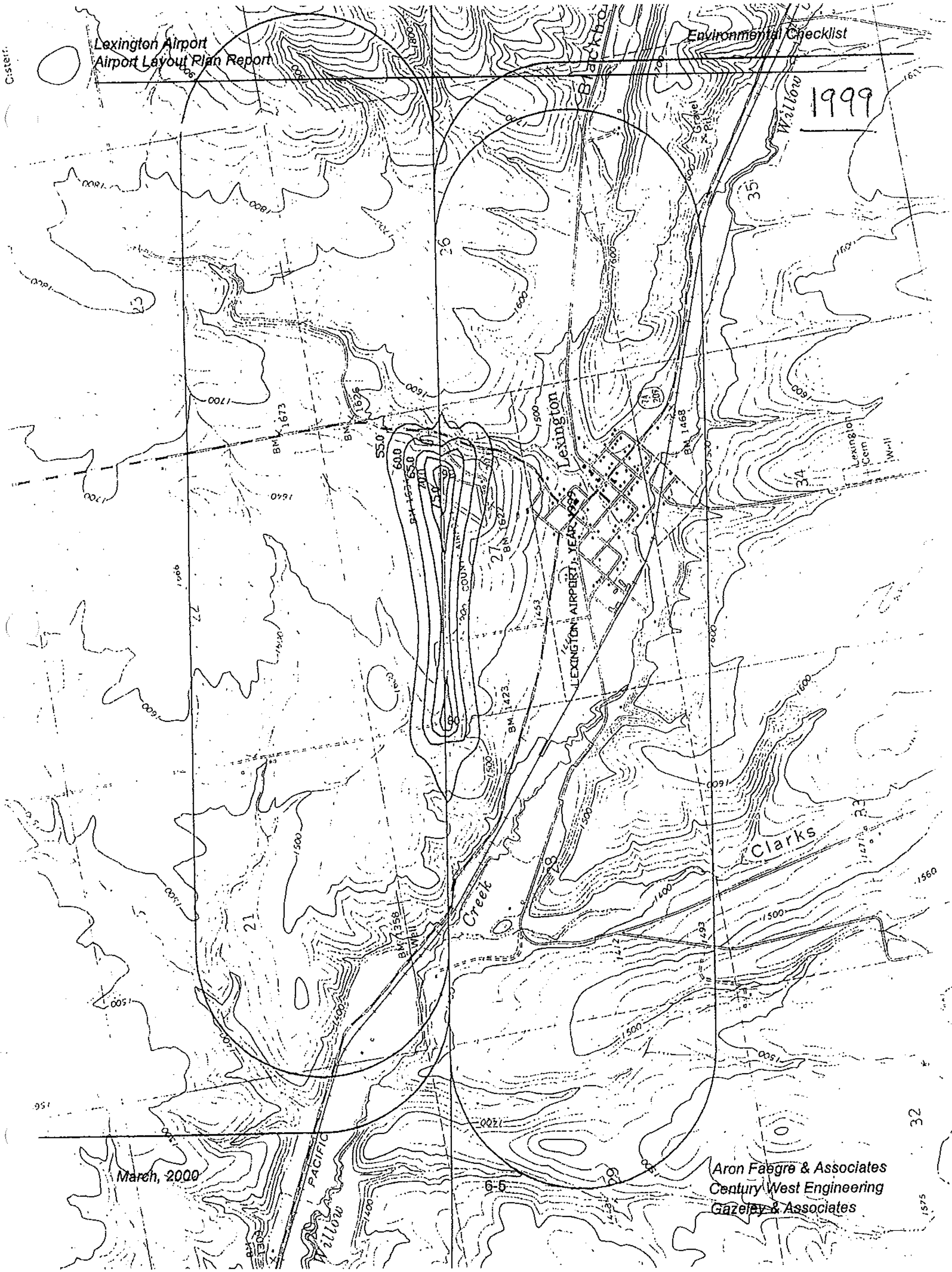
Noise Contours

The noise contours depicted begin at 55 DNL, and in 5 DNL increments, increase to 75 DNL. The noise contours are based on Oregon Aviation Plan forecast data for the years 1994 and 2014, described in Chapter Two. The forecast increase in activity results in only a minor increase in noise exposure for the areas immediately surrounding the airport. As described below, the existing and twenty-year 65, 70, and 75 DNL contours do not extend over any noise-sensitive land uses and therefore do not create significant impacts on the surrounding community. Based on federal standards, all land uses, including residential are considered to be compatible with noise levels below 65 DNL.

