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Airport Master Plan

The Master Plan Update for Corvallis Municipal Airport has been prepared to assess and direct improvements that will be required to accommodate future aviation demand. The master planning process has made use of a working group of airport stakeholders to provide input concerning airport development issues. Three Working Group meetings were held to gather input on the airport and establish a concept for future development at the airport from a broad range of interested parties. In addition, the development of the Airport Master Plan Update has been coordinated with the Airport Advisory Commission, Airport staff, City of Corvallis staff, resource agencies, the State of Oregon, and the Federal Aviation Administration.

In March 2001, a Working Group meeting to review the Master Plan Update's recommended plan was held. Although not a voting committee, a general consensus concerning the recommended plan was achieved. All concerns expressed by the Working Group participants, City Staff, and the FAA have been addressed.

The long-term development plan for the airport is summarized in the Executive Summary. It is further graphically depicted in Figure D7 entitled, Conceptual Development Plan.

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Last Updated (Wednesday, October 05 2005)

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Executive Summary

Introduction

The Master Plan Update for Corvallis Municipal Airport has been prepared to assess and direct improvements that will be required to accommodate future aviation demand. The master planning process has made use of a working group of airport stakeholders to provide input concerning airport development issues. Three Working Group meetings have been held to gather input on the airport and establish a concept for future development at the airport from a broad range of interested parties. In addition, the development of the Airport Master Plan Update has been coordinated with the Airport Advisory Commission, Airport staff, City of Corvallis staff, resource agencies, the State of Oregon, and the Federal Aviation Administration.

In March 2001, a Working Group meeting to review the Master Plan Update's recommended plan was held. Although not a voting committee, a general consensus concerning the recommended plan was achieved. All concerns expressed by the Working Group participants, City Staff, and the FAA have been addressed.

The long-term development plan for the airport is summarized in the following paragraphs. It is further graphically depicted in Figure D7 entitled, *CONCEPTIONAL DEVELOPMENT PLAN,* located on page D.17 of the Master Plan Update.

Aviation Activity Forecasts

The forecasting of future airport activity in terms of aircraft operations (landings and takeoffs), and based aircraft at Corvallis Municipal Airport, serves as a significant basis for analyzing existing airport facilities and identifying future needs and requirements for these facilities.

Corvallis Municipal Airport will continue to be a significant general aviation and commercial service airport serving Corvallis and the region. The airport is an

important transportation facility; it is a center for aviation-related business, and it supports regional economic development activity.

General aviation aircraft operated at the airport are primarily used by individuals and companies to support private, charter, and corporate activity, although the airport does have some air cargo activity. In addition, the airport will be utilized for commercial passenger service activity. The aircraft types projected to be used at Corvallis Municipal Airport during the next 20 years are the same types that use the airport presently. These types include small single engine prop-aircraft and larger business-use aircraft, including business jet aircraft, along with commuter-type commercial passenger aircraft and larger charter service passenger aircraft (e.g., Boeing 737). The number of annual aircraft operations (landings and takeoffs) at the airport is forecast to increase moderately during the next 20 years. The number of aircraft operations is forecast to increase from 85,061 in 1999 to approximately 140,000 in 2020. The number of based aircraft at the airport is expected to increase, from the current number of approximately 132, to 193 in 2020. There is also a significant demand for commercial passenger service at the airport, with the potential for over 56,000 annual passenger enplanements being forecast by the year 2020.

In concert with the status of the airport, some basic assumptions have been established in the Master Plan Update that are intended to direct the development of the airport in the future. These include:

Assumption One. The first assumption states that the airport facility will be developed to accommodate the full range of general aviation aircraft, including corporate business jets, under almost all weather conditions. In addition, there will continue to be demand for the airport to accommodate commercial service passenger aircraft operations by airlines using 9 to 30 passenger turbo-prop aircraft and charter air carrier aircraft (B-737, B-727, MD-80, etc.) a few times a year (primarily for college sports teams). Thus, the airport should be designed to precision approach standards, with proper clearances appropriate to that designation. The two runways at the airport are designed to accommodate different aircraft types, along with differing approach minimums. Specifically, the assumptions are:

Runway 17/35. The existing and future Airport Reference Code for this runway is C-II (the majority of the business jet fleet is included in this designation). The design aircraft is the Canadair CL-600 (a medium to large cabin business jet). The precision instrument approach to Runway 17 will continue to be maintained and instrument approach capabilities (as low as ¾ mile visibility

minimums) to Runway 35 are programmed (Runway 35 currently has non-precision approach capabilities with 1 mile visibility minimums).

Runway 9/27. The existing and future Airport Reference Code for this runway is B-II (the majority of the general aviation propeller aircraft, along with some of the business jets). The design aircraft is the Beech Super King Air B200. Runway 9/27 will be maintained as a visual approach facility.

Assumption Two. The second assumption focuses on the need to accommodate the forecast operations of all aviation types, as expressed by the Annual Service Volume capabilities. It should be noted that the forecasts of activity for the airport are based on anticipated population and economic growth in Corvallis and the region. Forecasts of operational activity and the analysis of the capacity of the airport's runway layout indicate that the airport's existing runway configuration can efficiently accommodate aircraft landings and takeoffs forecast until the end of the 20-year planning period and beyond. This analysis indicates that, although the existing two-runway layout can accommodate forecast demand; the airport's system of runways, taxiways, and approaches should be programmed for improvements that will maximize the ability to efficiently use the airport (taxiway improvements and runway extensions are likely to be justified in the future).

Assumption Three. The third assumption relates to the requirement that the airport is to be developed to complement and enhance on-airport and off-airport regional economic development activities.

Assumption Four. The fourth assumption focuses on the relationship of the airport to off-airport land uses and the compatible and complementary development of each. This is inherent in the design considerations and placement of facilities so as to complement, to the maximum extent possible, off-airport development, and to ensure the continued compatibility of the airport environs with the operation of the airport.

Development Recommendations

Introduction

Because existing airport facilities are well configured to accommodate existing demand, the improvement recommendations contained in the Master Plan Update are not extraordinary. Rather, the improvements that will be needed over the next

two decades will be focused on incremental upgrades that will allow the airport to efficiently and safely accommodate orderly growth and anticipated demand.

Recommendations

Runway Length. The existing runway lengths provided at Corvallis Municipal Airport (Runway 17/35 is 5,900 feet and Runway 9/27 is 3,335) are adequate to accommodate the majority of the existing demand. However, in order to regularly accommodate operations by air carrier charter aircraft, a runway extension for the main runway is required (a length of 6,500 feet is minimum and 7,000 feet would be preferred).

After a review of potential alternatives, it was determined that the ultimate primary runway configuration for the airport should include a 750-foot extension on the north end and a 300-foot extension on the south end of Runway 17/35. This would preserve the ability to provide a runway length of 6,950 feet in the future, when and if demand dictates. The runway extensions will be developed in phases and the extension to the north will initially be constructed as a paved overrun.

Following the extension of Runway 17/35, the relocation of Airport Road may be required so that it does not cross the area contained in the north runway protection zone. Phasing of proposed runway extension projects can be revised in consideration of economic and environmental considerations.

Taxiway System. The existing taxiway system at the airport provides efficient routing for taxiing aircraft between the runway system and various landside use areas on the airport in consideration of present activity levels. The airport currently has a full parallel taxiway system serving the north side of Runway 9/27 (Taxiway A), and a partial parallel taxiway system located on the east side of Runway 17/35 (Taxiway B). Because Runway 17/35 is the airport's primary runway, serving it with a full parallel taxiway is particularly important, and the extension of Taxiway B to the north is recommended in the short-term**.**

Aviation Use Facility Development Area (east of Runway 17/35 and north of Runway 9/27). An analysis of future demand and facility needs indicates that the aviation use facilities can be contained in the vicinity of the existing terminal area (east of Runway 17/35 and north of Runway 9/27).

This area is currently developed with a variety of hangar types (FBO, aircraft maintenance, corporate, executive, and T-hangars), along with passenger terminal facilities and airport support facilities (fuel storage, maintenance, etc.). Because of the existing infrastructure (roadways, taxiways, utilities, etc.) serving this area, from an economic/cost of development standpoint, it will be critical to make efficient use of the existing terminal area for future aviation facilities.

Following a lengthy discussion with the Working Group participants, along with additional input from the City of Corvallis staff and the Federal Aviation Administration, a layout of future facilities was formulated. The recommended plan recognizes that the existing big hangar (Bertea) would eventually reach its useful life and could not be maintained in a cost effective manner. Because of the strategic location of the Bertea Hangar, it would be best to plan for its removal. Eventually, the big hangar's site should be used for improved terminal facilities and improved taxiway access serving the hangar development area. The FBO facility that is currently located in the Bertea Hangar is proposed to be relocated to a new hangar that will be built on the west side of the hangar development area.

Non-Aviation Use Facility Development Areas. There are several areas on the airport that are not required for runway, taxiway, or approach protection considerations, and are unlikely to be provided with taxiway access in the future. Those areas that cannot be feasibly provided with taxiway access are likely to be used for non-aviation facilities.

The southeast corner of airport property is identified for non-aviation, airport compatible development. This area has been identified in the past as having the potential to accommodate a non-aviation use that requires a larger site. In addition, all of the area on the west side of Runway 17/35 is best used for non-aviation facilities, although any area containing wetlands should remain undeveloped. It should be noted that the majority of airport property that is west and south of the runway/taxiway object free areas is currently leased for agriculture. Agriculture is an appropriate non-aviation use for airport property that brings income to the airport and is compatible with the operation of the airport; therefore, the agricultural activity should continue until a "higher and better" use is obtained.

In addition, the industrial/commercial uses north of Airport Road, along with those east of the railroad tracks, are appropriate. The land east of Plumley Street has also been identified for non-aviation use, along with the land south of Airport Road, which is directly adjacent to Airport Place.

Development Program

In overview, the Development Program for Corvallis Municipal Airport calls for retention of the existing layout of facilities, with the capability to extend the primary runway to 6,950 feet being preserved. Other significant improvements are related to the taxiway system and aviation-use facility development areas.

The Development Program is presented in three phases: the first or short-range phase (0-5 years), the second or intermediate-range phase (6-10 years), and the long-range phase (11-20 years). Projects planned for each phase are to be implemented on an "as needed" basis in consideration of actual demand and funding availability. Projects include:

Phase I (0-5 years) projects:

- Taxiway and aircraft parking apron construction.
- Construction of hangar facilities.
- Runway lighting and sign improvements.
- Security fencing.
- Construction of an overrun on the north end of the primary runway.
- Pavement rehabilitation and maintenance.
- Utility and roadway infrastructure improvements.
- Construction of an Aircraft Rescue and Fire Fighting (ARFF) facility.
- Design and construction of a new passenger terminal facility.

Phase II (6-10 years) projects:

- Taxiway and aircraft parking apron construction.
- Construction of hangar facilities.
- Construction of an air freight facility.
- Utility and roadway infrastructure improvements.
- Pavement rehabilitation and maintenance.
- Relocation of the airport's fuel storage facility.
- Conversion of the overrun area on the north end of the primary runway to full-use pavement.

Phase III (11-20 years) projects:

- Pavement rehabilitation and maintenance.
- Aircraft parking apron and taxiway construction.
- Construction of hangar facilities.
- Extension of primary runway to the south.
- Utility and roadway infrastructure improvements.

Over the course of the 20-year planning period, the plan identifies the potential need for over $25 million in capital improvements at Corvallis Municipal Airport. In addition to revenues generated on the airport, capital improvement funding sources that have been identified include the Federal Aviation Administration, the State of Oregon, and third-party private investment.

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Introduction

Corvallis Municipal Airport is a vital part of the national airport system, as well as being an integral component of the transportation infrastructure that serves the City of Corvallis, Benton County, and west-central Oregon. Corvallis is in the heart of Oregon's Willamette Valley and the home of Oregon State University.

The airport, along with its aviation related businesses and facilities, represents a vital and significant regional economic asset. In addition to the many aviation related assets, the airport also provides benefits to local businesses and industry, promotes tourism, as well as encourages additional business development and expansion throughout the City, surrounding communities, and adjacent counties.

The *Corvallis Municipal Airport Master Plan* was completed in 1990. During the intervening years, changes have transpired within the aviation industry on a local, regional, and national level that impact the aviation facilities and services provided at the airport. These changes necessitate a reevaluation of the airport's Master Plan as a means of analyzing current and forecast operational characteristics and facilities, as well as updating the program for airport development. The population growth and economic expansion that are occurring within the region have necessitated a long-range analysis and plan for the future needs of the airport to accommodate aviation demand.

The focus of this document will be on the total aviation facility and its environs, with the overall planning goal being the development of an aviation facility that can accommodate future demand that is not significantly constrained by its environs. This initial *Inventory* chapter will examine three basic elements involved with the existing and future development of Corvallis Municipal Airport. These elements are: the airport facilities (runways, taxiways, aircraft parking aprons, hangars, maintenance facilities, ground access, etc.); the relationship to the airport/airspace system; and the airport environs. Subsequent chapters will detail the airport's forecasts of aviation activity, the ability of airport facilities to safely and efficiently meet the needs associated with

the projected aviation activity, the compatibility of the airport with surrounding land uses, and recommended future development within and around airport property.

As illustrated in the following figure, *AIRPORT LOCATION MAP,* the City of Corvallis, with a population of approximately 50,880, is the county seat for Benton County. Benton County is located in west-central Oregon and has a population of 77,192. Corvallis is perhaps best known as the home of Oregon State University. Other nearby attractions include: Avery Park; Peavy Arboretum; the Willamette River; Mary's River; Finley National Wildlife Refuge; and the Siuslaw National Forest, a 630,000 acre forest that includes the Oregon Dunes National Recreation Area.

Airport Role and Facilities

Corvallis Municipal Airport is owned and operated by the City of Corvallis, with the Public Works department having management and operational responsibility for the airport. The City has established the Corvallis Municipal Airport Advisory Committee to provide recommendations concerning all airport matters. The Airport Manager has the day-to-day responsibility for the operation of the airport. The City Council has ultimate responsibility for all airport policy considerations, as well as the compliance with all pertinent Federal, State, and local regulations.

The airport is located approximately five (5) miles south of the Central Business District (CBD) of Corvallis. The Airport Reference Point (ARP) is located at Latitude 44° 29' 49.897" N and Longitude 123° 17' 23.387" W. Corvallis Municipal Airport, classified as a commercial service airport by the FAA's National Plan of Integrated Airport Systems (NPIAS), and as a Business or High Activity General Aviation Airport by the Oregon Department of Aviation, has an elevation of 246 feet above mean sea level (AMSL) and has property consisting of approximately 1,490 acres.

In 1999 and 2000, the airport was served by a commuter airline that provided six (6) weekday and four (4) daily, non-stop flights to Portland International Airport and four (4) weekday and three (3) daily flights to Newport, Oregon. For its Corvallis service, this airline operated 9-seat Cessna Caravan aircraft. Corvallis Municipal Airport is operated with two runways (Runways 17/35 and 9/27), taxiways, a terminal/hangar structure, two FBO hangars, aircraft storage hangars, aprons, and support facilities. The following illustration, entitled *EXISTING AIRPORT LAYOUT,* provides a graphic presentation of the existing airport facilities.

Figure A1
Airport Location Map

Airside Facilities

Runways. The primary runway at the airport, Runway 17/35, is 5,900 feet in length and 150 feet in width. The runway is constructed of asphalt, considered to be in good condition, and has a gross weight bearing capacity of 60,000 pounds single-wheel, 100,000 pounds dual-wheel, and 150,000 pounds dual-tandem-wheel main landing gear configuration. The Runway is equipped with Medium Intensity Runway Lights (MIRL) and a four (4) light Vertical Approach Slope Indicator (VASI) located on the left-hand side of both Runways. The Runway 17 end is served by an Instrument Landing System (ILS) composed of a localizer, a glide slope, and a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). Runway 35 is equipped with Runway End Identifier Lights (REILS).

Runway 9/27 is 3,345 feet in length, 75 feet in width, and is constructed of asphalt. Runway 27 has a 190-foot displaced threshold. The pavement is considered to be in good condition, and has a gross weight bearing capacity of 51,000 pounds single-wheel, 65,000 pounds dual-wheel, and 100,000 pounds tandem-wheel main landing gear configuration. This runway is equipped with Medium Intensity Runway Lights (MIRL) and a four (4) light Precision Approach Path Indicator (PAPI) serving Runway 27.

Taxiways. The airside facilities at Corvallis Municipal Airport, in addition to the runways mentioned above, are composed of several taxiways that provide access from the runways to the various landside aircraft use areas. From the terminal apron, Taxiway A, which runs parallel to Runway 9/27, provides access to Runway 9, Runway 27, and Runway 17. Taxiway B provides access to Runway 35, as well as cross-field access to the terminal and hangar area. Exit taxiways consist of Taxiways B-1, B-2, and B-3, which allow access to Taxiway B and Runway 17/35. These taxiways are 50 feet in width.

Pavement Conditions. As part of the Oregon Aviation System Plan, the State of Oregon Department of Aviation prepared a Pavement Maintenance - Management Program for eligible airports within the state. The final report for Corvallis Municipal Airport was published in April 1999.

The pavement condition rating quantifies the various distresses measured in a pavement using seven classification ratings that range from an “excellent” rating (a maximum pavement condition index of 100, typically associated with new pavement construction or new overlay) to a “failed” rating (minimum pavement condition index of 0).

The pavement condition index provides a general sense of the pavement condition and the magnitude of work that will be required to rehabilitate the pavement. To put this

rating into perspective, it is helpful to consider its relationship in the PMS. In general, a pavement section with a PCI ranging from 0 to 40 is considered to be in such poor

Figure A2
Existing Airport Layout

condition that reconstruction is usually the only feasible repair alternative. On the other hand, a pavement section with a PCI value ranging from 75 to 90 is a prime candidate for preventative maintenance techniques such as crack sealing and patching.

The pavement condition index and associated pavement rating for Corvallis Municipal Airport in 1998 are illustrated in the following figure entitled *PAVEMENT CONDITION.* Please refer to the *Oregon Department of Transportation Pavement Evaluation/Maintenance Management Program for Corvallis Municipal* Airport for additional information.

Landside Facilities

Landside development at the airport includes a terminal/hangar structure, aircraft parking aprons, corporate hangars, T-hangars, a Fixed Base Operator (FBO) hangar, fuel storage facilities, and access roadways.

Aprons. There are two aircraft parking aprons at Corvallis Municipal Airport. The terminal apron is located north of Runway 9/27 and consists of approximately 342,000 square feet of aircraft parking and movement space. This apron currently accommodates 34 paved tie-downs for aircraft parking and storage. The second apron, located east of the terminal apron, provides roughly 94,000 square feet of space and accommodates 12 paved tie-downs for aircraft parking and storage.

Passenger Terminal Facilities. The passenger terminal facilities are located in the main hangar north of, and adjacent to, the main apron. The terminal facilities consist of an airline ticketing counter, a baggage handling area, and a food service area. Apron loading and unloading of passengers is utilized.

Hangar Facilities. There are currently two full-service Fixed Based Operators (FBO) located on airport property: Avia Flight Services and Bertea Aviation. Bertea's facilities are located in the main hangar. Avia Flight Services is located east of the apron and south of the T-hangars. The T-hangars accommodate over 100 general aviation aircraft.

Fuel Storage Facility. Aviation fuel is presently stored in four aboveground storage tanks located west of the terminal on the northwest portion of the main apron. The tanks consist of two (2) 12,000 gallon Jet-A and two (2) 12,000 gallon 100LL AVGAS.

Aircraft Rescue and Fire Fighting (ARFF) Facility. Currently, an ARFF facility is not located on airport property.