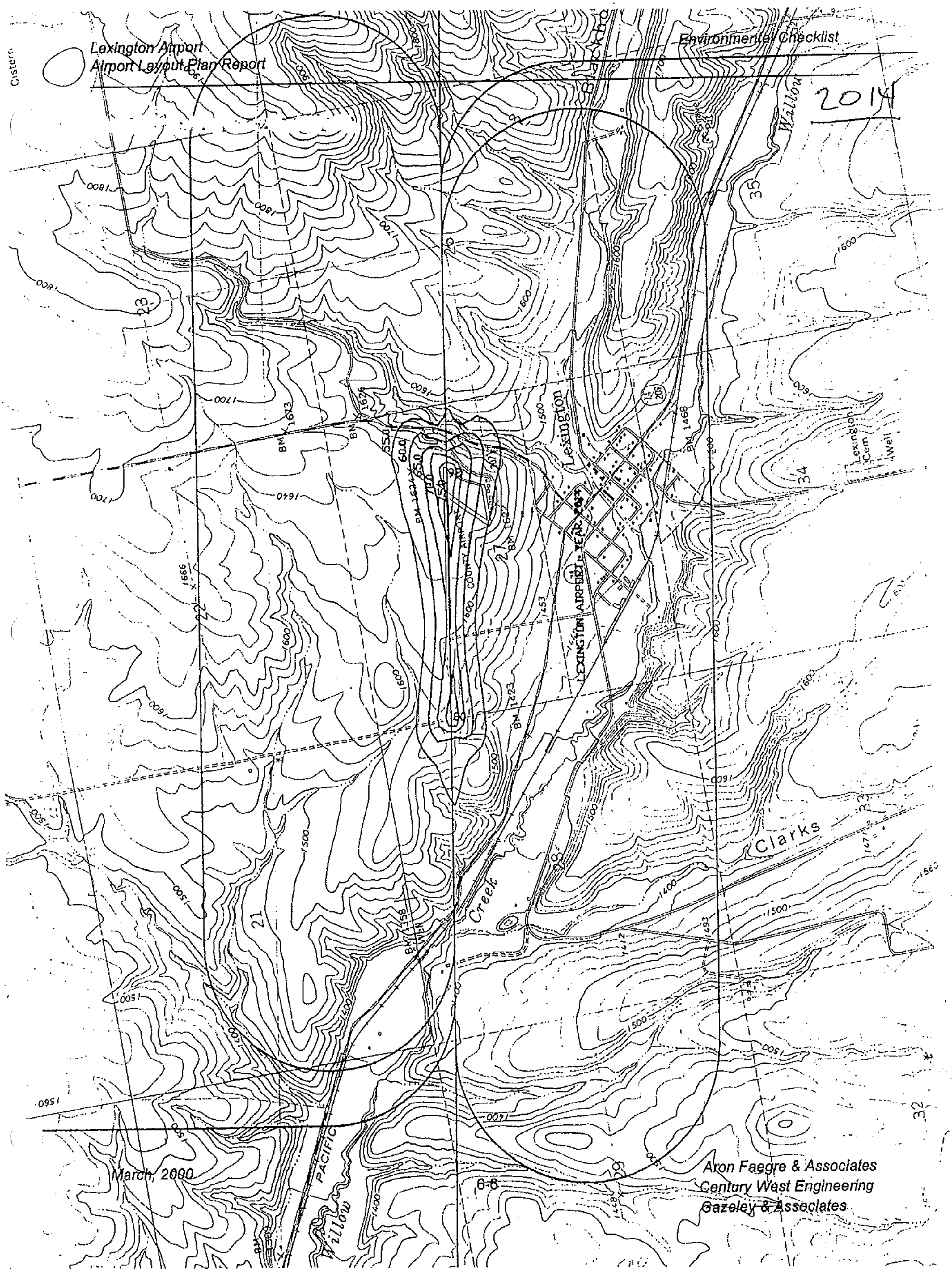
Due to the narrow configuration of airport property along the runway, portions of the 55, 60, and 65 DNL contours extend beyond airport property boundaries. The 70 and 75 DNL contours are contained within airport property boundaries. In the areas where the noise contours extend beyond airport property, the adjacent property largely consist of agricultural lands with exclusive farm use (EFU) zoning. The noise contours are depicted on **Figure 6-1** (1994) and **Figure 6-2** (2014). The twenty-year noise contours are also depicted on the Land Use Plan (Drawing 3), in Chapter Four.

In addition to federal guidelines, the State of Oregon DEQ has corresponding guidelines for noise compatibility and requires that an "Airport Noise Impact Boundary" be defined, with contours down to 55 DNL. While 55 DNL establishes the parameters of the study area, noise-sensitive land uses located in areas with impacts below 65 DNL are considered compatible with aviation activity. Like the FAA, DEQ recommends noise mitigation measures for land uses in areas with impacts exceeding 65 DNL.

1999


Lexington
LEXINGTON AIRPORT, YEAR
Clarks
Creek
Willow
PACIFIC
Lexington Cem
Gravel Pit
55.0
60.0
65.0

2014



Social and Socioeconomic Impacts

Positive social and socioeconomic impacts are expected to result from improvements to the Lexington Airport under the Preferred Alternative. These would include increased safety and potential improvements to fire protection measures for the airfield facilities, construction-induced employment, and the potential attraction of aviation and non-aviation related industry to an airport industrial park. One of the most significant improvements recommended in the Plan is the addition of a GPS instrument approach and an on-airport automated weather observation system. These improvements will enable the airport to be used by general aviation, business aviation, and medevac flights when weather conditions are below standard visual flight rules (VFR). Lexington Airport is the primary fixed wing medevac site for the communities served by Pioneer Memorial Hospital in Heppner. The improvements in instrumentation and weather observation will significantly improve the airport's ability to accommodate medevac flights during poor weather conditions.

Air Quality

Air quality is not expected to be adversely impacted. A representative of the Oregon Department of Environmental Quality stated that the area is in attainment for applicable air quality standards, and no significant increase over existing levels of air and/or surface traffic is anticipated.

Water Quality

Water quality impacts are a concern with any construction project, and especially when considering uses or sites where potentially hazardous materials, such as aviation fuel, fire retardants, and agricultural chemicals, are involved. One aerial applicator is currently based at the airport. The Oregon Department of Environmental Quality routinely recommends for airport projects that, at a minimum, investigations be performed which identify past and current agricultural spraying practices, aviation fuel storage facilities, and other potential sources for adverse water quality impacts associated with activities at the site. As noted earlier, the Plan recommends relocating the existing agricultural chemical loading facilities to an area more removed from the City of Lexington's drinking water cistern.

Wash down areas must comply with applicable environmental standards, and a National Pollutants Discharge Elimination System (NPDES) Permit must be obtained and complied with for all airport construction projects, and ongoing operations involving the discharge of stormwater or other site runoff. Adherence to applicable state and federal regulations and standards, including but not limited to compliance with the guidelines of FAA Advisory Circular 150/5370-10, will help protect against adverse

water quality or quantity impacts. No perennial streams are located in close proximity to the airport, and no underground storage tanks are located at this site.

Cultural Resources

The Oregon State Historic Preservation Office (SHPO), has indicated that no known cultural sites are recorded in the immediate area proposed for development, but that no surveys have been performed to confirm or deny the presence of significant sites under this impact category. The correspondence from SHPO indicates that some ninety- percent of the state has never been inventoried for cultural resources. If any historic or cultural resources are discovered during construction, the sponsor will be responsible for notifying SHPO and the other appropriate authorities. Any such resources discovered must be protected from adverse impacts or damages, which could potentially result from construction or other activities at Lexington Airport.

Natural Resources

A representative of the Oregon Department of Fish and Wildlife (ODFW), who attended the Joint Planning Conference, indicated that his office was unaware of any concerns related to proposed improvements at Lexington Airport. A search of the database of the Oregon Natural Heritage Program, Nature Conservancy, did not indicate any species of flora or fauna which are considered as sensitive by the State of Oregon as occurring in the vicinity. The U.S. Fish and Wildlife Service (USFWS) lists Steelhead trout *(Oncorhynchus mykiss)* as a Proposed Species for Federal Listing which may occur in the project vicinity, though it appears unlikely that any project at this location would have a direct impact upon this species. Also referenced in the USFWS correspondence are seven species of Mammals which are "Species of Concern," including six varieties of bats and one squirrel; two birds which are Species of Concern (Western burrowing owl, *Athene cunicularia hypugea*, and Ferruginous hawk, *Buteo regalis*); and one Reptile, two fish, and three plant species which are also "Species of Concern."

The USFWS suggests that a Biological evaluation be performed to determine whether the project may affect any listed and/or proposed species. The Service further recommends evaluating the proposal for potential impacts upon any candidate species for federal listing or "Species of Concern." It is possible, though not certain, that this recommendation is based upon an inventory of species which are known to be located within the entire Morrow County (e.g., note the listing of Steelhead trout as a potential species in the project area), as opposed to in the immediate vicinity of the Lexington Airport.

Wetlands, Flood Plains, Soils

According to a review of the US Fish and Wildlife's National Wetlands Inventory (NWI) and correspondence with local planning authorities, no jurisdictional wetlands or flood plain would be affected by any project at this facility.

The Soils Survey of Morrow County, Oregon indicates that soils in this area are predominantly "Mikkalo silt loam, 2-7 percent slopes." This soil type has an Agricultural Capability Class of IIIe, indicating that erosion is the chief limiting factor to crop production. Despite the problems with erosion, this soil may be considered as "High Value Farmland," as defined in OAR 660-033-0020(8). In that case, it would be considered as "Prime and Unique" soil under FAA Order 5050.4A. Nonetheless, Airport Layout Plans and associated projects are exempt from the Farmland Protection Policy Act (FPPA), and no further investigation under this impact category is necessary. Under ORS Chapter 836.625, airport uses are exempted from Exclusive Farm Use Zoning restrictions. Based on the state statute, a future proposal to convert adjacent farmland to aviation related use(s) would not be subject to the requirement to take an Exception to Oregon's Statewide Planning Goal 3, Agricultural Lands. As noted earlier, property acquisition is required along the northern edge of the airport to accommodate a recommended parallel taxiway. This land is currently zoned EFU by Morrow County.

Light Emissions

No adverse impacts relative to light emissions or glare are anticipated from implementation of the limited improvements, which are recommended by this study. The installation of runway end identifier lights (REIL), which are bright sequenced strobe lights placed at a runway end, may require some shielding to prevent interference with nearby residential areas. No significant conflicts with safe operations have been reported to have historically occurred as a result of light emissions, glare, or radio transmission interference from uses neighboring this airfield.

Construction Impacts

Silt fences, runoff diversion tactics, and stormwater detention are commonly implemented in similar projects, and should be utilized for any project on the airport property, in order to minimize adverse impacts of construction. FAA Advisory Circular 150/5370-10 describes common measures, which when property implemented will minimize adverse impacts associated with construction activities. Please also see the above discussion regarding water quality impacts.