Figure A3
Pavement Condition

Miscellaneous Facilities. Taxiway C (formerly a crosswind runway) is now closed to all aviation activity, and is currently used by the Oregon State Highway Patrol for driver training activities. North of the airport is the Airport Industrial Park, offering industrial, research, manufacturing, and processing lots ranging from one to twenty acres. Currently, the area consists of approximately 175 acres and houses tenants that include: FedEx, Western Pulp Products, Oregon Rubber Co., Overall Laundry, Ramsay/Gerding Construction, S-Tech, PlasTech Inc., Tripod Data, and Software Support Services.

Vehicular Access. Primary vehicular access to Corvallis Municipal Airport is provided from US Highway 99W by way of Airport Avenue and Airport Place. US Highway 99W provides access to the Central Business District of Corvallis. A secondary airport entrance road is located northeast of the T-hangars off Plumley Road.

Airspace System/Navigation and Communication Aids

As with all airports, Corvallis Municipal Airport functions within the local, regional, and national system of airports and airspace. The following narrative gives a brief description of Corvallis Municipal Airport's role as an element within these systems.

Air Traffic Service Areas and Aviation Communications

Within the continental United States, there are some twenty-two geographic areas that are under Air Traffic Control (ATC) jurisdiction. Air traffic services within each area are provided by air traffic controllers in Air Route Traffic Control Centers (ARTCC). The airspace overlying Corvallis Municipal Airport is contained within the Seattle ARTCC service area and includes the airspace in Washington and portions of Oregon, Idaho, and California. The airport is equipped with an Aeronautical Advisory Station (UNICOM) on frequency 123.0.

Airspace and NAVAIDS Analysis

The following illustration, *AIRSPACE/NAVAIDS SUMMARY*, depicts the airports, local airspace, and navigational facilities in the vicinity of Corvallis Municipal Airport.

Local airspace surrounding Corvallis Municipal Airport is designated as Class E airspace. The configuration of each Class E airspace area is tailored to individual airports. Generally, Class E airspace consists of the immediate controlled airspace at airports without control towers and is intended to provide a transition area for instrument approaches. The floor of the Class E airspace at Corvallis Municipal Airport is established at 700 feet above ground level (AGL).

Figure A4
Airspace / NAVAIDS Summary

The navigational aids (NAVAIDS) available for use by pilots in the vicinity of the airport are Non-Directional radio Beacon (NDB) facilities and VOR/DME facilities. NDBs are general purpose radio beacons that an aircraft equipped with a loop antenna can home in on or determine its bearing relative to the sending facility. A VOR-DME system is a Very High Frequency Omnidirectional Range Station with Distance Measuring Equipment transmitting very high frequency signals, 360 degrees in azimuth oriented from magnetic north. This DME equipment is used to measure, in nautical miles, the slant range distance of an aircraft from the navigation aid.

The Corvallis VOR-DME (115.40) is located on airport property just west of Runway 17/35 and south of the blast pad area on the west end of Runway 9/27. The Lewisburg NDB (225 LWG) is located approximately 7 NM to the north of the airport.

There are presently six published instrument approach procedures at Corvallis Municipal Airport, which are listed in the following table entitled *INSTRUMENT APPROACH PROCEDURES*.

Table A1
INSTRUMENT APPROACH PROCEDURES
Corvallis Municipal Airport Master Plan

Type of Approach	Runway Designation	Lowest Ceiling Minimum	Lowest Visibility Minimum
ILS	17	200' (AGL)	½-mile
VOR/DME	17	400' (AGL)	½-mile
VOR/DME	35	400' (AGL)	1-mile
NDB	17	700' (AGL)	¾-mile
GPS	35	400' (AGL)	1-mile
GPS	17	400' (AGL)	½-mile

Source: U.S. Terminal Procedures/Northwest, Volume 1 of 1, 15 June 2000.

In addition, several existing visual navigational aids are located on the airport and available to pilots. These include a rotating beacon located east of the small apron and a lighted wind cone with segmented circle that is located south of runway 9/27, north of Taxiway B. A network of low-altitude published airways (victor airways) in the vicinity of Corvallis Municipal Airport also traverses the area, which span between the regional ground based VOR-DME and VORTAC equipment. Victor airways include the airspace within parallel lines located 4 NM on either side of the airway and extend 1,200 feet above the terrain to, but not including, 18,000 feet AMSL.

Existing Planning Data Inventory

The City of Corvallis has adopted various land use planning and control documents to guide development within the city limits. An inventory of the existing land uses and zoning patterns surrounding the airport is an important element in the airport planning process. Land use compatibility with airport development can be facilitated with a thorough knowledge of what land uses are proposed and what, if any, changes need to be made.

Zoning

As part of Oregon's statewide growth management law, the City of Corvallis has adopted an Urban Growth Boundary (UGB). This boundary limits land development beyond a politically designated area to protect open space, curb sprawl, or encourage redevelopment of land within the city and sets criteria for different types of land uses to be developed within certain zones. In conjunction with the zoning ordinance, the City has also adopted a zoning map that divides the city into different zones consistent with the zoning ordinance. Corvallis Municipal Airport, designated as a Planned Development Overlay, is located outside of city limits, but within the Urban Growth Boundary on the southern and western edge. The predominant zoning within the airport environs is agricultural/open space. Industrial zoning occurs just north of the airport between Airport Ave. and Weltzin Ave. West of US Highway 99W, between Herbert Ave. and Wake Robin Ave., the primary zoning classification is General Industrial. East of US Highway 99W, extending north to the Central Business District, Low to Medium Density Residential zoning, with a pocket of mixed use commercial zoning, dominate. Existing zoning within the vicinity of the airport is shown in the following illustration entitled *GENERALIZED EXISTING ZONING*.

Existing Land Use

The existing land uses in the general vicinity of the airport primarily follow the existing zoning patterns. Because of the location of the airport within the UGB, a majority of the surrounding land is comprised of agricultural uses. Pockets of concentrated industrial development are located just north of the airport within Corvallis Municipal Airport and Industrial Park. Scattered rural residences are located to the northeast of the airport along US Highway 99W.

Figure A5
EXISTING ZONING

Future Land Use

The Corvallis Comprehensive Plan is a long-range plan designed to guide the growth of the Corvallis area through the year 2020. The plan is a cooperative effort serving as the formal statement of policies pertaining to development within the community. The purpose of the plan is to provide a framework for use by Corvallis to promote and direct its growth and development. Generally, the plan reflects existing land use and zoning patterns. Agricultural/open space, again, dominates as the future land use in and around the vicinity of the airport. The airport itself has been designated Public/Institutional. Limited Industrial and General Industrial are the primary future land uses in the northern vicinity of the airport. Adjacent to, and west of, US Highway 99W, Limited Industrial-Office and Mixed Employment prevail as the future land uses. East of US Highway 99W, pockets of Mixed Use Commercial land use are enveloped around areas of Low, Medium, and High density residential use. Proposed Minor Neighborhood Centers are programmed at several intersections along this section of US Highway 99W. The future land uses are illustrated in the figure entitled *GENERALIZED FUTURE LAND USE*.

Figure A6
GENERALIZED FUTURE LAND USE

Forecasts of Aviation Activity

Introduction

Forecasting is a key element in the master planning process. The forecasts are essential for analyzing existing airport facilities and identifying future needs and requirements for these facilities. Forecasting, by its very nature, is not exact, but it does establish some general parameters for development and, when soundly established, provides a defined rationale for various development activities as demands increase. The amount and kind of aviation activities occurring at an airport are dependent upon many factors, but are usually reflective of the services available to aircraft operators, the meteorological conditions under which the airport operates (daily and seasonally), the businesses located on the airport or within the community the airport serves, and the general economic conditions prevalent within the surrounding area.

Forecasting generally commences by obtaining accurate historical and existing data. Utilizing the present time as an initial point, certain quantifiable facts and trends can be identified, along with many intangible factors, which will impact the aviation activity forecasts. This data has evolved from a comprehensive examination of historical airport records and recent planning documents relative to the airport (i.e., the 1998 *FAA Terminal Area Forecasts*, the 1990 *Corvallis Municipal Airport Master Plan*, and the *FAA Aviation Forecasts Fiscal Years 2000-2011*). These documents were assembled in different years, making the data quite variable and emphasizing the need for establishing a well-defined and well documented set of base information from which to develop forecasts of aviation activity.

Prior to an examination of current and future activity levels at the airport, there are several conditions and assumptions that should be noted that form the basis or foundation for the development of the forecasts contained here. These variables represent a variety of physical, operational and socioeconomic considerations, and to varying degrees relate to and affect aviation activity at Corvallis Municipal Airport.

Weather Conditions

The most current and complete set of weather data available for Corvallis Municipal Airport was obtained and analyzed. With the exception of very few days annually, the airport is not adversely affected by poor weather conditions. Visual Flight Rules (VFR) meteorological conditions are experienced, on average, approximately 90 percent of the time annually. Therefore, aircraft can operate at the airport on a regular basis throughout the year, with limited interruption due to weather. The potential negative impact of poor weather conditions on the operational capability of the airport will be analyzed in the following chapter of this document.

Socioeconomic Conditions

Historically, the socioeconomic conditions of a particular region impact aviation activity within that region. The most often analyzed indicators are population, employment, and income.

Population. Corvallis and Benton County have demonstrated continued population growth from 1990 through 1999. According to US Census data compiled by the Center for Population Research and Census (CPCR) at Portland State University, the population of Corvallis was approximately 44,757 in 1990. By 1999, the population had increased to an estimated 50,880 and is estimated to be 61,029 by the year 2020. This equates to an average annual growth rate of .08%. The population of Benton County was 70,811 in 1990 and had grown to approximately 77,100 by 1999. The CPCR projects that the population of Benton County will increase to 85,080 by the year 2010 and 91,345 by the year 2020. This is an increase of approximately nineteen percent (18.5%) from 1999. Similar to that of Corvallis, this reflects an average annual growth rate of .08%. By comparison, the State of Oregon is projected to increase from 3,300,800 (1999 population) to 4,325,995 in 2020. This represents an increase of thirty-one percent (31.1%) and an annual growth rate of 1.6%. The US Census Bureau estimates that the national population will increase from 272,690,813 in 1999 to some 329,441,930 by the year 2020. This is an approximate increase of twenty-one percent (20.8%) and an annual growth rate of 0.99%.

Employment. According to the Oregon Cascades West Council of Governments (OCWCOG), total employment for Benton County was approximately 36,332 in 2000. OCWCOG projects total employment to be 40,759 by the year 2020, which represents an annual growth rate of 0.5%.

Among the top five largest employers within Corvallis, Oregon State University accounted for the highest number of employees with 8,000. Hewlett Packard accounts

for 5,100, Good Samaritan Hospital 920, Corvallis School District 889, and Corvallis Clinic 550.

Income. The 1999 Economic Analysis data indicated the per capita income for Benton County was approximately $27,307. The State of Oregon had a per capita income of $25,912, and the national per capita income was $28,518.

Community Support

Corvallis Municipal Airport benefits from the support of the city government, as well as local industry and the citizens of Corvallis. The airport is recognized as a vital city asset that contributes to the stability and future of the area's economy. The overall position of the community is one of controlled continued growth and development, with special focus on the impetus that the airport can provide to attract additional economic and industrial development to the area.

Additionally, many smaller communities surrounding Corvallis, and all of west central Oregon, benefit from a quality airport facility. These communities provide an economic base that can attract additional aviation activity, as well as industrial/business development to the airport.

Community/Airport Location and Potential

Corvallis and the surrounding area, with its numerous educational and recreational opportunities, tourist activities, and expanding population base, provide a strong and definable market area for commercial passenger service, as well as general aviation.

With the existing instrument approach, overall development potential, and ample undeveloped property, the airport can attract additional aviation and non-aviation development in the future.

Negative or Neutral Factors

As a general comment, the airport has very few negative factors and is in an enviable position due to its many positive features and conditions. However, there are some factors that can and do have a negative impact on the airport and that must be considered in the planning process. The first issue is the overall condition of the general aviation industry in the United States, which, since 1978, has been in a significant recession. The FAA has identified several factors that have contributed to this prolonged downturn. These include three economic recessions, two fuel crises, the enactment of the Airline Deregulation Act of 1978, the repeal of the GI Bill, and the repeal of the investment tax credit.

Other causes of this downturn include the expense of owning and operating an aircraft (i.e., costs of insurance, fuel, and maintenance), competition from commuter airlines in the more open aviation market since airline deregulation, changes in disposable discretionary income, increases in air space restrictions affecting fair-weather flying, reductions in personal leisure time, and shifts in personal preference as to how leisure time is spent. These factors have severely restricted the single-engine light aircraft segment of the industry in particular. In response, the general aviation industry has been focusing more on the business aircraft operator and less on the recreational operator.

However, there are a number of bright spots having a positive impact in certain segments of the general aviation industry. They include the passage of the long-awaited General Aviation Revitalization Act of 1994 that provides an eighteen year limit on product liability lawsuits against general aviation aircraft and component manufacturers. As a result of this legislation, there is renewed interest and optimism among US aircraft manufacturers, who are either reentering the single engine aircraft market after several years' absence, or are increasing future production schedules to meet expected renewed demand. The growth in the amateur-built aircraft market, and the strength of the used aircraft market, indicate that demand for inexpensive personal aircraft is still strong. Increased general aviation instrument operations at FAA towered airports, and general aviation aircraft handled at FAA en route centers point to continued growth of the more sophisticated general aviation users. Additionally, operations at non-towered US airports have increased, supporting the belief held by many that much of general aviation has been forced out of towered airports because of the increased commercial air carrier activity.

The second factor having a negative impact on Corvallis Municipal Airport is the uncertainty of commercial airline service. During the 1990's, commercial passenger service activity at the airport has been spotty. The uncertainty with regard to the availability of passenger service at the airport does not instill confidence in the flying public to book flights out of the airport. Additionally, Portland International Airport can be accessed in about two hours driving time, making this a viable option for people who desire commercial service with a more frequent flight schedule.

Historical and Existing Activity Summary

A tabulation of historical aviation activity since 1989 at Corvallis Municipal Airport is presented in Table B1 entitled *HISTORICAL AVIATION ACTIVITY, 1989-1999*. This table presents the number of enplaned passengers and five categories of aircraft operations (an operation is defined as either a take-off or a landing), including commercial service, itinerant general aviation, itinerant military, local general aviation, and total operations.

Table B1
HISTORICAL AVIATION ACTIVITY, 1989-1999
Corvallis Municipal Airport Master Plan

Year	Passenger Enplanements	Air Taxi / Commuter Operations	Itinerant General Aviation Operations	Itinerant Military Operations	Local General Aviation Operations	Total Aircraft Operations	Percent Change
1989[1]	- - -	3,000	20,000	700	16,000	39,700	
1990[1]	- - -	300	28,000	400	19,000	47,700	20%
1991[1]	- - -	3,000	24,000	900	19,000	46,900	-2%
1992[1]	- - -	3,000	24,000	900	24,100	52,000	11%
1993[1]	- - -	3,000	24,000	900	24,100	52,000	0%
1994[1]	550	3,000	24,000	900	24,100	52,000	0%
1995[1]	2,333	3,000	24,000	900	24,100	52,000	0%
1996[2]	- - -	3,000	33,570	900	41,030	78,500	51%
1997[2]	- - -	3,000	35,000	2,000	40,000	80,000	2%
1998[2]	- - -	3,000	35,753	700	43,697	83,150	4%
1999[3]	1,126	4,161	36,000	900	44,000	85,061	2%

Sources: [1] Federal Aviation Administration Terminal Area Forecasts, 21 July 2000.
[2] FAA Form 5010 Corvallis Municipal Airport Master Record.
[3] Corvallis Municipal Airport Personnel.

Passenger Enplanements

With the exception of a few years - 1994, 1995, and 1999 - there has been no recorded commercial passenger activity at Corvallis Municipal Airport. There were 500 passenger enplanements in 1994, 2,333 in 1995, and 1,126 in 1999. In June 1999, Harbor Airlines began providing the scheduled commercial service in to and out of Corvallis. Harbor Airlines' service ceased in early 2001.

Aircraft Operations

At non-towered airports, the actual number of aircraft operations is very difficult to ascertain with any degree of certainty. Often, the FAA Terminal Area Forecasts, or past FAA Form 5010 *Airport Master Records*, are the only sources of data. It is important to note that this information is estimated. Often times, the historic numbers are suspect as to their accuracy.

Air Taxi/Commuter Operations. Air taxi and commuter operations, which include charter operations, have remained constant since 1989. Generally, a company or

individual performing air passenger and/or cargo transportation service on a non-scheduled basis over unspecified routes is classified as air taxi operations. For purposes of this study, air taxi operations will be included in the general aviation operations category. The approximate number of commercial service operations for 1999 was 1,167, which includes 1,161 scheduled commuter operations and 6 chartered jet operations.

General Aviation Operations. During the historical time frame presented in the previous table, general aviation operations have increased significantly since 1995. General aviation operations are more typically tied to economic conditions than commercial service operations. As economic conditions in the area change in the future, fluctuations in the number of general aviation operations at the airport will likely occur.

Military Operations. The majority of military operations can be attributed to the training flights involving helicopters and a variety of fixed wing aircraft. Historic levels have remained constant since 1991.

Local and Itinerant Operations

Aircraft operations are placed in two categories, local and itinerant. Local operations generally reflect training operations. The *Air Traffic Control Handbook* defines a local operation as any operation performed by an aircraft operating in the local traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from flight in local practice areas, or aircraft executing practice instrument approaches at the airport. For the most part, local operations are touch-and-go operations.

Itinerant operations are all other aircraft operations and are often associated with business aircraft activity. The historic data presented in the table indicate that local operations in 1999 have accounted for approximately 55% of the total operations. This is lower than what is typically true for most general aviation airports, where local operations may account for roughly 60% of all operations.

Existing Operations By Aircraft Type

The current level of aviation activity by aircraft type is summarized in the following table entitled *EXISTING OPERATIONS BY AIRCRAFT TYPE, 1999*. This summary indicates that of, the total 1999 aircraft operations at Corvallis Municipal Airport, approximately 1.3% were attributed to commercial service operations. Harbor Airlines, operating the single engine turboprop Cessna Caravan aircraft, accounted for all of the commercial service operations. Chartered jet aircraft, two B-737's and one B-727, accounted for six

operations (three landings and three take-offs). General aviation aircraft accounted for roughly 95%, and military aircraft performed 1% of all aircraft operations.

As can be seen, Corvallis Municipal Airport currently experiences a large number of single engine general aviation operations when compared with multi-engine operations. Of the general aviation aircraft operations, single engine aircraft performed approximately 87.7%. Approximately 9.6% were attributed to multi-engine piston aircraft, and 1% was credited to both, turboprop aircraft (1.3%) and business jet aircraft (1.4%)

Table B2
EXISTING OPERATIONS BY AIRCRAFT TYPE, 1999
Corvallis Municipal Airport Master Plan

Aircraft Type	**Operations**	
Commercial Service[1]	*1,167*	*(1.4%)*
Turboprop[2]	1,161	(99.5%)
Jet[2]	6	(0.5%)
General Aviation[1]	*82,994*	*(97.6%)*
Single Engine[2]	72,799	(87.7%)
Multi-Engine[2]	7,959	(9.6%)
Turboprop[2]	1,040	(1.3%)
Business Jet[2]	1,196	(1.4%)
Military[1]	*900*	*(1.1%)*
TOTAL	85,061	(100.0%)

Sources: [1] FAA Form 5010 Corvallis Municipal Airport Master Record.
[2] Corvallis Municipal Airport personnel.

Based Aircraft

Currently, there are one hundred thirty-two (132) aircraft based at Corvallis Municipal Airport. Of this total, there are one hundred eleven (111) single engine aircraft, nine (9) multi-engine aircraft, one (1) business jet, three (3) turboprop, and eight (8) helicopters. A historical summary of based aircraft is provided in the following table entitled *SUMMARY OF BASED AIRCRAFT, 1989-1999*. The data were compiled from FAA records and airport tabulations.

Table B3
SUMMARY OF BASED AIRCRAFT, 1989-1999
Corvallis Municipal Airport Master Plan

Year	Single Engine	Multi-Engine	Turboprop	Business Jet	Helicopter	Total
1989[1]	- - -	- - -	- - -	- - -	- - -	86
1990[2]	66	10	- - -	- - -	11	87
1991[2]	77	10	- - -	- - -	11	98
1992[1]	- - -	- - -	- - -	- - -	- - -	92
1993[1]	- - -	- - -	- - -	- - -	- - -	92
1994[1]	- - -	- - -	- - -	- - -	- - -	92
1995[1]	- - -	- - -	- - -	- - -	- - -	92
1996[2]	110	11	- - -	- - -	9	130
1997[2]	110	11	- - -	- - -	9	130
1998[2]	110	11	- - -	- - -	9	130
1999[3]	111	9	3	1	8	132

Sources: [1] Federal Aviation Administration Terminal Area Forecasts, 21 July 2000. Does differentiate based aircraft into categories.
[2] FAA Form 5010 Corvallis Municipal Airport Master Record.
[3] Corvallis Municipal Airport Personnel.

Aviation Activity Forecasts

Using the historical data and incorporating the previously stated assumptions, aviation forecasts can be developed. Several forecasting elements are pertinent to this planning effort: enplaning (boarding) passengers, commercial service operations and aircraft type, general aviation operations, local and itinerant operations, aircraft type, based aircraft, and peak period operations.

Passenger Enplanement Forecasts

Passenger enplanement forecasts are an important part of the forecasting effort as they form the cornerstone for formulating commercial passenger aircraft operations projections. An *Air Service Analysis* (see Executive Summary in Appendix), prepared by Sixel, Boggs and Associates, in September 2000, estimates that the airport catchment area for Corvallis produces an estimated 295,000 one-way passenger trips per year and has a capturable passenger pool of approximately 33,000 for a commercial service operation similar to that which has operated at the airport during the past year. It is

anticipated that the commercial carrier could achieve this capturable passenger pool by the year 2005.

According to the *Air Service Analysis,* Harbor Air needs to capture 12,528 one-way passengers to achieve 10% operating margins. Due to increased marketing efforts and the initiation of a local travel bank agreement (corporate entities pre-purchase a certain number of annual tickets for travel in to and out of Corvallis), enplanements for the years 2002-2005 have been estimated to gradually increase from the 10% operational margin of 12,528 to the 33,000 capturable passenger pool in year 2005. For the remaining forecast period, years 2006-2020, projections are based on an average national annual growth rate of 3.6% for air carrier passenger enplanements currently predicted by the *FAA AEROSPACE FORECASTS, 2000-2011.*

The previous *Corvallis Municipal Airport Master Plan, 1990-2010,* does not forecast passenger enplanements for the planning period. The total number of enplanements for Corvallis is presented in the following table entitled *PASSENGER ENPLANEMENTS FORECASTS, 2000-2020.*

Table B4
PASSENGER ENPLANEMENTS FORECASTS, 2000-2020
Corvallis Municipal Airport Master Plan

Year	Enplanements
2000[1]	2,905
2001	12,528
2002	17,751
2003	22,974
2004	28,197
2005	33,421
2010	39,886
2015	47,601
2020	56,809

Sources: SIXEL BOGGS AND ASSOCIATES
[1] Actual.

The following table, entitled *PASSENGER AIRCRAFT OPERATIONS FORECAST, 2000-2020,* projects the number of available seats, average seats per departure, boarding load factor, and aircraft operations that will be conducted at Corvallis Municipal Airport. It

has been assumed that the previously used nine (9) seat Cessna Caravan would be supplanted with the gradual increased use of nineteen (19) seat aircraft such as the *Fairchild Metroliner or Beech 1900D*.

Table B5
PASSENGER AIRCRAFT OPERATIONS FORECAST, 2000-2020
Corvallis Municipal Airport Master Plan

Year	Enplanements	Total Available Departure Seats	Average Seats Per Departure	BLF	Passenger Aircraft Operations
2000 (1)	2,905	4,212	9.0	68.9%	936
2001	12,528	27,594	9.0	68.9%	6,132
2002	17,751	29,583	9.0	60.0%	6,574
2003	22,974	35,343	9.0	65.0%	7,854
2004	28,197	40,284	9.0	70.0%	8,951
2005	33,421	47,070	10.0	71.0%	9,414
2010	39,886	56,375	11.0	70.7%	10,250
2015	47,601	71,045	13.0	67.0%	10,930
2020	56,809	81,158	14.0	70.0%	11,594

Sources: BARNARD DUNKELBERG & COMPANY.
[1] Actual.
BLF – Boarding Load Factor

General Aviation Activity Forecast

As discussed earlier, recessions and growth periods in the country's economic cycle have historically affected aviation operations overall. However, with more of the general aviation aircraft fleet being utilized for business purposes than it was in the past, the economy should have somewhat less of an effect upon overall general aviation activity. Because of the economic conditions that prevail in Corvallis and the surrounding area, it is anticipated that itinerant traffic and business activity will increase at the airport. These factors, combined with the previously mentioned legislative action limiting general aviation aircraft and parts manufacturers' liability, should have a positive impact on general aviation activity.

In developing the general aviation activity forecasts, as with the enplanements' and commercial service operations' forecasts, several general aviation forecasts and national trends were reviewed. Included in this assessment, and presented in the

following table, entitled *GENERAL AVIATION OPERATIONS FORECAST SCENARIOS, 1999-2020*, are several general aviation operational forecasts, including the 2000 FAA Terminal Area Forecasts, the 1990 *Corvallis Municipal Airport Master Plan* (MP), 2000 *Oregon Department of Aviation – Continuous Aviation System Plan, 1994 Base Year*, a straight line trend projection (TP) based on historical data, and three (3) scenarios developed for this Master Plan Update. As can be noted in the following table, the forecasts contained in the 1990 *Master Plan* projected over two percent (2.8%) growth through 2010 and the trend projection shows increasing growth. According to forecast contained in the *FAA Aviation Forecasts Fiscal Years 2000-2011*, general aviation activity is projected to grow at approximately 1.6% annually.

The operations forecast reflected in Scenario One illustrates an annual growth rate of approximately 1.6%, which corresponds to the FAA nationwide general aviation forecast growth rate. The Scenario Two forecast uses an annual growth rate of .8%, which is the estimated population growth rate for Benton County. The Most Reasonable forecast, the selected projection for this Master Plan Update, postulates a 3.2% growth rate for the first five years of the planning period and a 1.6% growth rate for the remainder of the planning period. This growth rate corresponds to the projected annual growth of turbine activity and general aviation activity respectively and is indicative of the good business aviation climate currently evident at the airport, along with the current strong demand for business aviation aircraft to be based at the airport.

Table B6
GENERAL AVIATION OPERATIONS FORECAST SCENARIOS, 1999-2020
Corvallis Municipal Airport Master Plan

Year	TAF	1990 MP	Oregon Dept. of Aviation	TP	Scenario One	Scenario Two	Most Reasonable
1999	118,048	---	---	83,000[a]	83,000[a]	83,000[a]	83,000[a]
2000	120,911	61,800	---	84,248	84,328	83,664	85,656
2001	123,773	---	---	88,783	85,677	84,333	88,397
2002	126,636	---	---	93,317	87,048	85,008	91,226
2003	129,500	---	---	97,852	88,441	85,688	94,145
2004	132,362	---	84,680	102,386	89,856	86,374	97,158
2005	135,225	---	---	106,921	91,294	87,065	100,255
2010	149,539	81,400	---	129,594	98,835	90,603	108,535
2014	160,891	---	96,130	---	---	---	---
2015	163,855	---	---	152,266	106,998	94,286	117,489
2020	---	---	---	174,939	115,837	98,118	127,182

Source: BARNARD DUNKELBERG & COMPANY.
TAF – FAA Terminal Area Forecast, 21 July 2000.
MP – Corvallis Municipal Airport Master Plan, 1990.
Oregon Department of Aviation – State of Oregon Continuous Aviation System Plan, 2000, Base year 1994.
TP – Trend Projection, based on 1989-1998 data.
[a] Actual

Military Operations Forecast

There are two components in determining military aircraft use at an airport. The first is Department of Defense (DOD) funding, which has been declining in recent years. The second is a fueling contract the airport or FBO may have with the DOD. Since the airport does not have a fueling contract with the DOD, and in lieu of more definitive sources of information, it is expected that the amount of military activity will remain at approximately the existing level for the remainder of the 20-year planning period. This forecast is presented in the following table entitled *MILITARY OPERATIONS FORECAST, 1999-2020.*

Table B7
MILITARY OPERATIONS FORECAST, 1999-2020
Corvallis Municipal Airport Master Plan

Year	Operations
1999[1]	900
2005	900
2010	900
2015	900
2020	900

Sources: BARNARD DUNKELBERG & COMPANY.
[1] Actual.

Operations Forecast By Aircraft Type

A further assessment of the forecasts involves the individual and collective use of the airport by various types of aircraft. The types of aircraft expected to use the airport assist in determining the amount and type of facilities needed to meet the aviation demand.

A 1994-95 aircraft activity report, conducted by the Oregon Department of Aviation, as part of the Oregon Aeronautics Section Aircraft Monitoring Program, showed that business jet activity reached a total of 5,403 operations in 1994-95. Since that time, business jet operations have declined to 1,196. However, business jet activity is once again beginning to show an upward trend in operational usage and is forecasted to reach previous levels by the year 2005.

The following table, entitled *SUMMARY OF OPERATIONS FORECAST BY AIRCRAFT TYPE, 1999-2020*, depicts the approximate level of use by aircraft types that are projected to use Corvallis Municipal Airport. This table reflects the growing percentage of turbine-powered aircraft anticipated to operate at the airport, and the decreasing percentage of piston-powered aircraft. This is indicative of the type of facility the airport is expected to become and the prevailing local economic conditions.

Table B8
SUMMARY OF OPERATIONS FORECAST BY AIRCRAFT TYPE, 1999-2020
Corvallis Municipal Airport Master Plan

Operations By Type	**1999**[1]	**2005**	**2010**	**2015**	**2020**
Commercial Service	*1,167*	*9,432*	*10,274*	*10,966*	*11,644*
Turboprop	1,161	9,414	10,250	10,930	11,594
Jet	6	18	24	36	50
General Aviation	*83,000*	*100,255*	*108,535*	*117,489*	*127,182*
Single Engine	72,799	84,720	90,950	97,750	105,050
Multi-Engine	7,959	8,320	8,680	9,050	9,410
Turboprop	1,040	1,800	2,500	3,290	4,200
Business Jet	1,196	5,400	6,400	7,400	8,520
Military	*900*	*900*	*900*	*900*	*900*
TOTAL	85,061	110,587	119,709	129,355	139,726

Sources: BARNARD DUNKELBERG & COMPANY.
[1] Actual.

Local and Itinerant Operations Forecast

Forecasts of operations have also been categorized accordingly into local and itinerant operations. Because Corvallis Municipal Airport will remain a center for business related general aviation operations, the number of itinerant operations will continue to be a dominant aircraft activity at the airport. The approximate forty-five percent (45%) itinerant operations are expected to increase slightly to forty-eight percent (48%) through the planning period. Based on these considerations, forecasts of local and itinerant operations are shown on the following table entitled *SUMMARY OF LOCAL AND ITINERANT OPERATIONS, 1999-2020*.

Table B9
SUMMARY OF LOCAL AND ITINERANT OPERATIONS, 1999-2020
Corvallis Municipal Airport Master Plan

Year	Local	Itinerant	Total
1999[1]	46,784	38,277	85,061
2005	59,717	50,870	110,587
2010	64,044	55,665	119,709
2015	68,558	60,797	129,355
2020	72,657	67,068	139,726

Source: BARNARD DUNKELBERG & COMPANY.
[1] Actual.

Peak Period Forecast

An additional element in assessing airport use and determining various capacity and demand considerations is to ascertain peak period activities. In lieu of air traffic records or other reliable sources of information, FAA statistics and assumptions from airports with similar activity and operational characteristics have been applied to Corvallis Municipal Airport. These include: 10% of annual operations occur in the peak month, a 31-day peak month is assumed, and the peak hour operations that occur on the average day of the peak month approximately 10% of the time.

Table B10
PEAK PERIOD AIRCRAFT OPERATIONS, 1999-2020
Corvallis Municipal Airport Master Plan

Year	Annual	Peak Month	Average Day of Peak Month	Peak Hour / Average Day Ratio	Peak Hour
1999[1]	85,061	8,506	274	10.0%	27
2005	110,587	11,059	357	10.0%	36
2010	119,709	11,971	386	10.0%	39
2015	129,355	12,936	417	10.0%	42
2020	139,726	13,973	451	10.0%	45

Source: BARNARD DUNKELBERG & COMPANY from methodology contained in FAA AC 150/5070-6A *Airport Master Plans* and FAA AC 150/5060-5 *Airport Capacity and Delay*.
[1] Actual.

Based Aircraft Forecast

Determination of the number and type of aircraft anticipated to be based at an airport is vital component in developing the plan for the airport. Depending on the potential market and forecast, the airport will tailor the plan in response to anticipated demand. Generally, there is a relationship between aviation activity and based aircraft, stated in terms of operations per based aircraft (OPBA). Sometimes, a trend can be established from historical information of operations and based aircraft. The national trend has been changing with more aircraft being used for business purposes and less for pleasure flying. This impacts the OPBA in that business aircraft are usually flown more often than pleasure aircraft. In 1999, the OPBA at Corvallis Municipal Airport was approximately 597, above the average OPBA of 531 for the past ten years. It is expected that the number of operations per based aircraft will increase at the airport as more based aircraft are used for business purposes.

Table B11
BASED AIRCRAFT FORECAST, 1999-2020
Corvallis Municipal Airport Master Plan

Year	Based Aircraft
1999[1]	132
2000	143
2001	147
2002	151
2003	155
2004	159
2005	163
2010	172
2015	182
2020	193

Sources: BARNARD DUNKELBERG & COMPANY.
[1] Actual.

The mix of based aircraft for incremental periods is shown in the following table entitled *BASED AIRCRAFT FORECAST BY TYPE, 1999-2020*. The percentage of turbine-powered aircraft is expected to increase as a part of the total based aircraft population at the airport. This is in line, first of all, with overall national trends in general aviation, but even more importantly, parallels the regional/local expectations and projections characteristic of the general aviation fleet.

Table B12
BASED AIRCRAFT FORECAST BY TYPE, 1999-2020
Corvallis Municipal Airport Master Plan

Aircraft Type	1999[1]		2005		2010		2015		2020	
Single Engine	111	(83.8%)	138	(83.6%)	143	(83.0%)	151	(83.1%)	159	(82.5%)
Multi-Engine	9	(7.5%)	11	(7.0%)	12	(6.6%)	13	(6.5%)	14	(6.5%)
Turboprop	3	(2.5%)	4	(2.7%)	5	(2.9%)	5	(2.7%)	6	(3.2%)
Business Jet	1	(1.0%)	2	(1.5%)	3	(2.0%)	4	(2.4%)	5	(2.9%)
Helicopter	8	(5.2%)	8	(5.2%)	9	(5.5%)	9	(5.2%)	9	(4.9%)
TOTAL	132		163		172		182		193	

Source: BARNARD DUNKELBERG & COMPANY.
[1] Actual.

Summary

A summary of the aviation forecasts prepared for this study is presented in the following table entitled *SUMMARY OF AVIATION ACTIVITY FORECASTS, 1999-2020*. This information will be used in the following chapters to analyze the capacity of the airport, develop facility requirements, and to determine future noise impacts and exposure. In other words, the aviation activity forecasts are the foundation from which future plans will be developed and implementation decisions will be made.

Table B13
SUMMARY OF AVIATION ACTIVITY FORECASTS, 1999-2020
Corvallis Municipal Airport Master Plan

Operations	**1999**[1]	**2005**	**2010**	**2015**	**2020**
Commercial Service	*1,167*	*9,432*	*10,274*	*10,966*	*11,644*
Turboprop	1,161	9,414	10,250	10,930	11,594
Jet	6	18	24	36	50
General Aviation	*83,000*	*100,255*	*108,535*	*117,489*	*127,182*
Single Engine	72,799	84,720	90,950	97,750	105,050
Multi-Engine	7,959	8,320	8,680	9,050	9,410
Turboprop	1,040	1,800	2,500	3,290	4,200
Business Jet	1,196	5,400	6,400	7,400	8,520
Military	*900*	*900*	*900*	*900*	*900*
TOTAL OPERATIONS	85,061	110,587	119,709	129,355	139,726
Local Operations	46,784	59,717	64,044	68,558	72,657
Itinerant Operations	38,277	50,870	55,665	60,797	67,068
Passenger Enplanements	2,905	33,421	39,886	47,601	56,809
Based Aircraft By Type					
Single Engine	111	138	143	151	159
Multi-Engine	9	11	12	13	14
Turboprop	3	4	5	5	6
Business Jet	1	2	3	4	5
Helicopter	8	8	9	9	9
TOTAL	132	163	172	182	193

Source: BARNARD DUNKELBERG & COMPANY.
[1] Actual.

Airport Reference Code (ARC) / Critical Aircraft Analysis

The types of aircraft presently utilizing an airport and those projected to utilize the facility in the future are important considerations for planning airport facilities. An airport should be designed in accordance with the Airport Reference Code (ARC) standards that are described in *AC 150/5300-13 Airport Design.* The ARC is a coding

system used to relate and compare airport design criteria to the operational and physical characteristics of the aircraft intended to operate at the airport. The ARC has two components that relate to the airport's "Design Aircraft". The first component, depicted by a letter (i.e., A, B, C, D, or E), is the aircraft approach category and relates to aircraft approach speed based upon operational characteristics. The second component, depicted by a roman numeral (i.e., I, II, III, IV, or V), is the aircraft design group and relates to aircraft wingspan (physical characteristic). Generally speaking, aircraft approach speed applies to runways and runway-related facilities, while aircraft wingspan is primarily related to separation criteria associated with taxiways and taxilanes.

Runway 17/35. Runway 17/35 accommodates both small aircraft (aircraft weighing less than 12,500 pounds) and large aircraft (aircraft weighing more than 12,500 pounds). All commuter and military aircraft, as well as the majority of general aviation aircraft including single engine and multi-engine piston aircraft, turboprop aircraft, and business jets, use this runway. It has been determined that the "Design Aircraft" chosen for this runway is the Canadair CL-600 (a medium to large cabin business jet). A CL-600 is currently based at the airport and has an approach speed of 125 knots, a wingspan of 61.8 feet, and a range of 5,000 miles. This indicates that for Runway 17/35, ARC C-II criteria will continue to be used to determine appropriate design criteria.

Runway 9/27. Smaller general aviation aircraft (under 12,500 pounds) primarily use this runway. The "Design Aircraft" for this runway is the Beech Super King Air B200, a medium sized twin-engine general aviation aircraft. The Beech Super King Air B200 has an approach speed of 103 knots and a wingspan of 54.5 feet. This indicates that this runway should continue to be designed using ARC B-II dimensional criteria.