Environmental Justice

U.S. Department of Transportation Executive Order 12898 "Federal Actions to Address Environmental Justice to Minority Populations and Low-Income Populations" (59 Fed. Reg. 7269 [1994]), provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

No adverse impacts are identified for any portion of the local community resulting from the recommendations of this plan.

LEXINGTON AIRPORT ENVIRONMENTAL CHECKLIST
TABLE 6-1

Potential Impact Category	Existing Conditions/Comments	Agency Advocate Further Analysis, / Is Some Impact Likely?
Noise	The current and 20-year noise contours do not impact nearby land uses, per state or federal standards.	NO
Compatible Land Use	No significant present concerns relative to observed land use. Future uses in vicinity must have burden of demonstrating compatibility with aviation and ORS Ch. 836.600-630; *Local governments must adopt and Map Airport Overlay Zoning consistent with State law.*	YES
Social/Socioeconomic Impacts	Expected to be positive, as is typical with airport projects, including but not limited to the enhancement of safety features and fire protection on-site; creation of jobs; improvement to the County's transportation systems base; and attraction of industry to the region.	YES
Air Quality	Area is in attainment for air quality; no change in current conditions is anticipated.	NO

LEXINGTON AIRPORT ENVIRONMENTAL CHECKLIST
TABLE 6-1 (continued)

Potential Impact Category	Existing Conditions/Comments	Agency Advocate Further Analysis, /Is Some Impact Likely?
Water Quality	DEQ typically concerned with past / present practices relative to containment of agricultural spray runoff; wash down areas, fuel storage areas. Removal of agricultural chemical loading area from near the City of Lexington's drinking water reservoir will reduce the risk of contaminating that public water source. Surface storm water runoff must be contained, treated, prior to discharge to any natural drainage system, water body. Adherence to FAA Advisory Circular 150/5370-10 would be required for any Federally-funded airport improvement project. See Construction Impacts, below.	POSSIBLE
Special Land Uses, DOT Act, Section 4(f)	No parks or other public land per this section affected.	NO
Historic, Architectural, Archaeological, and Cultural Resources	SHPO records no known cultural sites or resources this Section. No survey conducted. Sponsor must notify SHPO and halt work if any cultural resources located at any point.	POSSIBLE

LEXINGTON AIRPORT ENVIRONMENTAL CHECKLIST
TABLE 6-1 (continued)

Potential Impact Category	Existing Conditions/Comments	Agency Advocate Further Analysis, /Is Some Impact Likely?
Biotic Communities	A Biotic Survey is recommended by USFWS, to determine whether an improvement project would impact any species of flora or fauna, which is either Federally Listed as Threatened or Endangered (see below) or is considered by USFWS to be a "Candidate" Species for Federal listing or a "Species of Concern."	YES
Endangered and Threatened Species	One Species is Proposed to be Listed as Threatened, Species of Concern found in vicinity. Bald Eagle has been removed from Federal Listing since the time of the correspondence from USFWS. Biotic Survey recommended by USFWS.	YES
Wetlands	No Jurisdictional Wetlands would be affected by any foreseeable airport project.	NO
Floodplain	Not applicable.	NO
Shoreline Management	Not applicable.	NO

LEXINGTON AIRPORT ENVIRONMENTAL CHECKLIST
TABLE 6-1 (continued)

Potential Impact Category	Existing Conditions/Comments	Agency Advocate Further Analysis, /Is Some Impact Likely?
Coastal Barriers	Not applicable.	NO
Wild and Scenic Rivers	Not applicable.	NO
Farmland	Soils on the airport property appear to qualify as prime, according to State mandated criteria; however, any project would be exempt from FPPA.	NO
Energy Supply and Natural Resources	Minor commitment of soil, aggregate, petroleum resources required to facilitate construction. Energy and / or resource demands resulting from any development alternative would be relatively minimal.	NO
Light Emissions and Glare	No analysis of existing light emissions in airport vicinity performed. No lighting -related hazards reported by planner, airport operators, upon inquiry.	NO

LEXINGTON AIRPORT ENVIRONMENTAL CHECKLIST
TABLE 6-1 (continued)

Potential Impact Category	Existing Conditions/Comments	Agency Advocate Further Analysis, /Is Some Impact Likely?
Solid Waste Impacts	Development under any ultimate Preferred Alternative would not considerably increase production of waste materials at the facility.	NO
Construction Impacts	Temporary impacts will accrue during the construction phase. Adherence to provisions of FAA Advisory Circular 150/5370-10 should preclude foreseeable adverse impacts of construction.	POSSIBLE
Environmental Justice	No adverse impacts are anticipated for any portion of the local community as a result of recommended airport improvements.	NO

LEXINGTON AIRPORT (9S9)
AIRPORT LAYOUT PLAN REPORT
2000-2020

APPENDICES

Lexington Airport
Runway 8-26

AIRPORT AND RUNWAY DATA

Airport elevation	1634 feet
Mean daily maximum temperature of the hottest month	91.00 F.
Maximum difference in runway centerline elevation	56 feet
Length of haul for airplanes of more than 60,000 pounds	500 miles
Dry runways	

RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN

Small airplanes with approach speeds of less than 30 knots	350 feet
Small airplanes with approach speeds of less than 50 knots	930 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	3070 feet
95 percent of these small airplanes	3660 feet
100 percent of these small airplanes	4300 feet
Small airplanes with 10 or more passenger seats	4600 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5530 feet
75 percent of these large airplanes at 90 percent useful load	7460 feet
100 percent of these large airplanes at 60 percent useful load	6570 feet
100 percent of these large airplanes at 90 percent useful load	9560 feet
Airplanes of more than 60,000 pounds	Approximately 5590 feet

REFERENCE: Chapter 2 of AC 150/5325-4A, Runway Length Requirements for Airport Design, no Changes included.

Lexington Airport

AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

Aircraft Approach Category B
Airplane Design Group II
Airplane wingspan . . . . . 52.00 feet
Primary runway end approach visibility minimums are not lower than 1 mile
Other runway end approach visibility minimums are not lower than 1 mile
Airplane undercarriage width (1.15 x main gear track) . . . 11.50 feet
Airport elevation . . . . . 1634 feet

RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

	Airplane Group/ARC	
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is not treated as a factor:		
VFR operations with no intervening taxiway		700 feet
VFR operations with one intervening taxiway		700 feet
VFR operations with two intervening taxiways		700 feet
IFR approach and departure with approach to near threshold		2500 feet less 100 ft for each 500 ft of threshold stagger to a minimum of 1000 feet.
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is treated as a factor:		
VFR operations		2500 feet
IFR departures		2500 feet
IFR approach and departure with approach to near threshold . .		2500 feet
IFR approach and departure with approach to far threshold		2500 feet plus 100 feet for each 500 feet of threshold stagger.
IFR approaches		3400 feet
Runway centerline to parallel taxiway/taxilane centerline .	226.0	240 feet
Runway centerline to edge of aircraft parking	250.0	250 feet
Runway width		75 feet
Runway shoulder width		10 feet
Runway blast pad width		95 feet
Runway blast pad length		150 feet
Runway safety area width		150 feet
Runway safety area length beyond each runway end or stopway end, whichever is greater		300 feet
Runway object free area width		500 feet
Runway object free area length beyond each runway end or stopway end, whichever is greater		300 feet
Clearway width		500 feet
Stopway width		75 feet
Obstacle free zone (OFZ):		
Runway OFZ width		400 feet
Runway OFZ length beyond each runway end		200 feet
Inner-approach OFZ width		400 feet
Inner-approach OFZ length beyond approach light system		200 feet
Inner-approach OFZ slope from 200 feet beyond threshold . . .		50:1
Inner-transitional OFZ slope		0:1

Runway protection zone at the primary runway end:

Width 200 feet from runway end	500 feet
Width 1200 feet from runway end	700 feet
Length	1000 feet

Runway protection zone at other runway end:

Width 200 feet from runway end	500 feet
Width 1200 feet from runway end	700 feet
Length	1000 feet

Departure runway protection zone:

Width 200 feet from the far end of TORA	500 feet
Width 1200 feet from the far end of TORA	700 feet
Length	1000 feet

Threshold surface at primary runway end:

Distance out from threshold to start of surface	0 feet
Width of surface at start of trapezoidal section	400 feet
Width of surface at end of trapezoidal section	1000 feet
Length of trapezoidal section	1500 feet
Length of rectangular section	8500 feet
Slope of surface	20:1

Threshold surface at other runway end:

Distance out from threshold to start of surface	0 feet
Width of surface at start of trapezoidal section	400 feet
Width of surface at end of trapezoidal section	1000 feet
Length of trapezoidal section	1500 feet
Length of rectangular section	8500 feet
Slope of surface	20:1

Taxiway centerline to parallel taxiway/taxilane centerline	72.4	105 feet
Taxiway centerline to fixed or movable object	46.4	65.5 feet
Taxilane centerline to parallel taxilane centerline	67.2	97 feet
Taxilane centerline to fixed or movable object	41.2	57.5 feet
Taxiway width	26.5	35 feet
Taxiway shoulder width		10 feet
Taxiway safety area width	52.0	79 feet
Taxiway object free area width	92.8	131 feet
Taxilane object free area width	82.4	115 feet
Taxiway edge safety margin		7.5 feet
Taxiway wingtip clearance	20.4	26 feet
Taxilane wingtip clearance	15.2	18 feet

REFERENCE: AC 150/5300-13, Airport Design, including Changes 1 through 4.