Capacity Analysis and Facility Requirements

Introduction

The capacity of an airfield is primarily a function of the major aircraft operating surfaces that compose the facility and the configuration of those surfaces (runways and taxiways). However, it is also related to and considered in conjunction with wind coverage, airspace utilization, and the availability and type of navigational aids. Capacity refers to the number of aircraft operations that a facility can accommodate on either an hourly or yearly basis. It does not refer to the size or weight of aircraft. Facility requirements are used to determine those facilities needed to meet the forecast demand and aircraft fleet. Evaluation procedures will focus on runway length, dimensional criteria, aprons, and hangars.

Knowledge of the types of aircraft currently using, and those aircraft expected to use, Corvallis Municipal Airport provides information concerning the Airport Reference Code (ARC). FAA Advisory Circular 150/5300-13, *Airport Design*, provides guidelines for this determination. The ARC is based on the "Design Aircraft" that is judged the most critical aircraft using, or projected to use, the airport. The ARC relates aircraft operational and physical characteristics to design criteria that are applied to various airport components. Under this methodology, safety margins are provided in the physical design of airport facilities.

There are two components in determining the ARC for an airport. The first component, depicted by a capital letter, is the Aircraft Approach Category and relates to aircraft approach speed. The second component, depicted by a Roman numeral, is the Airplane Design Group and relates to airplane wingspan.

Currently, there are a number of large general aviation turboprop and business jets utilizing the airport on a regular basis, with one business jet being based at the airport (a Canadair Challenger). Charter aircraft, such as the DC-9, B-727, and the B-737, also use the airport at various times during the year.

Runway 17/35. All commuter and charter aircraft, as well as the majority of general aviation aircraft including single engine and multi-engine piston aircraft, turboprop aircraft, and business jets, use this runway. It has been determined that the "Design Aircraft" for this runway is the Canadair Challenger CL-600, an ARC C-II aircraft. According to the existing planning information, Runway 17/35 is currently designed to ARC C-II standards.

Runway 9/27. Smaller general aviation aircraft are the primary users of this runway. The largest aircraft that regularly use this runway are aircraft the size of the Beech Super King Air 200, an ARC B-II aircraft. Past planning documents have also identified Runway 9/27 as an ARC B-II facility.

Additional Consideration. The airport will continue to be utilized by larger jet charter aircraft (including the DC-9, B-727, B-737, etc.). These charter aircraft are operated at Corvallis Municipal Airport primarily in conjunction with the OSU sport teams and sports teams visiting OSU. These aircraft fit into the ARC C-III category. In addition, the airport is expected to continue to receive operations by the new larger business jets, such as the Gulfstream V (currently operated into Corvallis Municipal Airport by Hewlett-Packard Company), the Canadair Global Express, and the Boeing Business Jet. All of these new larger business jets are also classified as ARC C-III aircraft. Collectively, these larger charter and business jet aircraft are not forecast to conduct 500 annual operations at the airport (the FAA's general planning threshold for use as a design standard); however, because their continued use at the airport is anticipated, consideration must be given to potential effects with regard to airfield layout.

Airfield Capacity Methodology

The evaluation method used to determine the capability of the airside facilities to accommodate aviation operational demand is described in the following narrative. Evaluation of this capability is expressed in terms of potential excesses and deficiencies in capacity. The methodology used for the measurement of airfield capacity in this study is described in the Federal Aviation Administration (FAA) Advisory Circular 150/5060-5, *Airport Capacity and Delay.* From this methodology, airfield capacity is defined in the following terms:

- *Hourly Capacity of Runways*: The maximum number of aircraft that can be accommodated under conditions of continuous demand during a one-hour period.

- *Annual Service Volume*: A reasonable estimate of an airport's annual capacity (i.e., level of annual aircraft operations that will result in an average annual aircraft delay of approximately one to four minutes).

The capacity of an airport's airside facilities is a function of several factors. These factors include the layout of the airfield, local environmental conditions, specific characteristics of local aviation demand, and air traffic control requirements. The relationship of these factors and their cumulative impact on airfield capacity are examined in the following paragraphs.

Airfield Layout

The arrangement and interaction of airfield components (runways, taxiways, and ramp entrances) refer to the layout or "design" of the airfield. As previously described, Corvallis Municipal Airport is served by two runways, Runway 17/35 and 9/27, which are both served by full parallel taxiways. There are also several runway exit taxiways and connector taxiways that are designed to minimize aircraft runway occupancy time, thus increasing the capacity of the runway system.

Existing landside facilities, which include terminal facilities, corporate hangars, FBO hangars, aprons, and other various aircraft storage facilities, are located north of Runway 9/27 and east of Runway 17/35. These facilities are well situated to take advantage of the existing taxiway system.

Environmental Conditions

Climatological conditions specific to the location of an airport not only influence the layout of the airfield, but also impact the use of the runway system. Variations in the weather, resulting in limited cloud ceilings and reduced visibility, typically lower airfield capacity, while changes in wind direction and velocity typically dictate runway usage and also influence runway capacity.

Ceiling and Visibility. FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, describes three categories of ceiling and visibility minimums for use in both capacity and delay calculations. Visual Flight Rules (VFR) conditions occur whenever the cloud ceiling is at least 1,000 feet above ground level and the visibility is at least 3 statute miles. Instrument Flight Rules (IFR) conditions occur when the reported cloud ceiling is at least 500 feet, but less than 1,000 feet and/or visibility is at least 1 statute mile, but less than 3 statute miles. Poor Visibility and Ceiling (PVC) conditions exist whenever the cloud ceiling is less than 500 feet and/or the visibility is less than 1 statute mile.

Meteorological data from the National Climatic Data Center, with observations from Corvallis Municipal Airport, has been used to tabulate information in more specific terms:

- VFR conditions - ceiling equal to or greater than 1,000 feet above ground level and visibility is equal to or greater than 3 statute miles. These conditions occur at the airport approximately 90.3% of the time annually.

- VFR minimums to Category I ILS minimums - ceiling less than 1,000 feet and/or visibility less than 3 statute miles, but ceiling equal to or greater than 200 feet and visibility equal to or greater than ½ statute mile. These conditions occur at the airport approximately 5.9% of the time annually.

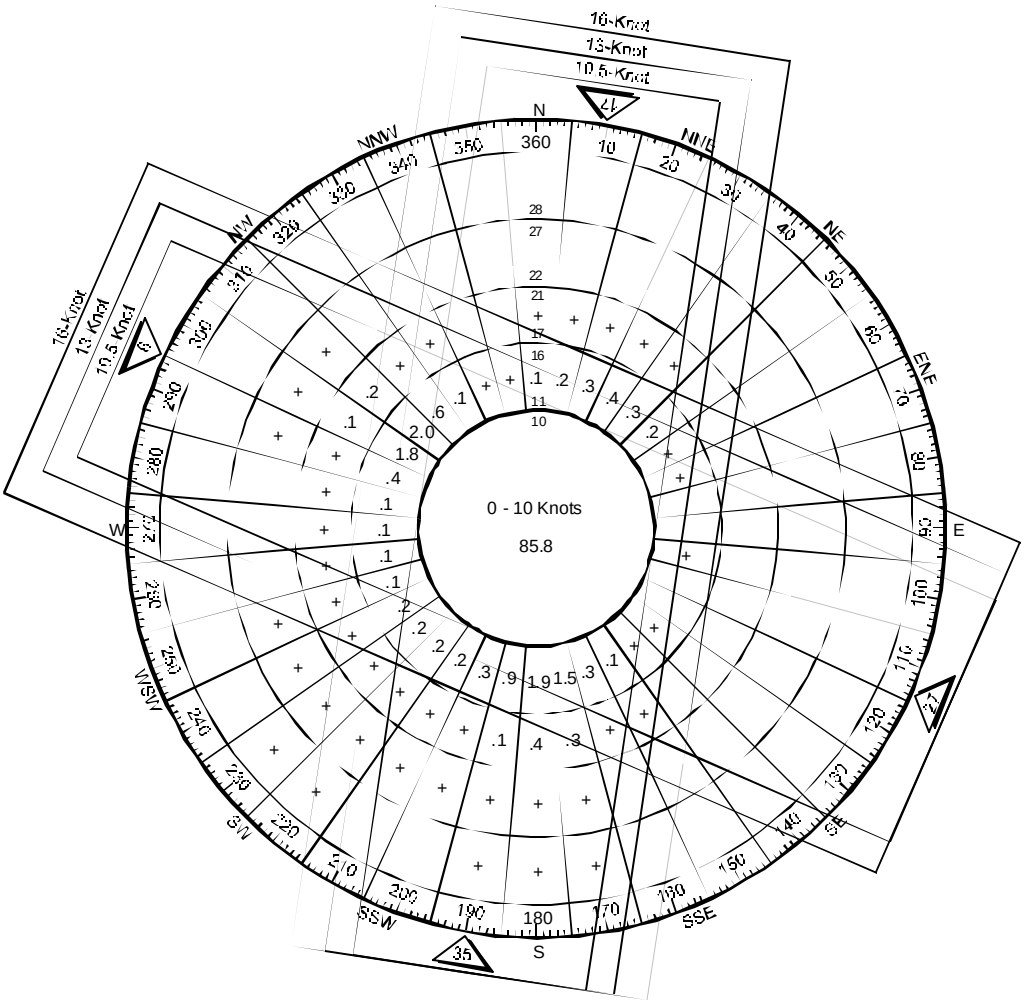
- Below Category I ILS minimums - Ceiling less than 200 feet and/or visibility less than ½ statute mile. These conditions occur at the airport approximately 3.8% of the time annually.

Wind Coverage. Surface wind conditions have a direct effect on the operation of an airport; runways not oriented to take the fullest advantage of prevailing winds will restrict the capacity of the airport to varying degrees. When landing and taking off, aircraft are able to properly operate on a runway as long as the wind component perpendicular to the direction of travel (defined as a crosswind) is not excessive. To determine wind velocity and direction at Corvallis Municipal Airport, wind data were obtained and an all weather wind rose was constructed, which is presented in the following illustration entitled *ALL WEATHER WIND ROSE*.

The appropriate crosswind component is dependent upon the Airport Reference Code (ARC) for the type of aircraft that use the airport on a regular basis. As described earlier in the chapter, ARC C-II is the designated ARC for Runway 17/35, and ARC B-II is the designated ARC for Runway 9/27. Planning standards indicate that the 16-knot crosswind component is considered maximum when analyzing ARC C-II runways, and the 13-knot crosswind component is considered maximum when analyzing ARC B-II runways.

The desirable wind coverage for an airport is ninety-five percent (95%). This means that the runways should be oriented so that the maximum crosswind component is not exceeded more than five percent (5%) of the time. Based on the wind analysis for Corvallis Municipal Airport, Runway 17/35 provides 99.69% wind coverage for the 16-knot crosswind component, 97.70% wind coverage for the 13-knot crosswind component, and 95.07% for the 10.5-knot crosswind component. Runway 9/27 provides 96.07% wind coverage for the 13-knot crosswind component and 92.89% wind coverage for the 10.5-knot crosswind component. Combined, the two (2) runways provide 99.99%, 99.97%, and 99.95% wind coverage for the 16-, 13-, and 10.5-knot crosswind components, respectively. This analysis indicates that the runway system at Corvallis Municipal Airport provides more than adequate wind coverage. No new runways will be recommended to provide additional wind coverage.

Figure C1
ALL WEATHER WIND ROSE
Corvallis Municipal Airport Master Plan



Source: National Oceanic and Atmospheric Administration, National Climatic Data Center. Station 72694, Corvallis, Oregon. Period of Record: 1990-1999.

As stated previously, the airport currently has an ILS instrument approach to Runway 17 (ceiling minimums of 200 feet, visibility minimums of ½ statute mile). In an effort to analyze the effectiveness of this approach, and the need to reduce visibility minimums or provide additional instrument approaches, an Instrument Flight Rules (IFR) wind rose has been constructed and is presented in the following figure entitled

IFR WIND ROSE. Again, wind data from Corvallis, Oregon has been used in the construction of the IFR wind rose. The following table, entitled *IFR WIND COVERAGE SUMMARY,* quantifies the wind coverage offered by the runways during IFR meteorological conditions.

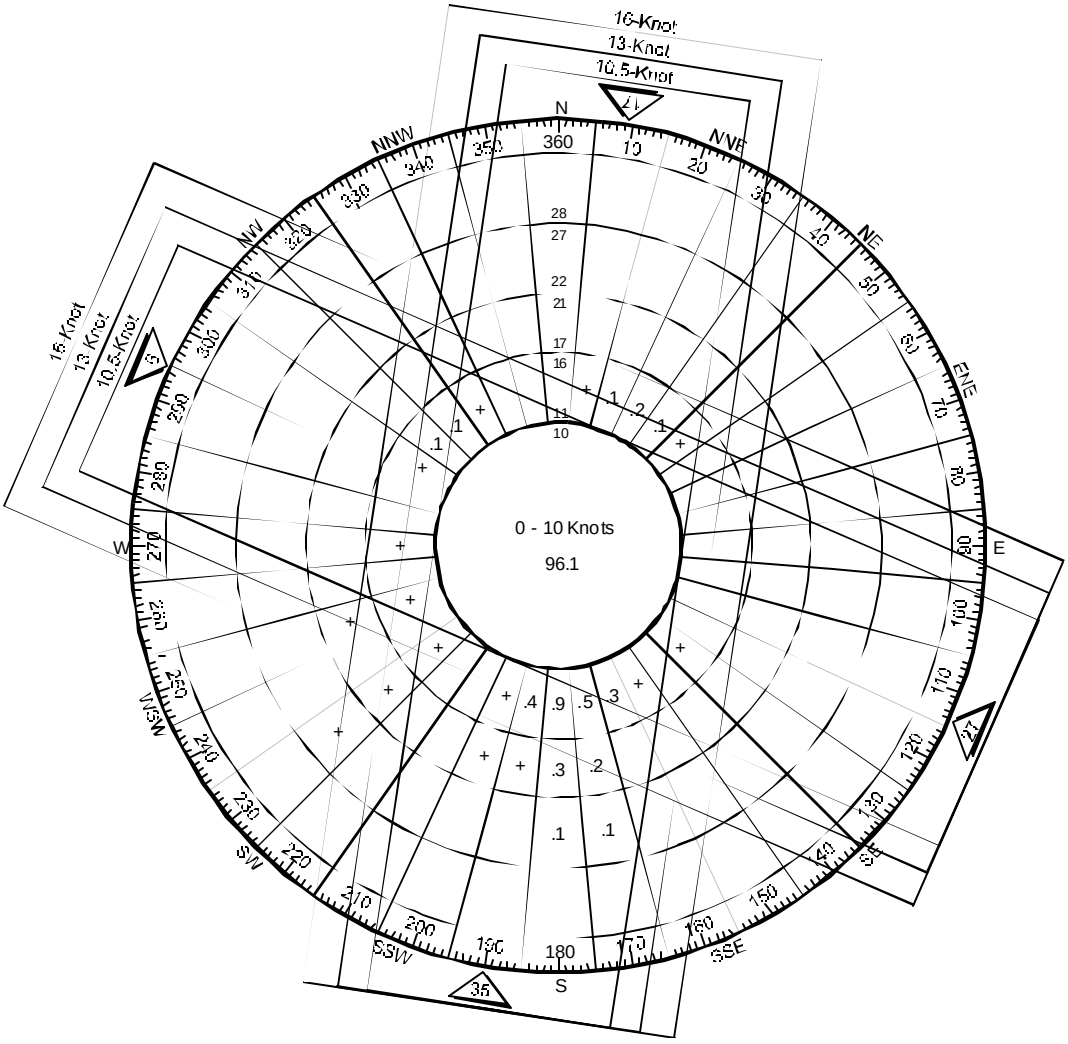
Table C1
IFR WIND COVERAGE SUMMARY
Corvallis Municipal Airport Master Plan

Runway	Wind Coverage Provided Under IFR Conditions[1] 5-Knot Tailwind to Maximum Headwind 10.5-Knot	13-Knot	16-Knot
Runway 17[2]	95.04%	95.12%	95.19%
Runway 35	90.83%	90.99%	91.07%
Runway 9	93.70%	94.82%	---
Runway 27	93.66%	94.18%	---

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center. Station 72694, Corvallis, Oregon. Period of Record: 1990-1999.
[1] Ceiling of less than 1,000 feet, but equal to or greater than 200 feet and/or visibility less than three statute miles, but equal to or greater than one-half statute mile.
[2] Equipped with the existing ILS instrument approach.

From this IFR wind coverage summary, it can be determined that if a single runway is considered, Runway 17 provides the best wind coverage, which is where the existing ILS instrument approach is located. Examination will be given to the possibility of improving the instrument approaches in the next chapter.

Figure C2
IFR[1] WIND ROSE
Corvallis Municipal Airport Master Plan



Source: National Oceanic and Atmospheric Administration, National Climatic Data Center.
Station 72694, Corvallis, Oregon. Period of Record: 1990-1999.
[1] Ceiling of less than 1,000 feet, but equal to or greater than 200 feet and/or visibility less than three statute miles, but equal to or greater than one-half statute mile.

Characteristics of Demand

Certain site-specific characteristics related to aviation use and aircraft fleet makeup impact the capacity of the airfield. These characteristics include aircraft mix, runway use, percent arrivals, touch-and-go operations, exit taxiways, and air traffic control rules.

Aircraft Mix. The capacity of a runway is dependent upon the type and size of the aircraft that use the facility. Aircraft are categorized into four classes. Classes A and B consist of small single engine and twin-engine aircraft (both prop and jet), weighing 12,500 pounds or less, which are representative of the general aviation fleet. Class C and D aircraft are large jet and propeller aircraft typical of those utilized by the airline industry and the military, along with the majority of the business jet fleet. Aircraft Mix is defined as the relative percentage of operations conducted by each of these four classes of aircraft. The existing percentage of aircraft weighing less than 12,500 pounds (i.e., Class A and B) is estimated to be more than 90% of total aircraft operations. This percentage is expected to decrease somewhat in the future, but not fall below 90%.

Runway Use. Runway use is defined by the number, location, and orientation of the active runway(s) and relates to the distribution and frequency of aircraft operations to those facilities. According to local observations, operations occur to the south (Runway 17) approximately 38% of the time (used more in summer than winter), to the north (Runway 35) about 38% of the time (used more in winter than summer), to the east (Runway 9) approximately 6% of the time, and to the west (Runway 27) roughly 18% of the time.

Percent Arrivals. Runway capacity is also significantly influenced by the percentage of all operations that are arrivals. Because aircraft on final approach are typically given absolute priority over departures, higher percentages of arrivals during peak periods of operations reduce the Annual Service Volume. The operations mix occurring on the runway system at Corvallis Municipal Airport reflects a general balance of arrivals to departures. Therefore, it was assumed in the capacity calculations that arrivals equal departures during the peak period.

Touch-And-Go Operations. A touch-and-go operation refers to an aircraft maneuver in which the aircraft performs a normal landing touchdown followed by an immediate takeoff without stopping or taxiing clear of the runway. These operations are normally associated with training and are included in local operations figures. Touch-and-go operations presently comprise approximately 55% of all operations at the airport, and are expected to remain at this percentage during the planning period.

Exit Taxiways. The capacity of a runway is greatly influenced by the ability of an aircraft to exit the runway as quickly and safely as possible. Therefore, the quantity and design of the exit taxiways can directly influence aircraft runway occupancy time and the capacity of the runway system. The number of exit taxiways at Corvallis Municipal Airport is adequate for existing and future operations.

Air Traffic Control Rules. The FAA specifies separation criteria and operational procedures for aircraft in the vicinity of an airport contingent upon aircraft size, availability of radar, sequencing of operations and noise abatement procedures, both advisory and/or regulatory, which may be in effect at the airport. The impact of air traffic control on runway capacity is most influenced by aircraft separation requirements dictated by the mix of aircraft utilizing the airport. Presently, there are no special air traffic control rules in effect at Corvallis Municipal Airport that significantly impact operational capacity.

Airfield Capacity Analysis

As previously described, the determination of capacity for Corvallis Municipal Airport uses the methodology described in the FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, along with the Airport Design Computer Program that accompanies AC 150/5300-13. Several assumptions are incorporated in these capacity calculations: arrivals equal departures, the percent of touch-and-go operations is between zero and fifty percent (0-50%) of total operations, there is a full-length parallel taxiway with ample exits and no taxiway crossing problems, there are no airspace limitations, the airport has at least one (1) runway equipped with an ILS and the necessary air traffic control facilities to carry out operations in a radar environment, IFR weather conditions occur roughly ten percent (10%) of the time, and approximately eighty percent (80%) of the time the airport is operated with the runway use configuration that produces the greatest hourly capacity.

Applying information generated from the preceding analyses, capacity and demand are formulated in terms of the following results:

- Annual Service Volume (ASV)
- Hourly Capacity of Runways (VFR and IFR)

Based on the methodology to determine the capacity at Corvallis Municipal Airport for long-range planning purposes, the ASV has been determined to be approximately 230,000 operations, with a VFR capacity of roughly 98 operations per hour and an IFR capacity of approximately 59 operations per hour. It is recognized that Corvallis Municipal Airport does not conform to all of the assumptions listed above (i.e., the

airport does not have an ATCT facility), and Runway 17/35 does not have a full parallel taxiway, which results in a loss of capacity from the figures presented. However, if there was sufficient demand and ATCT facilities were operated in the future, the actual capacity would be similar to the projection for long-range planning purposes.

As can be seen, the airport's Annual Service Volume is significantly greater than the number of annual operations forecast for the end of the planning period, which is 128,122. These capacity computations provide assistance in evaluating the ability of airport facilities to accommodate forecast demand.

Facility Requirements

This section presents the analysis of requirements for airside and landside facilities necessary to meet aviation demand at Corvallis Municipal Airport. For those components determined to be deficient, the type and size of the facilities required to meet future demand are identified. Airside facilities examined include the runways, taxiways, runway protection zones, thresholds, and navigational aids. Landside facilities include such facilities as terminal buildings, hangars, aircraft apron areas, and airport support facilities.

This analysis uses the forecasts set forth in the preceding chapter for establishing future development of the airport. This is not intended to dismiss the possibility that, due to the unique circumstances in Corvallis and the region, either accelerated growth or consistently higher or lower levels of activity may occur. Aviation activity levels should be monitored for consistency with the forecasts. In the event of changes, the schedule of development should be adjusted to correspond to the demand for facilities rather than be set to predetermined dates of development. By doing this, over-building or under-building can be avoided.

Airside Facilities

Dimensional Criteria. The FAA Advisory Circular 150/5300-13, *Airport Design*, recommends standard widths, minimum clearances, and other dimensional criteria for runways, taxiways, safety areas, aprons, and other physical airport facilities. Dimensions are recommended with respect to the Aircraft Approach Category and Airplane Design Group designations (the Airport Reference Code), and availability and type of approach instrumentation.

Dimensional criteria applicable to the runway system at Corvallis Municipal Airport are contained in the following tables. As identified in Table C2, *ARC C-II DIMENSIONAL STANDARDS - RUNWAY 17/35,* Runway 17/35 meets or exceeds most dimensional standards associated with ARC C-II.

Table C2
ARC C-II DIMENSIONAL STANDARDS - RUNWAY 17/35 (in feet)
Corvallis Municipal Airport Master Plan

Item	Existing Dimension	ARC C-II with > ¾ Mile Visibility Minimums
Runway:		
Width	150	100
Safety Area Width	500	500
Safety Area Length (beyond runway end)	1,000	1,000
Object Free Area Width	800	800
Object Free Area Length (beyond runway end)	1,000	1,000
Obstacle Free Zone Width	N.D.	400
Taxiway:		
Width	50	35
Safety Area Width	N.D.	79
Object Free Area Width	131	131
Runway Centerline to:		
Holdline	N.D.	250
Parallel Taxiway Centerline	400	400
Aircraft Parking Area	500+	500

Source: FAA Advisory Circular 150/5300-13, *Airport Design.*
N.D. Not Designated in current planning information; however, planning standard appears to be met.

As presented in Table C3, *ARC B-II DIMENSIONAL STANDARD - RUNWAY 9/27*, Runway 9/27 also meets or exceeds most dimensional standards associated with ARC B-II.

Table C3
ARC B-II DIMENSIONAL STANDARDS - RUNWAY 9/27 (in feet)
Corvallis Municipal Airport Master Plan

Item	Existing Dimension	ARC B-II w/vis. min. not-lower-than ¾ mi.
Runway:		
Width	75	75[1]
Safety Area Width	150	150[2]
Safety Area Length (beyond runway end)	300	300[3]
Object Free Area Width	500	500[4]
Object Free Area Length (beyond runway end)	300	300[3]
Obstacle Free Zone Width	N.D.	400
Taxiway:		
Width	50	35
Safety Area Width	N.D.	79
Object Free Area Width	131	131
Runway Centerline to:		
Holdline	N.D.	200[5]
Parallel Taxiway Centerline	550	240[2]
Aircraft Parking Area	500+	250[6]

Source: FAA Advisory Circular 150/5300-13, *Airport Design*.
N.D. Not Designated in current planning information; however, the standard appears to be met.
[1] Standard increases to 100 feet if an instrument approach with visibility minimums below 3/4-mile is implemented.
[2] Standard increases to 300 feet if an instrument approach with visibility minimums below 3/4-mile is implemented.
[3] Standard increases to 600 feet if an instrument approach with visibility minimums below 3/4-mile is implemented.
[4] Standard increases to 800 feet if an instrument approach with visibility minimums below 3/4-mile is implemented.
[5] Standard increases to 250 feet if an instrument approach with visibility minimums below 3/4-mile is implemented.
[6] Standard increases to 400 feet if an instrument approach with visibility minimums below 3/4-mile is implemented.

Runway Pavement Strength. Runway 17/35 can currently support aircraft with a gross weight of 51,000 pounds single wheel, 65,000 pounds dual wheel, and 100,000 pounds tandem-wheel main landing gear configuration. Runway 9/27 can support aircraft with gross weights of 60,000 pounds single wheel, 100,000 pounds dual wheel, and 150,000 pounds tandem-wheel main landing gear configuration. These runway strengths are sufficient for the duration of the planning period, assuming routine maintenance is performed at regular intervals.

Airfield Capacity. The evaluation of airfield capacity presented earlier indicates that the airport will not exceed the capacity of the existing runway/taxiway system before the end of the planning period. The Airport's Annual Service Volume (ASV) was determined to be approximately 230,000 operations. FAA planning standards indicate that when sixty percent (60%) of the ASV is reached (in this case some 138,000 operations), the airport should start planning ways to increase capacity. Accordingly, when eighty percent (80%) of the ASV is reached (representing about 184,000 operations), construction of facilities to increase capacity should be initiated.

During 1999, aircraft operations at Corvallis Municipal Airport totaled approximately 85,061, which is substantially short of the sixty percent (60%) ASV level. Forecasts of aircraft operations indicate that approximately 128,122 aircraft operations will occur at the airport by the year 2020.

Even before an airfield reaches capacity, it begins to experience certain amounts of delay in aircraft operations. As an airport's operations increase toward capacity, delay increases exponentially. Therefore, it is important to monitor the number of aircraft operations regularly and identify factors that may be acting as capacity constraints. This will enable airport management to react to unexpected trends before the lack of operational capacity might become a critical issue.

Runway Length. Generally, runway length requirements for design purposes at an airport like Corvallis Municipal Airport are premised upon the category of aircraft using the airport. The categories are small aircraft under 12,500 pounds maximum takeoff weight and large aircraft under 60,000 pounds maximum takeoff weight.

Runway length requirements are derived from the computer based FAA Airport Design Software supplied in conjunction with Advisory Circular 150/5300-13, *Airport Design*. Using this software, three values are entered into the computer, including the airport elevation of 246 feet Above Mean Sea Level (AMSL), the Mean Normal Maximum Temperature (NMT) of 81.8 degrees Fahrenheit, and the maximum difference in runway elevation at the centerline of 4.2 feet. This data generates the general recommendations for runway length requirements at Corvallis Municipal Airport, which are provided in the following table entitled *RUNWAY LENGTH REQUIREMENTS.*

Table C4
RUNWAY LENGTH REQUIREMENTS
Corvallis Municipal Airport Master Plan

Aircraft Category	**Length (Feet)**
Airplanes less than 12,500 lbs. with less than 10 seats	
75% of Small Aircraft Fleet	2,500
95% of Small Aircraft Fleet	3,040
100% of Small Aircraft Fleet	3,620
Airplanes less than 12,500 lbs. with 10 or more seats	4,170
Airplanes greater than 12,500 lbs. and less than 60,000 pounds	
75% of fleet at 60% useful load	4,670
75% of fleet at 90% useful load	6,200
100% of fleet at 60% useful load	5,200
100% of fleet at 90% useful load	7,730
Charter Aircraft (B-727, B-737, MD-80, etc.)	6,500 to 7,000[1]

Source: FAA Advisory Circular 150/5300-13, *Airport Design*.
Lengths based on 246' AMSL, 81.8° F NMT and a maximum difference in runway centerline elevation of 4.2'.
[1] Runway length requirement provided by Charter Operator (6,500 feet minimum, 7,000 feet preferred for regular use).

As shown in the preceding table, the small aircraft fleet (under 12,500 pounds) requires a runway length between 2,500 and 4,170 feet, while the aircraft over 12,500 pounds, but less than 60,000 pounds, requires between 4,670 and 7,730 feet. Each of the runway lengths given for large aircraft under 60,000 pounds maximum certificated takeoff weight provides a runway sufficient to satisfy the operational requirements of a certain percentage of the aircraft fleet at a certain percentage of the useful load. Useful load is defined as the difference between the maximum gross takeoff weight and the empty weight of the airplane, exclusive of fuel. The following aircraft are examples of those that comprise 75% of the general aviation aircraft fleet between 12,500 and 60,000 pounds: Learjets, Challengers, Citations, Falcons, Hawkers, and the Westwind.

A significant factor to consider when analyzing the generalized runway length requirements given in the above table is that the actual length necessary for a runway is a function of elevation, temperature, and aircraft stage length. As temperatures change on a daily basis, the runway length requirements change accordingly (i.e., the cooler the temperature, the shorter the runway necessary). Therefore, if a runway is designed to accommodate 75% of the fleet at 60% useful load, this does not mean that at certain

times a larger or more heavily loaded aircraft cannot use the runway. However, the amount of time such operations can safely occur is restricted.

The last row in the table refers to the runway length requirements for regular use of the airport by charter carriers utilizing aircraft such as the B-727, B-737, MD-80, etc. A charter carrier (Miami Air Dispatch) provided this range of requirements for runway lengths.

Runway 17/35. The data presented in the table above indicates that Runway 17/35, with an existing length of 5,900 feet, can accommodate 100% of the general aviation aircraft fleet weighing between 12,500 pounds and 60,000 pounds and operating at 60% of useful load. Information from charter air carrier operators indicates that a runway length of 6,500 feet is required to accommodate regular operations by aircraft such as the B-737, with a length of 7,000 feet being preferred.

Runway 9/27. With an existing length of 3,345 feet, this runway can accommodate 95% of the aircraft fleet weighing less than 12,500 and having less than 10 seats, and is lacking 835 feet in providing adequate length to accommodate small aircraft with more than 10 seats. It is expected that no runway extension related to Runway 9/27 will be programmed.

Taxiways. Taxiways are constructed primarily to enable the movement of aircraft between the various functional areas on the airport and the runway system. Some taxiways are necessary simply to provide access between aircraft parking aprons and runways, whereas other taxiways become necessary to provide more efficient and safer use of the airfield. All taxiways meet or exceed the required width according to the appropriate ARC criteria. The provision of a full parallel taxiway serving Runway 17/35 would improve efficient access between the north/south runway and the terminal area. In addition, new taxiways are likely to be required to provide access to new aviation use development areas.

Runway Protection Zones (RPZs). The function of the RPZ is to enhance the protection of people and property on the ground beyond the end of runways. This is achieved through airport control of the RPZ areas. The RPZ is trapezoidal in shape and centered about the extended runway centerline. It begins 200 feet beyond the end of the area usable for takeoff or landing. The RPZ dimensions are functions of the type of aircraft and approach visibility minimums associated with each runway end.

As noted in the *Inventory* chapter, Runway 17 is currently served with an ILS instrument approach with visibility minimums of ½ statute mile and Runway 35 has a GPS instrument approach with a 1 statute mile visibility minimum. Runways 9 and 27 are not provided with straight-in instrument approaches. Runway 17/35 serves large

aircraft (over 12,500 pounds), including business jets with approach speeds in Categories C and D. Runway 9/27 serves large aircraft, but is designed for aircraft with approach speeds in Category A or B. The following table, entitled *RUNWAY PROTECTION ZONE DIMENSIONS*, lists existing RPZ dimensions, along with the requirements for improved approach capabilities.

Table C5
RUNWAY PROTECTION ZONE DIMENSIONS
Corvallis Municipal Airport Master Plan

Item	Width at Runway End (feet)	Length (feet)	Width at Outer End (feet)
Existing RPZ Dimensions:			
Runway 17	1,000	2,500	1,750
Runway 35	1,000	1,700	1,425
Runway 9	500	1,000	700
Runway 27	500	1,000	700
Required RPZ Dimensions for Various Visibility Minimums:			
Visual and not lower than 1 mile, Small Aircraft Exclusively	250	1,000	450
Visual and not lower than 1 mile, Approach Categories A & B	500	1,000	700
Visual and not lower than 1 mile, Approach Categories C & D	500	1,700	1,010
Not lower than ¾ mile, all aircraft	1,000	1,700	1,510
Lower than ¾ mile, all aircraft	1,000	2,500	1,750

Source: FAA Advisory Circular 150/5300-13, *Airport Design*.

The potential for providing improved instrument approaches at airports throughout the country at a reduced cost is increased with the continued development of Global Positioning System (GPS) technology. This indicates that planning for enhanced approach capabilities, and the impact of the required Runway Protection Zones, should be incorporated in this study.

Threshold Siting. Each runway threshold needs to be evaluated for deficiencies regarding approach obstacle clearance requirements, according to guidelines contained in FAA Advisory Circular 150/5300-13. Like the RPZ criteria, the threshold siting criteria is a function of the type of aircraft and approach visibility minimums associated with each runway end. The following table lists the existing threshold siting criteria applicable to each runway threshold, as well as the requirements for improved approach capabilities.

Table C6
THRESHOLD SITING CRITERIA, IN FEET
Corvallis Municipal Airport Master Plan

Item	Distance from Threshold	Width at Threshold	Width at Outer End	Length of First Segment	Length of Second Segment	Slope
Existing Threshold Siting Criteria:						
Runway 17	200	1,000	4,000	10,000	0	34:1
Runway 35	0	400	1,000	1,500	8,500	20:1
Runway 9	0	400	1,000	1,500	8,500	20:1
Runway 27	0	400	1,000	1,500	8,500	20:1
Required Threshold Siting Criteria for Various Aircraft Types and Visibility Minimums:						
Small aircraft with approach speeds less than 50-knots	0	120	250	500	2,500	15:1
Small aircraft with approach speeds greater than 50-knots	0	250	700	2,250	2,750	20:1
Visual and not lower than 1-mile, Large Aircraft	0	400	1,000	1,500	8,500	20:1
Not lower than 3/4-mile, all aircraft	200	1,000	4,000	10,000	0	20:1
Lower than 3/4-mile, all aircraft	200	1,000	4,000	10,000	0	34:1

Source: FAA Advisory Circular 150/5300-13, *Airport Design*.

With the exception of Runway 27, based on the criteria contained in this table, the approach surface to each runway threshold has adequate clearances over adjacent roadways, railroads, and other objects. The threshold of Runway 27 is displaced to achieve adequate clearance over the railroad that is adjacent to the eastern boundary of airport property. However, these threshold siting requirements must be reexamined in conjunction with any future improvements or changes to the airport's approach visibility minimums.

Objects Affecting Navigable Airspace. The criteria contained in Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*, apply to existing and proposed manmade objects and/or objects of natural growth and terrain (i.e., obstructions). These guidelines define the *critical* areas in the vicinity of airports that should be kept free of obstructions. *Secondary* areas may contain obstructions if they are determined to be non-hazardous by an aeronautical study and/or if they are marked and lighted as specified in the aeronautical study determination. Airfield navigational aids, as well as lighting and visual aids, by nature of their location, may constitute obstructions. However, these objects do not violate FAR Part 77 requirements, as they are essential to the operation of the airport.

According to the information provided on the most recent Airport Master Record, FAA Form 5010, the only object currently identified as potentially being a hazard to navigation is a tree located 850 feet east of the Runway 27 threshold. Further analysis of the effect of potential obstructions and necessary corrective actions is identified in later chapters of this Master Plan Update.

Navigational and Landing Aids. Airport navigational aids, including instrument approaches and associated equipment, airport lighting, and weather/airspace services, were detailed in the *Inventory* chapter of this document. The airport is currently equipped with an ILS instrument approach to Runway 17, VOR or GPS instrument approaches to Runway 17 and 35, and circle-to-land procedures to all runways using any of the aforementioned navigational instruments.

Within the near future, Global Positioning System (GPS) approaches are expected to be the FAA's standard approach technology. As noted previously, with GPS, the cost of establishing improved instrument approaches should be significantly reduced. Because of the expected increased use of sophisticated business and corporate aircraft at Corvallis Municipal Airport, and to increase safety and operational use of the airport during adverse weather conditions, the ability to implement improved instrument approaches will be analyzed in the next chapter.

Airport Lighting. Presently, all Runways are equipped with Medium Intensity Runway Lights (MIRL). A Precision Approach Path Indicator (PAPI) is located at Runway 27 and a Visual Approach Slope Indicator (VASI) is located at Runways 17 and 35. Runway 17/35 is equipped with Runway End Identifier Lights (REILS). All runways are equipped with threshold lights. Additionally, Runway 17 is equipped with a Medium Intensity Approach Light System with Runway Alignment Indicator Lights (MALSR). In conjunction with the examination of improved instrument approaches described above, improved airport lighting will also need to be evaluated. The type of airport lighting will be dependent on the type of instrument approach capabilities and will be examined in the next chapter. For increased safety purposes, PAPI should be

programmed for all runways, and REILS should be planned for all runways not equipped with approach lights.

Landside Facilities

Landside facilities are those facilities that support the airside facilities, but are not actually part of the aircraft operating surfaces. These consist of such facilities as passenger terminal buildings, aprons, access roads, hangars, and support facilities. Following an analysis of these existing facilities, current deficiencies can be noted in terms of accommodating both existing and future needs.

Terminal Area Requirements. Components of a terminal area complex include the passenger terminal building, apron areas, and automobile parking/ground access. The following paragraphs identify the facilities required to meet the airport's needs through the planning period. The analysis of the requirements for the various terminal complex functional areas is performed using guidance from FAA Advisory Circular 150/5360-13, *Planning and Design Guidelines for Airport Terminal Facilities*, January 1994, and FAA Advisory Circular 150/5360-9, *Planning and Design of Terminal Facility at Non-Hub Locations*, April 1980.