Lexington Airport - Runway 8-26

DECLARED DISTANCE LENGTHS (feet)

Aircraft Approach Category B
Airplane Design Group II
Runway 8 approach visibility minimums are not lower than 1 mile
Runway 26 approach visibility minimums are not lower than 1 mile
Airport elevation . . . . . 1634 feet

	Runway 8 and 26	
Runway length	4150	4150
Stopway length	0	0
Clearway length	0	0
Runway safety area length beyond the stop end of runway	300	300
Runway object free area length beyond the stop end of runway	300	300

The following distances are positive in the direction of aircraft operations and negative in the opposite direction:

Distance from:		
the departure end of runway to the beginning of clearway	0	0
the departure end of runway to the beginning of departure RPZ	200	200
the approach end of runway to the start of takeoff	0	0
the approach end of runway to the threshold	0	0
the end of approach RPZ to the approach end of runway	200	200

The following lengths are standard RSA and ROFA lengths:

Runway safety area length to be provided:		
beyond the stop end of ASDA	300	300
beyond the stop end of LDA	300	300
before the approach end of LDA	300	300
Runway object free area length to be provided:		
beyond the stop end of ASDA	300	300
beyond the stop end of LDA	300	300
before the approach end of LDA	300	300

The following declared distances are for Approach Category A and B airplanes exclusively.

	Runway 8 (feet)	Runway 26 (feet)
Takeoff run available (TORA)	4150	4150
Takeoff distance available (TODA)	4150	4150
Accelerate-stop distance available (ASDA)	4150	4150
Landing distance available (LDA)	4150	4150
Usable stopway length	0	0
Distance from the stop end of LDA to runway end	0	0
Distance from the departure end of TORA to RPZ	200	200
Distance from the approach RPZ to the threshold	200	200

REFERENCE: Appendix 14 of AC 150/5300-13, Airport Design,

LEXINGTON AIRPORT ENVIRONMENTAL CHECKLIST PROCESS AND FINDINGS

The Oregon Department of Transportation, Aeronautics Division, retained Aron Faegre & Associates and Gazeley and Associates to perform an Airport Layout Plan (ALP) Update, and an Environmental Checklist to identify physical and environmental conditions of record which may limit improvement options for the Lexington Airport. In comparison to an Environmental Assessment or Environmental Review, the project scope was limited in this case, and included soliciting information of record from the applicable local, State and Federal sources relative to the elements of environmental assessment as they apply to this site. The scope of the project did not involve extensive interpretation, analyses, or the more comprehensive, follow-up correspondence and inquiries with affected agencies and parties as is normally associated with Environmental Impact Statements (EIS's), Environmental Assessments (EA's), and Environmental Reviews (ER's).

All research activities, including correspondence, data collection and documentation, were performed under the procedures of FAA Order 5050.4A, The Airport Environmental Handbook, which is intended to implement the applicable requirements of the National Environmental Policy Act (NEPA). This report briefly addresses each potential impact category, as identified by Order 5050.4A, which is to be investigated under the EA process. If a particular potential environmental impact category did not apply to this study site, the checklist is noted accordingly. Below is a narrative discussion of the categories in which potentially significant impacts were identified as possible, and where notable ecological or social conditions appear pertinent to the future development of this facility.

The Lexington Airport is zoned Morrow County Exclusive Farm Use (EFU), and EFU Zoning also surrounds the site on three sides (easterly, westerly, and northerly). On its southerly exposure, the facility is adjacent to portions of the Lexington city limits, and in some places, the airport property also abuts the northerly edge of the City of Lexington's Urban Growth Boundary (UGB). Although a few single-family residences are located in general proximity to the airfield, none are located within the 55ldn noise contours as projected for the planning period.

The consultant recommends that "airport friendly" zoning, recognizing aviation related uses as "outright permitted" uses, be applied to the subject property. This is consistent with the recently-enacted Oregon Revised Statutes (ORS), Chapter 836.600 through 836.630, regarding the appropriate zoning and protection of Oregon's airports, but is in contrast to the current condition at this and some other Oregon sites, where the zoning of the airport property does not explicitly allow aviation related activities or development. Also, height restrictive zoning, and, to some extent, use-restrictive zoning, are necessary components around an airstrip's periphery. Airport Overlay Zones, which protect necessary airspaces and limit incompatible uses, are the typical means of ensuring the safe operations of a general aviation airstrip and its appurtenances.

An Airport Overlay Zone is described in the Morrow County Zoning Ordinance and Comprehensive Plan; however, no Airport Hazard, Airport Approach, or similar Overlay Zoning is described in the City of Lexington's Zoning Ordinance, nor does any Overlay Zoning appear on either the County or City Zone Maps. Each of these should be amended to include Airport Overlay Zoning which is consistent with ORS Chapter 836.600-630.

Additionally, consistent with the Airport Land Use Compatibility Guidelines for small general aviation airports, from the State of Oregon Department of Transportation's Aeronautics Section, a 1,300 foot wide "Airport Development Area" is typically recommended to be established, centered on the runway centerline, for a length of 5,400 ***DM-this is dep. On runway length..*** feet. This Airport Development Area should be "*...under the airport's control to prevent incompatible land use development.*" (Page 56 of State Guidelines). Compliance with the "Airport Development Area" guideline would require the acquisition of some additional acreage to the north of the current airport property, for the length of the required Airport Development Area and for an approximate width of some 400 feet beyond the current northerly property line. Considering the current level of activity at this airfield, however, coupled with the fact that the property in question is in relatively low-impacting, farm use, acquisition of property for this purpose may or may not be a priority within the planning horizon.