Passenger Terminal Building. Based on the previously presented forecast number of passenger enplanements, and using estimates of peak hour demand derived from those passenger enplanement forecasts, planning rules-of-thumb can be used to establish an ultimate square footage estimate for a passenger terminal building in consideration of predicted demand. It is estimated that peak hour passenger demand could result in the need for a passenger terminal building of approximately 8,500 square feet by the end of the planning period.

Passenger Terminal Aircraft Parking Apron. For long-range sizing requirements, the projections related to passenger aircraft activity and daily operational demand indicate that there will likely be no more than four commuter aircraft parked on the apron during the peak hour. In addition, it is feasible the passenger terminal apron would simultaneously need to accommodate a sports team charter aircraft.

Passenger Terminal Parking Requirements and Access. There are three types of automobile parking typically located in the terminal area of the airport. These include public (passenger), rental car, and employee parking. Because of limited passenger activity at the airport in the past, the demand for terminal parking facilities has been minimal. For long-range panning purposes, the provision of an appropriate area for passenger terminal parking is an important consideration.

FAA planning guidelines indicate that, at non-hub airports, one parking space should be provided for each 500 to 700 annual enplaned passengers. This guideline would indicate that parking for as many as 120 vehicles could be required by year 2020.

Automobile access to the passenger terminal facilities is also an important consideration. The airport is the front door to the community for air travelers. Because peak hour passenger demand is forecast to remain relatively small (56 peak hour passengers at the end of the twinty-year planning period), it is not expected that there will be a significant impact related to the need to increase the capacity of the existing roadway system serving the terminal area. It will be important to configure the passenger terminal area and access roadway to present an aesthetically pleasing sense of arrival, along with efficient/non-confusing egress/ingress routing.

Aircraft Storage. Aircraft based at Corvallis Municipal Airport are stored in one of four areas: private hangars, large storage hangars, T-hangars, or apron tiedowns. Currently, 132 aircraft are based at the airport. Over the course of the twenty-year planning period the number of based aircraft is forecast to increase to 193, indicating that an increase in storage facilities to accommodate approximately sixty-one (61) new aircraft will be required. It is assumed that future storage spaces will reflect some of the characteristics of current storage patterns, with the majority of the based aircraft fleet being stored in hangars.

Tiedown Storage Requirements/Based Aircraft. Aircraft tiedowns are provided for those aircraft that do not require, or do not desire, to pay the cost for hangar storage. Space calculations for these areas are based on 360 square yards of apron for each aircraft to be tied down. This amount of space allows for aircraft parking and circulation between the rows of parked aircraft. Past trends indicate that as more aircraft are based at the airport, hangar storage capacity is surpassed before additional hangars are supplied. This indicates that increased tiedown space for based aircraft should be included in the development plan.

Tiedown Storage Requirements/Itinerant Aircraft. In addition to the needs of the based aircraft tiedown areas addressed in the preceding section, transient aircraft also require apron parking areas at Corvallis Municipal Airport. This storage is provided in the form of transient aircraft tiedown space. In calculating the area requirements for these tiedowns, an area of 400 square yards per aircraft is used. The development plan for the airport will designate adequate areas for apron development to satisfy this demand.

Summary. The accompanying table shows the type of facilities and the number of units or acres needed for that facility in order to meet the forecast demand for each development phase. It is expected that most of the owners of aircraft that will be newly based at the airport will desire some type of indoor storage facility. The actual

type of hangar storage facility to accommodate based aircraft has been identified as T-hangars and executive hangars. It is also recognized that larger corporate and/or FBO type hangars will accommodate some of the aircraft storage demand, although the actual number, size, and location of these large hangars will depend on user needs and financial feasibility. Therefore, the quantity of future large FBO hangars has not been projected; however, potential development sites will be identified in the development plan for the airport.

Access and perimeter roadway locations, auto parking requirements, and land requirements, are not included in this tabulation because the amount of land necessary for these facilities will be a function of the location of other facilities, as well as the most effective routing of roadways. The following table, entitled *GENERAL AVIATION FACILITY REQUIREMENTS, 1999-2020,* depicts the area required for general aviation landside facilities during all stages of development. This will assist in the development of detailed facility staging discussed later.

Table C7
GENERAL AVIATION FACILITY REQUIREMENTS, 1999-2020
Corvallis Municipal Airport Master Plan

Facility	1999	2005	2010	2015	2020
Itinerant Apron	28,071 yd^2	33,395 yd^2	35,331 yd^2	37,751 yd^2	40,171 yd^2
Based Aircraft Apron	6,291 yd^2	7,259 yd^2	7,259 yd^2	7,259 yd^2	7,259 yd^2
Hangars					
T-hangars (no.)	116	126	136	146	156
Executive (no.)	1	5	10	15	20

Source: Existing building survey and BD&C projections based on FAA AC 150/5300-4B.

Support Facilities Requirements

In addition to the aircraft storage facilities described above, there are several airport support facilities that have quantifiable requirements and that are vital to the efficient and safe operation of the airport.

Aircraft Rescue and Fire Fighting (ARFF) Facility. The requirements for ARFF equipment and staff are based upon the length of the largest air carrier aircraft that serves the airport with an average of five (5) or more daily departures. Corvallis

Municipal Airport, previously served with scheduled air service consisting of nine (9) daily departures of the Cessna Caravan aircraft, currently maintains a "Limited" FAR Part 139 ARFF index classification. Although no ARFF facility is located on airport property, the location of an on-airport ARFF facility will be identified as part of this master plan update effort.

Air Traffic Control Tower (ATCT). There is currently no Air Traffic Control Tower facility on the premises of Corvallis Municipal Airport. Aviation activity projections for the airport do not appear to justify the programming of future ATCT facilities.

Fuel Storage Facility. Aviation fuel is currently stored in four (4) aboveground storage tanks located west of the main apron. The tanks consist of two (2) 12,000 gallon Jet-A and two (2) 12,000 gallon 100LL AVGAS. This facility, which can easily be expanded, is expected to meet the aviation demands placed upon it during the planning period.

Summary

Although many of the existing airport facilities are adequate to serve through the end of the twenty-year planning period, others will need improvement to accommodate the existing and future aviation demand, and to provide a safe and efficient aircraft operating environment. The facility requirements detailed in this chapter will be used to evaluate the proposed airport site and provide the basis for the development plan recommendations. Following is a summary of the important development issues facing the airport:

- Provision of adequate runway length on main runway to accommodate business jet and air carrier charter activity.
- Provision of adequate passenger terminal facilities to accommodate forecast demand.
- Provision of general aviation hangar development areas.
- Taxiway system improvements.
- Programming of air cargo use areas.
- Layout of non-taxiway access areas for airport compatible uses. (e.g., potential Oregon State Police training facility).

Concepts, Alternatives, and Development Plan

Introduction

The purpose of this chapter is to present the Development Plan for Corvallis Municipal Airport, in terms of both its concept and reasoning. This chapter provides a description of the various factors and influences, which will form the basis for the ultimate plan and program.

In concert with the status of the airport, some basic assumptions have been established, which are intended to direct the development of the airport in the future. The aviation activity forecasts and the various considerations on which the forecasts have been based support these assumptions. The assumptions also focus on continued airport development, in response to community needs and economic growth stimulation.

Assumption One. The first assumption states that the airport facility will be developed to accommodate the full range of general aviation aircraft, including corporate business jets, under almost all weather conditions. In addition, there will continue to be demand for the airport to accommodate commercial service passenger aircraft operations by airlines using 9 to 30 passenger turbo-prop aircraft and charter air carrier aircraft (B-737, B-727, MD-80, etc.) a few times a year (primarily for college sports teams). Thus, the airport should be designed to precision approach standards, with proper clearances appropriate to that designation. The two runways at the airport are designed to accommodate different aircraft types, along with differing approach minimums. Specifically, the assumptions are:

Runway 17/35. This runway's existing and future Airport Reference Code for this runway is C-II (the majority of the business jet fleet is included in this designation). The design aircraft is the Canadair CL-600 (a medium to large cabin business jet). The precision instrument approach to Runway 17 will be maintained and instrument approach capabilities (as low as ¾ mile visibility

minimums) to Runway 35 are programmed (Runway 35 currently has non-precision approach capabilities with 1-mile visibility minimums).

Runway 9/27. The existing and future Airport Reference Code for this runway is B-II (the majority of the general aviation propeller aircraft, along with some of the business jets). The design aircraft is the Beech Super King Air B200. Runway 9/27 will be maintained as a visual approach facility.

Assumption Two. The second assumption focuses on the need to accommodate the forecast operations of all aviation types, as expressed by the Annual Service Volume capabilities. It should be noted that the forecasts of activity for the airport are based on anticipated population and economic growth in Corvallis and the region. Forecasts of operational activity and the analysis of the capacity of the airport's runway layout indicate that the airport's existing runway configuration can efficiently accommodate aircraft landings and takeoffs forecast until the end of the twenty-year planning period and beyond. This analysis indicates that, although the existing two-runway layout can accommodate forecast demand, the airport's system of runways, taxiways, and approaches should be programmed for improvements that will maximize the ability to efficiently use the airport (taxiway improvements and runway extensions are likely to be justified in the future).

Assumption Three. The third assumption relates to the requirement that the airport is to be developed to complement and enhance on-airport and off-airport regional economic development activities.

Assumption Four. The fourth assumption focuses on the relationship of the airport to off-airport land uses and the compatible and complementary development of each. This is inherent in the design considerations and placement of facilities so as to complement, to the maximum extent possible, off-airport development, and to ensure the continued compatibility of the airport environs with the operation of the airport.

Goals for Development

Accompanying these assumptions are several goals that have been established for purposes of directing the plan and establishing continuity in the future for airport development. These goals take into account several categorical considerations relating to the needs of the airport, both in the short-term and the long-term, including safety, capital improvements, on-airport land use, land acquisition, land use compatibility, financial and economic conditions, and public interest/investment.

As reflected in the following goals, the airport is recognized for the vital role it plays, both as a transportation facility and an industrial/commercial economic center:

- Accommodate forecast aircraft operations in a safe and efficient manner by the provision of proper facilities and services. Plan and develop the airport to be capable of accommodating the future needs and requirements of Corvallis and the surrounding communities, thus, the airport will continue to serve as a regional general aviation/commuter passenger facility.

- Identify the best uses for the landside development areas at Corvallis Municipal Airport.

- Develop land acquisition priorities related to airport safety, future airport development, and land use compatibility.

- Plan and develop the airport to be environmentally compatible with the community and minimize environmental impacts on both airport property and property adjacent to the airport.

- Enhance the self-sustaining capability of the airport and ensure the financial feasibility of airport development.

- Encourage the protection of existing public and private investment in land and facilities, and advocate the resolution of existing and potential land use conflicts, both on and off airport property.

Airfield Development Considerations and Alternatives

Introduction

The forecast operations and previously stated goals relative to aviation development and economic enhancement were considered. These generalized alternatives are outlined and discussed in the following narrative. Following a review of these airside development alternatives, the purpose of which is to fulfill *major* facility requirements (basic runway and taxiway configuration), recommendations for landside development are presented. The conclusion of this chapter is the presentation of a generalized conceptual airport development plan, which will include recommendations for major runway and taxiway improvements, along with an airport land use plan. Details related to the conceptual alignment and configuration of the runway/taxiway system will be presented in a following chapter entitled

Airport Plans. The layout of landside development areas and the processes for approval of associated development proposals are presented in the section of this chapter entitled *Airport Land Use Plan and Conceptual Airport Development Plan.*

To best accommodate the projected operational demand at Corvallis Municipal Airport through the year 2020, several fundamental development considerations have been identified. These fundamental development considerations are identified below, along with an analysis of potential alternative options associated with each consideration.

Because all airport functions relate to and revolve around the basic runway layout, runway development alternatives must first be carefully examined and evaluated. Specific considerations include runway length, as well as runway orientation and approach protection criteria needed to support forecast use through the planning period.

Runway, Taxiway, and Instrument Approach Considerations

Runway Capacity and Orientation

- The airport's runway system, consisting of the primary runway (Runway 17/35) and the crosswind runway (Runway 9/27), provides adequate capacity to accommodate the forecast number of aircraft operations without excessive delay.

- The orientation of the airport's runways provides adequate crosswind coverage for the entire fleet of aircraft forecast to use the airport.

  Recommendation: **The existing runway configuration provides adequate operational capacity and wind coverage; therefore, no new runways are proposed for development.**

Dimensional Criteria

The primary concerns with regard to the runway system's dimensional criteria relate to FAA specified safety area, object free area, and taxiway setbacks. Each runway has its own set of circumstances as related to these criteria.

> ***Recommendation:*** **No significant deficiencies related to Dimensional Criteria have been identified at Corvallis Municipal Airport. These requirements are described in detail in the preceding *Facility Requirements* chapter.**

Instrument Approach Capabilities

Existing instrument approach capabilities at the airport include precision ILS, along with non-precision VOR/DME, NDB, and GPS to Runway 17 and non-precision VOR/DME and GPS approach capabilities to Runway 35.

The purpose of providing improved instrument approach capabilities at the airport is to improve the airport's ability to safely accommodate aircraft operations during periods of inclement (low visibility) weather conditions. As the number of aircraft operations increase at the airport, the cost of having periods of time when the airport is closed due to low visibility increases. In addition, having good instrument approach capabilities to more runway ends provides flexibility to accommodate operations when certain portions of the runway system are closed for an emergency or for repair/construction/maintenance.

Another consideration is the fact that Global Positioning System (GPS) approaches are programmed by the FAA to become its standard. GPS technology will provide the opportunity for enhanced instrument approaches with minimal investments for on-airport equipment.

With these concepts as a basis, for long-range planning purposes, the best instrument approaches that can be physically accommodated without significant negative impacts should be reflected on airport plans. This will protect the ability to implement improved instrument approach procedures, as demand requires.

- Runway 17 is currently equipped to accommodate CAT I precision ILS approaches, along with a variety of non-precision approach capabilities. CAT I precision approach capabilities should be maintained in the future.

  Runway 35 currently has non-precision approach capabilities with a visibility minimum of 1 mile. The runway is programmed for instrument approach capability improvements to allow visibility minimums not-lower-than ¾ of a mile.

  Runway 9/27 is currently a visual approach runway. No instrument approach improvements are proposed for the crosswind runway.

  Recommendation: **The airport currently controls (in fee or easement) all of the property within the Runway Protection Zones (RPZs) required for the existing and future instrument approaches. This control should be maintained in the future.**

Taxiway System

The existing taxiway system at the airport provides efficient routing for taxiing aircraft between the runway system and various landside use areas on the airport, in consideration of present activity levels. The airport currently has a full parallel taxiway system serving the north side of Runway 9/27 (Taxiway A), and a partial parallel taxiway system located on the east side of Runway 17/35 (Taxiway B). Because Runway 17/35 is the airport's primary runway, serving it with a full parallel taxiway is particularly important.

> ***Recommendation:*** **Extend Taxiway B to the north to provide a full parallel taxiway system on the east side of Runway 17/35.**

Runway Length

The existing runway lengths provided at Corvallis Municipal Airport (5,900 feet for Runway 17/35 and 3,345 for Runway 9/27) are adequate to accommodate the majority of the existing demand. However, in order to regularly accommodate operations by air carrier charter aircraft, a runway extension for the main runway is required (a length of 6,500 feet is minimum and 7,000 feet would be preferred).

Two alternatives have been illustrated with regard to the extension of Runway 17/35. These alternatives are presented in the following figures, D1 and D2, entitled *AIRSIDE DEVELOPMENT PLAN ALTERNATIVE ONE* and *AIRSIDE DEVELOPMENT PLAN ALTERNATIVE TWO*.

Alternative One indicates an extension of 600 feet to the north. This extension would initially be constructed as overrun, with a second phase being the conversion of this overrun into full use runway pavement. In addition to this northerly extension, Alternative Two indicates that the runway will also be extended 500 feet to the south, bringing the ultimate proposed runway length to 7,000 feet.

> ***Recommendation:*** **After discussion with City of Corvallis staff, the Master Plan Update's study group, and the Federal Aviation Administration, it is recommended that the ultimate runway configuration for the airport should be as illustrated in Alternative Two (programming to protect for an extension of the main runway to the north and an extension on the south). Therefore, Alternative Two represents the Conceptual Airside Development Plan for the airport. Please refer to Figure D7 at the end of this chapter for a comprehensive illustration of the airport's long-term development concept.**

Figure D1
AIRSIDE DEVELOPMENT PLAN ALTERNATIVE ONE

Figure D2
AIRSIDE DEVELOPMENT PLAN ALTERNATIVE TWO

Landside Development Considerations, Alternatives, and Recommendations

Introduction

With the framework of the airport's ultimate airside development identified, concepts involving the placement of landside facilities can now be analyzed. The overall objective of the landside development at the airport is the provision of facilities, which are conveniently located and accessible to the community and which accommodate the specific requirements of airport users. The concepts for landside development at the airport are presented below.

New Air Traffic Control Tower

An additional task identified during the alternative discussion for this master planning effort was the need to spot potential sites for a new air traffic control tower (ATCT). It should be noted that the number of aircraft operations and passenger enplanements at the airport would need to increase extraordinarily to justify the construction of an ATCT. The siting requirements for an ATCT facility are stringent with regard to sight lines to the aircraft operating surfaces, height of structure, and direction of view. Because of this, there are very few appropriate sites available. It is preferable to minimize the need for ATCT personnel to look into the sun; therefore, a site on the south side of airport property would be best.

Because of the undeveloped nature of the south side of the airport, and its topographic flatness, it appears that an ATCT facility could be programmed in the area south of Runway 9/27 and east of Runway 17/35.

Aviation Use Facility Development Areas

Concepts for the development of other aviation use areas at the airport include considerations for passenger terminal facilities, various types of general aviation aircraft storage facilities (i.e., t-hangars, executive hangars, corporate hangars, FBO hangars, etc.), and aircraft maintenance facilities. The following paragraphs provide an explanation of the development needs considerations for each of these functions.

Aviation Use Facility Development Area (east of Runway 17/35 and north of Runway 9/27). The facility requirements documentation presented in the previous chapter indicates that the aviation use facilities which are likely to be needed during the twenty-year planning period covered in this Master Plan, can be contained in the vicinity of the existing terminal area (east of Runway 17/35 and north of Runway 9/27).

This area is currently developed with a variety of hangar types (FBO, aircraft maintenance, corporate, executive, and T-hangars), along with passenger terminal facilities, and airport support facilities (fuel storage, maintenance, etc.). Because of the existing infrastructure (roadways, taxiways, utilities, etc.) serving this area, from an economic/cost of development standpoint, it will be critical to make efficient use of the existing terminal area for future aviation facilities.

Forecast demand for additional aircraft storage hangars, corporate hangars, FBO facilities, and passenger terminal facilities indicates that there are some significant considerations about how future landside facilities should be arranged within this area. To begin the process to layout future facilities in this area, several alternatives were conceived. These alternatives are graphically presented in the following illustrations (Figures D3, D4, and D5) entitled *TERMINAL AREA PLAN – ALTERNATIVE ONE, ALTERNATIVE TWO, AND ALTERNATIVE THREE*.

The issues that will drive the aviation-use landside development plan are complex and include:

- Adequate taxiway access to hangar development areas (the provision of two taxiway routes to each hangar is recommended).
- The provision of adequate roadway access and parking - this is especially important with regard to passenger terminal facilities.
- The provision of adequate aircraft parking adjacent to the various development areas.
- Securing the aircraft operating surfaces by excluding accidental incursions by automobiles.
- Minimizing the distance aircraft must taxi between landside use areas and various points on the runway system.

Figure D3
TERMINAL AREA PLAN – ALTERNATIVE ONE

Figure D4
TERMINAL AREA PLAN – ALTERNATIVE TWO

Figure D5
TERMINAL AREA PLAN – ALTERNATIVE THREE

Recommendation: **Following a lengthy discussion with Master Plan Update Study Committee participants, along with additional input from the City of Corvallis staff and the Federal Aviation Administration, Terminal Area Alternative Three was chosen as the preferred layout. The discussion indicated that the big hangar would eventually reach its useful life and could not be maintained in a cost effective manner. Because of the strategic location of the big hangar, it would be best to plan for its removal. Eventually the big hangar's site should be used for improved terminal facilities and improved taxiway access serving the hangar development area.**

The basic concept is that all areas that can easily be provided with taxiway access should be reserved for aviation-use facilities. Although the forecast of aviation demand does not indicate a need, the area south of Runway 9/27 and east of Runway 17/35 could easily be provided with taxiway access and will be identified as potentially developable for aviation-use faculties.

Aviation Accessible Development Areas

There are several areas on the airport that have good taxiway access and are likely to be used by aircraft on an infrequent basis. Those areas are suitable for businesses that may need to occasionally test or repair aircraft and aircraft equipment.

The area west and southwest of the Runway 17/35 is identified as Aviation Accessible Development (AAD). The area east of the runway has well developed taxiways and will eventually have access to Highway 99W. The area west of the runway also has well developed taxiways and will eventually have access to Airport Avenue. Development in this area should remain aviation related because of its proximity to the runway and taxiway access.

Non-Aviation Use Facility Development Areas

There are several areas on the airport that are not required for runway, taxiway, or approach protection considerations, and are unlikely to be provided with taxiway access in the future. Those areas that cannot be feasibly provided with taxiway access are likely to be used for non-aviation facilities.

The southeast corner of airport property is identified as Airport Development. This area has been identified in the past as having the potential to accommodate a non-aviation use (an Oregon State Patrol training facility). In addition, some of the area on the west side of Runway 17/35 is best used for non-aviation facilities, although some of the area may contain wetlands and is likely to remain undeveloped. It should be noted that the majority of airport property that is west and south of the runway/taxiway object free areas is currently leased for agriculture. Agriculture is an

appropriate non-aviation use for airport property. It brings income to the airport and is compatible with the operation of the airport; therefore, the agricultural activity should continue until a "higher and better" use is obtained.

In addition, the industrial/commercial uses north of Airport Road, along with those east of the railroad tracks as discussed in the Airport Industrial Park Master Plan, are appropriate. The land east of Plumley Street has also been identified for non-aviation use, along with the land south of Airport Road, which is directly adjacent to Airport Place.

Airport Land Use Plan and Conceptual Airport Development Plan

Figure D6 AIRPORT LAND USE PLAN represents a compilation of the recommendations presented above. The plan identifies the appropriate land use designations for the areas governed by the Corvallis Municipal Airport Master Plan. The land uses identified here that are permitted outright or as conditional uses are sub-sets of the uses allowed under the Benton County Development Code and include those uses the City of Corvallis wishes to see developed in this area. Additionally, some uses are identified ("Additional Uses that are Ultimately Desired") that the City would like to have Benton County consider for inclusion in this area when it next updates its Development Code.

The Airport Development (AD) and the Airport Compatible Development (ACD) designations have the same purpose; however the permitted and conditional uses differ. Airport Development falls under the County's Industrial zone, and Airport Compatible Development falls under the County's Public zone. Each is therefore subject to its respective zone's regulations. Each of the airport land use designations is identified below and includes the purpose of the zone, the uses permitted outright, conditional uses, and the additional uses desired. The specific uses identified in *italics* are provided as examples only, and do not represent all of the uses that may be allowed.

The following uses are permitted outright within all of the land use designations noted below. The location of these uses within the airport property shall be based upon FAA approvals for such facilities.

Uses Permitted Outright

1. Air Traffic Control Towers
2. Airport Navigational Equipment, such as beacons, towers, antennae, lights, or other FAA designated or directed facilities, structures, or infrastructure.

Commercial Aviation Facilities (CAF)

Purpose

To provide facilities which are conveniently located and accessible to the public and which accommodate the specific requirements of airport users.

Uses Permitted Outright

1. Transportation Terminals

Commuter Airlines
Fixed Base Operators (FBO)
Freight Terminals
Specialized Aviation Service Operations (SASO)

Accessory Uses

Aircraft Maintenance
Equipment Sales/Rentals
Food and Beverage Retail Sales
Retail Fueling Services

2. Warehouses
   Aircraft Hangars
3. Vocational School
   Flight Training

Additional Uses That Are Ultimately Desired

1. Eating and Drinking Establishments – Sit Down
2. Fast Order Food Establishments
3. Automotive Equipment – Parking (i.e., car rentals)

Limited Aviation Facilities (LAF)

Purpose

To provide safe and secure storage areas for aircraft that are secure, with limited public access, but accessible to airport facilities and services.

Uses Permitted Outright

1. Warehouses
   Aircraft hangars

Aviation Accessible Development (AAD)

Purpose

To provide facilities which are compatible with airport activities, and are likely to require limited access to the taxiways.

Uses Permitted Outright

1. Airport and related facilities

Aircraft Hangars
Aircraft Maintenance
Flight Training
Freight Terminals
Manufacturing
Warehouses

2. Accessory Use or structure
3. Farm Use

Conditional Uses

1. Any airport compatible use which is not permitted within this zone may be allowed by a conditional use permit approved in accordance with the Benton County Development Code, provided it can be found to meet the criteria contained in Section "3.c.3" below.

Airport Compatible Development (ACD)

Purpose

To provide facilities which are compatible with airport activities, and are unlikely to require taxiway access.

Uses Permitted Outright

1. Research facility, testing laboratory and facility for the manufacturing, processing and/or assembling of products, provided a permit is not required from the Oregon Department of Environment Quality.
2. Warehouses
3. Vocational Schools

Conditional Uses

1. A research facility, correctional and law enforcement facilities, or testing laboratory or facility for the manufacturing, fabrication, processing or assembly of products which requires a permit from the Oregon Department of Environmental Quality.

Additional Uses That Are Ultimately Desired

1. Eating and Drinking Establishments – Sit Down

2. Fast Order Food Establishments
3. Automotive Equipment – Parking (i.e., car rentals)

Airport Development (AD)

Purpose

To provide facilities which are compatible with airport activities, and are unlikely to require taxiway access.

Uses Permitted Outright

1. Airport and related facilities
   Manufacturing
2. Accessory use or structure
3. Farm Use

Conditional Uses

2. Any airport compatible use which is not permitted within this zone may be allowed by a conditional use permit approved in accordance with the Benton County Development Code, provided it can be found to meet the criteria contained in Section "3.c.3" below.

Runways & Taxiways (RT)

Purpose

To provide for secure, safe and efficient routing, taxiing, aviation, take-off, and landing facilities for aircraft.

Uses Permitted Outright

1. Airport and Related Facilities
   Runways
   Taxiways

The recommendations for future airside, landside and terminal facilities have been combined and are graphically presented in Figure D7, entitled CONCEPTUAL DEVELOPMENT PLAN. This plan shall be used by the Airport Design Review Committee (described in the City Council-adopted *Corvallis Airport Handbook)* as a

guide for locating future facilities within the airport. Criteria for determining consistency with Figure D7 are contained below in section 2, entitled Consistency with the Airport Master Plan. Where a proposed improvement within the Limited Aviation Facilities (LAF) and Commercial Aviation Facilities (CAF) areas is determined not to be consistent with Figure D7, the Airport Design Review Committee shall consider the proposal based on the procedures and criteria regarding plan variations described below.

1. Site Location

a. Available building sites will be determined by the Airport Design Review Committee (ADRC), consistent with Figure D7 – Conceptual Development Plan of the *Corvallis Municipal Airport Master Plan.* Consistency with Figure D7 shall be determined based upon criteria listed below in section "2."

b. Development proposals found to be consistent with Figure D7, may be approved by the ADRC in a single meeting.

c. Development proposed that is not consistent with Figure D7 (variations) shall be considered by the Committee using the procedures and criteria described below in section "3."

d. All buildings must conform to the established setbacks and height restrictions of the City Building Code and to the FAA FAR Part 77.

2. Consistency with the Airport Master Plan

a. Figure *D7 – Conceptual Development Plan* identifies specific building envelopes and building locations for areas designated as Limited Aviation Facilities (LAF) and Commercial Aviation Facilities (CAF) on Figure D6. Proposals for construction of buildings that fall within these envelopes may be found consistent with the Airport Master Plan, provided they meet the additional criteria found in sections "A," "B.1.b," and "B.2" of Chapter XIV of the Airport Handbook. For the purpose of determining consistency, the building envelopes shall include the total area enclosed by each row of proposed buildings, with individual subdivisions shown only to indicate the likelihood of multiple users.

b. For areas designated on Figure D6 as Airport Compatible Development (ACD), Aviation Accessible Development (AAD), and

Airport Development (AD), no specific building envelopes have been identified on Figure D7. Proposals for construction of buildings in these zones may be found consistent with the Airport Master Plan, provided they do not unduly interfere with identified development in the LAF and CAF zones, and they meet the additional criteria found in sections "A," "B.1.b," and "B.2" of Chapter XIV of the Airport Handbook.

c. Improvements within the areas designated on Figure D6 as Runway/Taxiway (RT) may be found consistent with the Airport Master Plan provided they are to be constructed consistent with FAA approvals.

d. In all cases, uses identified as Conditional Uses in the Airport Master Plan shall be processed consistent with the requirements of the Benton County Development Code, and prior to approval, shall be found consistent with section "3.c.3," below.

3. Consideration of Variations from the Airport Master Plan (Figure D7 - Conceptual Development Plan)

a. Variations from the Airport Conceptual Development Plan may be considered minor provided they meet the following criteria:

1) The land use is consistent in location and type with the land uses allowed in Figure D6 – Airport Land Use Plan (and associated text) of the Airport Master Plan; and

2) The proposed structure is less than 5,000 square feet in size, is located within the LAF or CAF areas identified on Figure D6, and does not extend beyond a building envelope shown on Figure D7 by more than 20 percent of the area of the proposed structure; or

3) The proposed structure is more than 5,000 square feet in size, is located within the LAF and CAF areas identified on Figure D6, and does not extend beyond a building envelope shown on Figure D7 by more than 10 percent of the area of the proposed structure.

b. Minor variations, as determined above in section "3.a," may be approved by the ADRC in a single meeting, following posting of the

development site at least seven days in advance of the meeting, provided they meet the following criteria:

1) Further development of facilities consistent with Figure D7 is not unduly interfered with by the proposed structure.

2) The development is proposed to be constructed consistent with the additional criteria found in sections "A," "B.1.b," and "B.2" of Chapter XIV of the Airport Handbook; and

3) The development is consistent with the criteria contained in Section "3.c.3."

c. Variations from the Airport Conceptual Development Plan that are greater than those identified above in "3.a" shall be considered major variations and may be approved using the process and criteria described below.

1) Following a determination by staff or the ADRC that the proposal fails to meet the criteria identified above in "3.a," the development site shall be posted, and notice of the intent to consider the variation shall be sent to all lease holders and businesses licensed to operate in the area regulated by the Corvallis Municipal Airport Master Plan at least 20 days in advance of the subject ADRC meeting.

2) Prior to making a decision regarding approval or denial of the subject proposal, the ADRC shall accept written or verbal public comment.

3) To approve a minor or major variation under this process, the ADRC must determine that the following criteria are met:

a) The land use is consistent in location and type with the land uses allowed in Figure D6 – Airport Land Use Plan (and its associated text) of the Corvallis Municipal Airport Master Plan;

b) Further development of facilities consistent with Figure D7 – Conceptual Development Plan is not unduly interfered with by the proposed structure;

c) Adequate taxiway access to all hangar development areas is maintained (the provision of two taxiway routes to each hangar is recommended);

d) Adequate roadway access and parking for existing leaseholders and future uses are maintained:

e) Adequate aircraft parking adjacent to various development areas can be provided;

f) The distance that aircraft must taxi between landside use areas and necessary access points on the runway is not unduly increased;

g) The proposal does not unduly interfere with existing or future utilities;

h) Airport operating surfaces are secured from accidental incursions by automobiles;

i) The proposal does not unduly interfere with aircraft circulation or airport safety; and

j) The proposal does not unduly interfere with vehicle circulation or airport functions.

4) Where a major variation does not meet the criteria contained in section "3.c.3." above, approval will require an amendment to the Airport Master Plan through the City's Comprehensive Plan Amendment process.

4. Appeals

Appeals of decisions of the ADRC and the Airport Commission shall be heard by the City Council as a de novo hearing. Such appeals shall follow the procedure described below:

a. Appeals shall be made in writing to the City Recorder within 12 days of the date the decision is signed. Should the twelfth day fall on a weekend or holiday, appeals shall be due the following work day;

b. At least 20 days in advance of the City Council appeal hearing, the development site shall be posted, and notice of the intent to consider the appeal shall be sent to all lease holders and businesses licensed to operate in the area regulated by the Corvallis Municipal Airport Master Plan.

Figure D6
ON-AIRPORT LAND USE PLAN

Figure D7
CONCEPTUAL DEVELOPMENT PLAN

Also, please note that the recommendation for the extension of Runway 17/35 has been refined from the information provided in the previous alternative illustrations. Additional input from City Staff and Study Committee Members identified that the most cost effective way to achieve an ultimate length near 7,000 feet would be to extend the runway as far as possible to the north without the runway safety area or object free area crossing Airport Road (an extension of approximately 750 feet), along with an extension to the south that would keep the runway safety area and object free area on existing airport property (an extension of approximately 300 feet). With the proposed extension to the south and the proposed extension to the north, the ultimate runway length identified for Runway 17/35 is 6,950 feet.

Environmental Review

Introduction

This chapter presents an inventory and analysis of the potentially significant environmental issues that may be of concern with the proposed development contained in this Airport Master Plan Update. The impacts will be generalized in a non-quantified fashion and the likely environmental processing will be identified.

Alternatives involving the future configuration of the airport have been reviewed in previous chapters. The major improvements to the airport are runway/taxiway extensions of 500 feet to the south and 600 feet to the north on Runway 17/35, the completion of the parallel taxiway east of Runway 17/35, and new hangar/apron/terminal development in the northeast area of the airport.

Existing Conditions

Corvallis Municipal Airport is located in eastern Benton County, which is situated in west-central Oregon, on relatively flat terrain in the Willamette Valley, between the Coast Range and the Cascades. Several tributaries of the Willamette River surround the airport, including the Mary's River, Muddy Creek, and various forks of Booneville Channel. Drainage in the valley is from south to north.

The Benton County climate is characterized as mild, averaging 40º F in the winter to the upper 80sº F in summer. Average annual rainfall equals 40 inches and average annual snowfall is approximately 5.9 inches.

Benton County had a 1990 population of 70,811 (1990 Census), and an estimated population of 77,950 in 2000 (US Census Bureau estimate). The population of Corvallis has increased from 44,757 in 1990 to an estimated 52,215 in 2000. The 1990 Census data indicated there are approximately 27,024 housing units in Benton County, with roughly 3.3% of these units vacant. The average number of persons per household is 2.69.

A majority of the existing land uses north, west, and south of the airport are comprised of agricultural uses. Pockets of concentrated industrial development are located just north of the airport, within the Corvallis Municipal Airport and Industrial Park areas. Scattered rural residences are located to the northeast of the airport, along US Highway 99W.

Currently, the Environmental Protection Agency (EPA) classifies Benton County as an attainment area for all air pollutant standards. Attainment areas are defined as regions where air pollution levels have not persistently exceeded the National Ambient Air Quality Standards (NAAQS).

There is one (1) landfill in the vicinity of Corvallis Municipal Airport, which is located north of Corvallis in the Coffin Butte area.

Surface transportation access to Corvallis Municipal Airport is provided from US Highway 99W by way of Airport Avenue and Airport Place. US Highway 99W provides access to the Central Business District of Corvallis. A secondary airport entrance road is located northeast of the T-hangars off Plumley Road.

Biological communities found within airport environs are typical of the Pacific Northwest. Oak and maple woodlands, ash thickets, and stands of Douglas fir were the predominant native habitat, although most of the area has been converted to agricultural production. Fescue grass is now grown and cultivated in the immediate airport area.

Generally speaking, it is possible to associate various wildlife species with dominant plant types, although wildlife species are not confined to one specific area, and the influences of man have sharply curtailed the historic ranges of most native species. Mammal species generally found in the area include elk, mule deer, beaver, raccoon, opossum, coyote, rabbit, and otter. Bird species found in the area include heron, egret, crane, sandpiper, hawk, killdeer, geese, and duck. Fish species include cutthroat trout, Chinook salmon, steelhead, and sturgeon.

Future Conditions

Noise

Noise is generally defined as unwanted sound and, as such, the determination of acceptable levels is subjective. The day-night sound level (DNL) methodology is used to determine both the noise levels resulting from existing conditions and the potential noise levels that could be expected to occur with the proposed project.

The basic unit in the computation of DNL is the Sound Exposure Level (SEL). An SEL is computed by adding the "A" weighted decibel level [dB(A)] for each second of a noise event above a certain threshold ("A" weighted refers to the sound scale pertaining to the human ear). For example, a noise monitor located in a quiet residential area [40 dB(A)] receives the sound impulses of an approaching aircraft and records the highest dB(A) 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. The following table, entitled *COMPARATIVE NOISE LEVELS*, depicts the typical dB(A) values of noise commonly experienced by people. This illustrates the relative impact of single event noise in "A" weighted level.

DNL levels usually are depicted as grid cells or noise contours. Grid cells are squares of land of a specific size that are entirely characterized by a noise level. Noise contours are interpolations of noise levels based on the center of a grid cell and drawn to connect all points of similar level. Noise contours appear similar to topographical contours and form concentric "footprints" about a noise source. These footprints of DNL noise contours drawn around an airport are used to predict community response to the noise from aircraft using that airport.

The main advantage of DNL is that it provides a common measure for a variety of differing noise environments. The same DNL level can describe both an area with very few high level noise events and an area with many low level events. DNL is thus constructed because it has been found that the total noise energy in an area predicts community response. It must be remembered that the DNL noise contours do not delineate areas that are either free from excessive noise or areas that will be subjected to excessive noise. In other words, it cannot be expected that a person living on one side of a DNL noise contour will have a markedly different reaction than a person living nearby, but on the other side of the noise contour. What can be expected is that the general aggregate community response to noise within the 65 DNL noise contour, for example, will be less than the public response from the 70 DNL noise contour, and even less still than the response from within the 75 DNL noise contour.

Table E1
COMPARATIVE NOISE LEVELS
Corvallis Municipal Airport Master Plan

Activity	dB(A) Levels
Rustling Leaves	20
Room in Quiet Dwelling at Midnight	32
Soft Whisper at 5 Feet	34
Men's Clothing Department of Large Store	53
Window Air Conditioner	55
Conversational Speech	60
Household Department of Large Store	62
Busy Restaurant	65
Typing Pool	65
Vacuum Cleaner in House (at 10 feet)	69
Ringing Alarm Clock (at 2 feet)	80
Loudly Reproduced Orchestral Music in Large Room	82
Printing Press Plant (medium size automatic)	86
Heavy City Traffic	92
Heavy Diesel-Propelled Vehicle (at 25 feet)	92
Air Grinder	95
Cut-off Saw	97
Home Lawn Mower	98
Turbine Condenser	98
150 Cubic Foot Air Conditioner	100
Banging of Steel Plate	104
Air Hammer	107
Jet Airliner (500 feet overhead)	115

Note: Prolonged levels over 85 dB(A) represent beginning of hearing damage.
Adapted from Impact of Noise on People, Federal Aviation Administration.