The consultant advises that a general review of all Ordinance and Comprehensive Plan language, and Zone Maps, pertaining to the Lexington Airport be performed, to compare those with the requirements of ORS Chapter 836.600-630 for airport compatibility, and to identify any necessary changes to the local codes, Plans and or maps. Also, this Airport Layout Plan should be adopted as part of the Transportation Elements of the City and County's respective Comprehensive Plans.

Land uses surrounding the airport are primarily agriculture and single-family residences. No noise sensitive uses (e.g., residences) are located within the projected 55ldn noise contour. The City of Lexington has a 70,000 gallon drinking water cistern on the southerly portion of the airport property. The agricultural chemical applicator's loading area has historically been located near this municipal water source, and is proposed to be relocated under the current ALP Update. This will incur positive social impacts by reducing the risk of contamination of the City's water source. Additional positive social and socio-economic impacts which may be expected to result from improvements to the Lexington Airport under the Preferred Alternative include increased safety and potential improvements to fire protection measures for the airfield facilities, construction-induced employment, and the potential attraction of aviation and non-aviation related industry to an airport industrial park.

Air quality would not be expected to be adversely impacted. A representative of the Oregon Department of Environmental Quality stated that the area is in attainment for applicable air quality standards, and no significant increase over existing levels of air and/or surface traffic is anticipated.

Water quality impacts are a concern with any construction project, and especially when considering uses or sites where potentially hazardous materials, such as aviation fuel, fire retardants, and agricultural chemicals, are involved. Two aerial applicators are currently based at the airport. The Oregon Department of Environmental Quality routinely recommends for airport projects that, at a minimum, investigations be performed which divulge past and current agricultural spraying practices, aviation fuel storage facilities, and other potential sources for adverse water quality impacts associated with activities at the site.

Wash down areas must comply with applicable environmental standards, and a National Pollutants Discharge Elimination System (NPDES) Permit must be obtained and complied with for all airport construction projects, and ongoing operations involving the discharge of stormwater or other site runoff. The existing agricultural chemical loading area is proposed to be relocated under this project, to a location which is more removed from the City of Lexington's drinking water cistern, on the airport's southeasterly end. Adherence to applicable State and Federal regulations and standards, including but not limited to compliance with the guidelines of FAA Advisory Circular 150/5370-10, will help protect against adverse water quality or quantity impacts. No perennial streams are located in close proximity to the airport, and no underground storage tanks are located at this site.

The Oregon State Historic Preservation Office, SHPO, has indicated that no known cultural sites are recorded in the immediate area proposed for development, but that no surveys have been performed to confirm or deny the presence of significant sites under this impact category. The correspondence from SHPO indicates that some ninety percent of the State has never been inventoried for cultural resources. If any historic or cultural resources are discovered during construction, the sponsor will be responsible for notifying SHPO and the other appropriate authorities. Any such resource(s) discovered would be required to be protected from adverse impacts or damages which could potentially result from construction or other activities at the Lexington Airport.

A representative of the Oregon Department of Fish and Wildlife attended the Joint Planning Conference, and indicated at that time that his office has no concerns regarding the proposed airport project. A search of the database of the Oregon Natural Heritage Program, Nature Conservancy, did not indicate any species of flora or fauna which are considered as sensitive by the State of Oregon as occurring in the vicinity. The US Fish and Wildlife Service lists Steelhead trout *(Oncorhynchus mykiss)* as a Proposed Species for Federal Listing which may occur in the project vicinity, though it appears unlikely that any project at this location would have a direct impact upon this species; seven species of Mammals which are "Species of Concern", including six varieties of bats and one squirrel; two birds which are Species of Concern (Western burrowing owl, *Athene cunicularia hypugea*, and Ferruginous hawk, *Buteo regalis*); and one Reptile, two fish, and three plant species which are also Species of Concern.

The US Fish and Wildlife Service suggests that a Biological evaluation be performed to determine whether the project may affect any listed and/or proposed species. The Service further recommends evaluating the proposal for potential impacts upon any Candidate species for Federal Listing or "Species of Concern". It is possible, though not certain, that this recommendation is based upon an inventory of species which are known to be located within the entire Morrow County (e.g., note the listing of Steelhead trout as a potential species in the project area), as opposed to in the immediate vicinity of the Lexington Airport.

According to a review of the US Fish and Wildlife's National Wetlands Inventory (NWI) and correspondence with local planning authorities, no jurisdictional wetlands or flood plain would be affected by any project at this facility. The Soils Survey of Morrow County, Oregon indicates that soils in this area are predominantly "Mikkalo silt loam, 2-7 percent slopes". This soil type has an Agricultural Capability Class of IIIe, indicating that erosion is the chief limiting factor to crop production.

Despite the problems with erosion, this soil may be considered as "High Value Farmland", as defined in OAR 660-033-0020(8). In that case, it would be considered as "Prime and Unique" soil under FAA Order 5050.4A. Nonetheless, Airport Layout Plans and associated projects are exempt from the Farmland Protection Policy Act (FPPA), and no further investigation under this impact category is necessary. Under ORS Chapter 836.625, airport expansion projects also appear to be exempted from Exclusive Farm Use Zoning restrictions. This implies that a future proposal to convert adjacent farmland to aviation related use(s) may not be subject to the requirement to take an Exception to Oregon's Statewide Planning Goal 3, Agricultural Lands. Nonetheless, no such acquisition or conversion of farmland is anticipated in the near term as a result of this study.

No adverse impacts relative to light emissions or glare are anticipated from implementation of the limited improvements which are recommended by this study. No significant conflicts with safe operations have been reported to have historically occurred as a result of light emissions, glare, or radio transmission interference from uses neighboring this airfield.

Silt fences, runoff diversion tactics, and stormwater detention are commonly implemented in similar projects, and should be utilized for any project on the airport property, in order to minimize adverse impacts of construction. FAA Advisory Circular 150/5370-10 provides additional measures which the consultant advises be implemented to minimize adverse impacts of airport construction activities. Please also see the above discussion regarding water quality impacts.

bc: Eckert, Miller

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon State Office
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266
(503) 231-6179 FAX: (503) 231-6195

Reply To: 1-7-98-SP-328
File Name: SP328.WPD

August 10, 1998

Aron Faegre & Associates
520 SW Yamhill
Portland, OR 97204

Dear Mr. Faegre:

This is in response to your, dated, requesting information on listed and proposed endangered and threatened species that may be present within the area of the Lexington Airport Layout Plan Update project in Morrow County. The U.S. Fish and Wildlife Service (Service) received your letter on July 28, 1998.

We have attached a list (Attachment A) of threatened and endangered species that may occur within the area of the Lexington Airport Layout Plan Update project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Federal Aviation Administration (FAA) requirements under the Act are outlined in Attachment B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, FAA is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in NEPA (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Attachment B, as well as 50 CFR 401.12.

If FAA determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, FAA is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Attachment A also includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published September 19, 1997, in the Federal Register (Vol. 62, No. 182, 49398) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect candidate species or species of concern, FAA is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends addressing potential impacts to these species in order to prevent future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, FAA may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages FAA to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Angie Hernandez or Diana Hwang at (503) 231-6179. For questions regarding anadromous fish, please contact National Marine Fisheries Service, 525 NE Oregon St., Suite 500, Portland, Oregon 97232, (503) 230-5400. All correspondence should include the above referenced file number.

Sincerely,

Russell D. Peterson
State Supervisor

Attachments
SP 328
cc: PFO-ES
ODFW (nongame)

ATTACHMENT A

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR IN THE LEXINGTON AIRPORT LAYOUT PLAN UPDATE PROJECT AREA

1-7-98-SP-328

LISTED SPECIES[1]

Birds		
Bald eagle	*Haliaeetus leucocephalus*	T

PROPOSED SPECIES

Fish		
Steelhead (Middle Columbia River)[2]	*Oncorhynchus mykiss*	**PT

CANDIDATE SPECIES

None

SPECIES OF CONCERN

Mammals	
Pale western big-eared bat	*Corynorhinus (=Plecotus) townsendii pallescens*
Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii*
Small-footed myotis (bat)	*Myotis ciliolabrum*
Long-eared myotis (bat)	*Myotis evotis*
Long-legged myotis (bat)	*Myotis volans*
Yuma myotis (bat)	*Myotis yumanensis*
Washington ground squirrel	*Spermophilus washingtoni*
Birds	
Western burrowing owl	*Athene cunicularia hypugea*
Ferruginous hawk	*Buteo regalis*
Amphibians and Reptiles	
Northern sagebrush lizard	*Sceloporus graciosus graciosus*

Fish

Pacific lamprey	*Lampetra tridentata*
Interior redband trout	*Oncorhynchus mykiss gibbsi*

Plants

Laurence's milk-vetch	*Astragalus collinus* var. *laurentii*
Hepatic monkeyflower	*Mimulus jungermannioides*
Little mousetail	*Myosurus minimus* ssp. apus (= var. *sessiliflorus*)

(E) - Listed Endangered *(T) - Listed Threatened* *(CH) - Critical Habitat has been designated for this species*
(PE) - Proposed Endangered *(PT) - Proposed Threatened* *(PCH) - Critical Habitat has been proposed for this species*

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

(CF) - Candidate: National Marine Fisheries Service designation for any species being considered by the Secretary for listing for endangered or threatened species, but not yet the subject of a proposed rule.

** *Consultation with National Marine Fisheries Service required.*

1/ *U. S. Department of Interior, Fish and Wildlife Service, October 31, 199-, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12.*

2/ *Federal Register Vol. 63, No. 46, March 10, 1998, Proposed Rule - Middle Columbia and Upper Willamette River Steelhead*

ATTACHMENT B

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTION 7(a) and (c) OF THE ENDANGERED SPECIES ACT

SECTION 7(a)-Consultation/Conference

Requires:

1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and

3) Conference with FWS when a Federal action is likely to jeopardize the continued existence o f a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

SECTION 7(c)-Biological Assessment for Major Construction Projects[1]

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify and proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct and on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or for potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures and (6) prepare a report documenting the results, including a discussion of study methods used, nay problems encountered, and other relevant information. The BA should conclude whether or not a listed species will be affected. Upon completion, the report should be forwarded to our Portland Office.

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[1] A construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332. (2)c). On projects other that construction, it is suggested that a biological evaluation similar to the biological assessment be undertaken to conserve species influenced by the Endangered Species Act.