Computer Modeling. The DNL noise contours were generated using the Integrated Noise Model (INM) Version 6.0b, which is a computer program developed by the Federal Aviation Administration specifically for modeling the noise environment at airports. The INM program requires the input of the physical and operational characteristics of the airport. Physical characteristics include runway end coordinates, displaced thresholds, airport altitude, and temperature. Operational characteristics include aircraft mix and flight tracks. Optional data that can be

incorporated in the model includes approach and departure profiles, approach and departure procedures, and aircraft noise curves.

Noise Impacts. Using the existing and forecast aircraft operation numbers presented earlier, noise contours have been generated and are presented in the following illustrations entitled *EXISTING (1999) NOISE CONTOURS* and *FUTURE (2020) NOISE CONTOURS.* The aircraft operations were sufficient to generate the 55, 60, 65, and 70 DNL noise contours.

The existing 70 DNL noise contour contains approximately 57 acres, all within the airport property line. The 65 DNL noise contour contains approximately 136 acres, also all contained within the airport property line. The 60 DNL encompasses roughly 291 acres, also being primarily contained on airport property, but it does impact approximately 13 acres of agricultural land to the south and northwest of the airport. The existing 55 DNL noise contour encompasses roughly 752 acres of land, with about 244 acres being designated agricultural land to the north, south, east, and west of the airport. There is one rural residence north of the airport, located within the existing 55 DNL noise contour.

The future 70 DNL noise contour encompasses some 115 acres, entirely within airport property. The future 65 DNL noise contour contains approximately 233 acres, including roughly three acres of agricultural land northwest of the Runway 17 threshold. The future 60 DNL noise contour comprises about 536 acres, including roughly 111 acres of agricultural land north and south of the airport. The future 55 DNL noise contour contains approximately 1,417 acres. Agricultural land comprises about 694 acres of the total, and includes one rural residential structure north of the airport.

Compatible Land Use

Establishing land use compatibility within airport environs is the responsibility of local authorities, but should be based on a recognized standard. The Federal Aviation Regulations (FAR) Part 150 Land Use Compatibility Guidelines are the acknowledged standards by the federal government regarding aircraft generated noise at airports. The illustration, entitled *FAR PART 150 LAND USE COMPATIBILITY GUIDELINES*, indicates those land uses that are compatible within certain DNL noise contours. It identifies land uses as being compatible, incompatible, or compatible if sound attenuated. As can be seen, these guidelines indicate that the 65 DNL noise contour is the threshold noise level for defining incompatible land uses.

Farmland

Soils located within airport boundaries fit into three classifications. The soils classified as Dayton silt loam, 0 to 2% slopes, comprise the largest portion of airport

Figure E1
Existing (1999) Noise Contours

Figure E2
Future (2020) Noise Contours

Figure E3
FAR Part 150 Land Use Compatibility Guidelines

property. Woodburn silt loam, 0 to 3% slopes, and Amity silt loam, 0 to 3% slopes, encompass the remainder of the soils on, and around, airport property

According to the Natural Resources Conservation Service, the Woodburn silt loam, 0 to 3% slopes, is classified as prime farmland in the State of Oregon. The Amity silt loam, 0 to 3% slopes, is classified as prime farmland in the State of Oregon, if drained (see letter in Appendix). The soil survey for Benton County is in the process of being updated. Therefore, the prime farmland designations are subject to change before final correlation and publication.

Since airport improvements will likely impact prime farmland, the Farmland Conversion Impact Rating Form, AD-1066, will need to be submitted prior to the implementation of airport improvements. It is not expected that airport development, as depicted in the Airport Master Plan Update, will have a significant impact on prime and unique farmland within Benton County.

Air Quality

The US Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O_3), particulate matter (PM_{10}), sulfur dioxide (SO_2), oxides of nitrogen (NO_x), and lead (Pb). As stated previously, Benton County is in attainment for all pollutant standards.

Short-term air quality impacts may be expected from heavy equipment pollutant emissions, fugitive dust resulting from the movement of earth for cut and fill, any open burning that may occur on the airport, and the operation of concrete batch plants. Contractors would be required to comply with all local, state, and federal air quality regulations, especially the procedures contained in the Federal Aviation Administration's Advisory Circular (AC) 150/5370-10A, *Standards for Specifying Construction of Airports*, which is the FAA guidance to airport sponsors concerning protection of the environment during construction projects.

Wetlands

Wetlands are basically defined as areas inundated by surface or groundwater, with a frequency sufficient to support vegetation or aquatic life requiring saturated or seasonally saturated soil conditions for growth and reproduction. The US Army Corps of Engineers has been contacted regarding the presence of jurisdictional wetlands that would be impacted by the proposed projects of this Master Plan Update. Presently, this agency has not responded, but any airport development requiring the discharge of dredged or fill material into jurisdictional wetlands will

require a Department of the Army permit pursuant to Section 404 of the Clean Water Act.

The Oregon Division of State Lands requires a permit if 50 cubic yards or more of material is filled, removed, or altered in wetlands or other state waters. This agency indicates that wetlands are present throughout the general airport area (see letter in Appendix). Before development occurs at the airport, it will be evaluated to determine if a wetlands delineation should be performed to ensure compliance with State and Federal wetland regulations.

Historical, Architectural, Archaeological, and Cultural Resources

The State Historic Preservation Office indicates that it has no data on the project area since it has never been surveyed for cultural resources (see letter in Appendix). However, the rivers and streams surrounding the airport are all high probability zones for archaeological sites. Therefore, it is recommended that a professional archaeologist conduct a cultural resources survey before airport projects are implemented. Additionally, should construction activities expose buried archeological material, work would stop in that area and both the FAA and the Oregon Historic Preservation Office would be contacted.

Threatened and Endangered Species

The Endangered Species Act, as amended, requires each Federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat of such species. The Oregon Natural Heritage Program conducted a data system search for rare, threatened, and endangered plant and animal records within a two mile radius of the airport. Their data indicates that 28 records are present. The National Marine Fisheries Service indicates that two threatened anadromous fish species under their jurisdiction, the Upper Willamette River steelhead (*Oncorhynchus mykiss*) and the Upper Willamette River Chinook (*Oncorhynchus tshawytscha*), may be present in the airport area (see letter in Appendix).

The US Fish and Wildlife Service has provided a table of all federally listed threatened and endangered species, as well as candidate species and "species of concern", that may occur within Corvallis Municipal Airport (see table in Appendix). Listed threatened or endangered species, not including the fish species listed previously, include: Bald Eagle (*Haliaeetus leucocephalus*), Fender's blue butterfly (*Icaricia icarioides fenderi*), Golden Indian paintbrush (*Castilleja levisecta*), Willamette daisy (*Erigeron decumbens* var. *decumbens*), Howellia (*Howellia aquatilis*), Bradshaw's

lomatium (*Lomatium bradshawii*), Kincaid's lupine (*Lupinus sulphureus* var. *kincaidii*), and Nelson's checkermallow (*Sidalcea nelsoniana*).

Prior to implementation of any airport projects, a biological assessment should be performed to determine if any of the above mentioned species occur at, or in, the vicinity of the impacted area, and if any critical habitat of such species would be impacted. Should a biological assessment determine any impacts to such species or habitat, then appropriate mitigation measures and permits would be coordinated with the Fish and Wildlife Service and the National Marine Fisheries Service.

Section 4(f) Property

Section 4(f) of the Department of Transportation Act (recodified at 49 USC, Subtitle I, Section 303) provides that no publicly owned park, recreation area, wildlife or waterfowl refuge, or land of a historic site that is of national, state, or local significance will be used, acquired, or affected by programs or projects requiring Federal assistance for implementation. The improvements recommended in this Master Plan Update will not impact such properties. The William L. Finley National Wildlife Refuge, which is located approximately four miles south, is the nearest publicly owned land in the vicinity of the airport.

Airport Plans

Introduction

The plan for the future development of Corvallis Municipal Airport has evolved from an analysis of many considerations. Among these are: aviation demand forecasts and facility requirements; aircraft operational characteristics; environmental considerations; and as characterized in the previously noted statement of goals, the general direction of airport development prescribed by airport management. Forecasts are utilized as a basis for planning; however, facilities are only to be constructed to meet actual demand.

Previous chapters have established and quantified the future development needs of the airport. In this chapter, the various elements of the plan are categorically reviewed and detailed in summary and graphic format. A brief written description of the individual elements, represented in the set of *Airport Plans* for Corvallis Municipal Airport, is accompanied by a graphic description presented in the form of the *Airport Layout Plan (ALP)*, the *Airport Airspace Drawings*, the *Inner Portion of the Approach Surface Drawings,* the *Terminal Area Plan,* the *Airport Property Map,* and the *Land Use Drawing.*

Airport Layout Plan

The Airport Layout Plan (ALP) is a graphic depiction of existing and ultimate airport facilities that will be required to enable the airport to properly accommodate the forecast future demand. In addition, the ALP also provides detailed information on both airport and runway design criteria, which is necessary to define relationships with applicable standards. The following illustration, entitled *AIRPORT LAYOUT PLAN,* and the following paragraphs describe the major components of the future airport development plan.

Figure F1
AIRPORT LAYOUT PLAN
(To Be Included)

Runway System

The airport's runway configuration will remain structured around two runways. Runway 17/35 will be retained as the airport's primary runway. Ultimately, Runway 17/35 is programmed to be extended from its existing length of 5,900 feet to a length of 6,950 feet. Runway 17/35 will remain at its existing width of 150 feet. The crosswind runway (Runway 9/27) will be maintained at its existing length and width (3,335' x 75').

Another important consideration related to runway development at Corvallis Municipal Airport is the existing and planned instrument approach system.

- Runway 17 currently has CAT I ILS approach capabilities that will be maintained. The current ILS capabilities will be supplemented with precision GPS capabilities, when available.

- Runway 35 currently has non-precision instrument approach capabilities with a not-lower-than 1 mile visibility minimum. Runway 35 is programmed for improved instrument approach capabilities in the future (not-lower-than ¾ mile visibility minimum).

- Runway 9 and Runway 27 will continue to be served with visual approach capabilities only.

Land Acquisition. In association with runway approach protection zones and approach lighting, two land parcels are recommended for acquisition. The two areas are:

- Runway 17 Relocated Approach Lighting System – approximately 12 acres (with land owner cooperation, this is likely to be arranged through the acquisition of additional easement rights).
- Runway 35 Runway Protection Zone – approximately 10 acres of additional easement.

The airport should control height of objects and land use within the RPZ areas. This can be accomplished through acquisition of easements; however, the FAA recommends fee simple ownership, where practical.

Runway Approach Instrumentation and Lighting. The existing instrument approach capabilities to Runway 17 are to be maintained with the existing approach lighting system and ground based NAVAID system. GPS or ground-based instrument

approach capabilities will be utilized to provide improved instrument approach procedures to Runway 35.

The Medium Intensity Runway Lights (edge lighting) serving each runway will be maintained. Visual Approach Slope Indicator (VASI) lights serve Runway 17 and Runway 35. Precision Approach Path Indicator (PAPI) lights serve Runway 27. All runway ends are programmed for PAPI lights in the future. Runway End Indicator Lights (REIL) are existing on Runway 35. REILs are recommended for Runways 9 and 27.

Runway 17 has an existing approach lighting system (MALSR) that will be retained and relocated when the runway is extended. Runway 35 is programmed for a simplified approach lighting system (ODALS or MALS) in the future

Taxiway System

The parallel taxiway systems serving Runway 17/35 (Taxiway B) and Runway 9/27 (Taxiway A) will be retained. Taxiway B will be extended to the north to provide a full parallel taxiway on the east side of Runway 17/35.

Landside Development

As discussed in the previous chapters, the ALP also allocates various development areas for landside facilities. Landside facilities include terminal facilities, aircraft parking aprons, hangars, aircraft maintenance facilities, automobile access and parking, support facilities, etc. A detailed illustration of the landside development proposal is provided in the *Terminal Area Plan* section of this chapter. As provided on the Airport Layout Plan, proposed landside development includes:

Existing and Future Aviation-Use Facilities. This area is located on the east side of the primary runway, and the north side of the crosswind runway. The area will continue to accommodate various types of general aviation storage and maintenance facilities (ranging from small T-hangars to large corporate and FBO hangars), as well as the airport's commercial passenger facilities, new Aircraft Rescue and Firefighting Facilities, and new Air Cargo Facilities.

Airspace Plan

The Airport Airspace Drawing is based upon Federal Aviation Regulations (FAR) Part 77, *Objects Affecting Navigable Airspace*. In order to protect the airport's airspace and approaches from hazards that could affect the safe and efficient operation of

aircraft, federal criteria contained in the FAR Part 77 document have been established to provide guidance in controlling the height of objects in the vicinity of airports. FAR Part 77 criteria specify a set of imaginary surfaces, which, when penetrated, identify an object as being an obstruction.

The *AIRPORT AIRSPACE DRAWINGS*, which are illustrated in the following figures, provide plan and profile views depicting these criteria as they specifically relate to Corvallis Municipal Airport. The plan is based on the ultimate planned runway lengths, along with the ultimate planned approaches to each runway end. For Runway 17/35, it is based on larger-than-utility criteria with a precision instrument approach to Runway 17 and a non-precision instrument approach to Runway 35. For Runway 9/27, it is based on larger-than-utility criteria with visual approaches to both runway ends.

Inner Portion of the Approach Surface Drawings

To provide a more detailed view of the inner portions of the Part 77 imaginary approach surfaces and the Runway Protection Zone (RPZ) areas, the following drawings are provided. An RPZ is trapezoidal in shape, centered about the extended runway centerline and typically begins 200 feet beyond the end of the runway. The RPZs are safety areas within which it is desirable to clear all objects (although some uses are normally acceptable). The size of the RPZ is a function of the design aircraft and the visibility minimums associated with the runway's instrument approach capabilities.

The *INNER PORTION OF THE APPROACH SURFACE DRAWINGS*, which are depicted in the following illustrations, provide large-scale drawings with both plan and profile delineations. They are intended to facilitate identification of the roadways, utility lines, railroads, structures, and other possible obstructions that may lie within the confines of the inner approach surface area associated with each runway end. As with the *AIRPORT AIRSPACE DRAWINGS*, the *INNER PORTION OF THE APPROACH SURFACE DRAWINGS* are based upon the ultimate planned runway length, along with the ultimate planned approaches to each runway.

Figure F2
AIRPORT AIRSPACE
PLAN (with Runway 9/27 Profile)
(To Be Included)

Figure F3
AIRPORT AIRSPACE
EXTENDED PLAN
(To Be Included)

Figure F4
AIRPORT AIRSPACE PROFILES (Runway 17/35)
(To Be Included)

Figure F5
Inner Portion of Approach Surface Drawing – R/W 17 (Plan View)
(To Be Included)

Figure F6
Inner Portion of Approach Surface Drawing – R/W 17 (Profile View)
(To Be Included)

Figure F7
Inner Portion of Approach Surface Drawing – R/W 35 (Plan & Profile View)
(To Be Included)

Figure F8
Inner Portion of Approach Surface Drawing – R/W 9 & 27 (Plan & Profile View)
(To Be Included)

Terminal Area Plan

The following illustration, entitled *TERMINAL AREA PLAN,* presents a detailed view of the most intensely developed landside use area on the airport.

Landside Facilities

Terminal Building. The existing commercial passenger terminal facilities at Corvallis Municipal Airport are located within the large FBO hangar (Bertea Hangar). Because it is expected that the Bertea Hangar structure will reach its useful life in the next few years and will not be able to be economically maintained, it is programmed to be removed. The new passenger terminal building is programmed to be built adjacent to the main aircraft parking ramp, in the area that is currently being used for automobile parking south of the Bertea Hangar. When the terminal building is constructed, automobile parking and access improvements will also take place.

Aircraft Rescue and Fire Fighting (ARFF) Facility. Currently, there are no fire fighting facilities located on airport property. A new ARFF facility is to be built adjacent to Taxiway A, in the area west of the main aircraft parking ramp.

Air Traffic Control Tower. An additional task identified during the alternative discussion for this master planning effort was the need to spot potential sites for a new air traffic control tower (ATCT). The siting requirements for an ATCT facility are stringent with regard to sight lines to the aircraft operating surfaces, height of structure, and direction of view. Because of this, there are very few appropriate sites available. It is preferable to minimize the need for ATCT personnel to look into the sun; therefore, a site on the south side of airport property would be best.

Because of the undeveloped nature of the south side of the airport and its topographic flatness, it appears that an ATCT facility could be programmed in the area south of Runway 9/27 and east of Runway 17/35.

Aircraft Storage and Maintenance Faculties. These facilities are to be located within the aviation-use development area east, west, and north of the Bertea Hangar. The area to the north of the Bertea Hangar will be primarily dedicated to smaller general aviation storage needs (T-hangars and executive hangars), while the areas to the east and west will be used for larger general aviation uses (FBO hangars, maintenance hangars, corporate hangars, etc.). Taxiway access improvements are also programmed in conjunction with the development of new general aviation facilities. Individual roadway access and automobile parking needs will be addressed with specific hangar development plans.

Figure F9
Terminal Area Plan
(To Be Included)

Land Use Plan

The *LAND USE DRAWING,* presented in the following figure, depicts existing and recommended use of all land within the ultimate airport property line and in the vicinity of the airport (including the area contained in the future 65 DNL noise contour). The purpose of the Land Use Drawing is to provide airport management a plan for leasing revenue-producing areas on the airport. It also provides guidance to local authorities for establishing appropriate land use zoning in the vicinity of the airport.

Airport Property Map

The *AIRPORT PROPERTY MAP (Exhibit A),* which is presented in the following illustration, indicates how various tracts of land within the airport boundaries were acquired (e.g., Federal funds, surplus property, local funds, etc.). The purpose of the Airport Property Map is to provide information for analyzing the current and future aeronautical use of land acquired with Federal funds.

Figure F10
Land Use Plan
(To Be Included)

Figure F11
Airport Property Map
(To Be Included)

Implementation Program

Introduction

The improvements necessary to efficiently accommodate the forecast aviation demands for Corvallis Municipal Airport have been placed into three phases: phase one (0-5 years), phase two (6-10 years), and phase three (11-20 years). The proposed improvements are illustrated graphically by time period on the *PHASING PLAN* (see Figure G1), along with the project cost estimates that are presented on the following pages.

Implementation Schedule and Project List

A list of capital improvement projects has been assembled from the facility requirements documentation previously presented. The project list has been coordinated with the Airport Layout Plan drawing set and the Capital Improvement Program that is continuously updated by airport management and the Federal Aviation Administration. The projects for the first five years are listed in priority order by year. In second and third phases (years 6-20), the projects are listed in priority order without year designators. It is anticipated that the project phasing will change as local and federal priorities evolve.

Phasing Plan

To supplement the project list and project cost estimates, an illustration will be prepared. This graphic, entitled *PHASING PLAN*, will indicate the suggested phasing for improvement projects throughout the twenty-year planning period. These are suggested schedules and variance from them may be necessary, especially during the latter time periods. Attention has been given to the first five years because the projects outlined in this time frame include many critical improvements. The demand for certain facilities, especially in the latter time frame, and the economic feasibility of their development, are to be the prime factors influencing the timing of individual project construction. Care must be taken to provide for adequate

lead-time for detailed planning and construction of facilities in order to meet aviation demands. It is also important to minimize the disruptive scheduling where a portion of the facility may become inoperative due to construction and to prevent extra costs resulting from improper project scheduling.

Cost Estimates

Cost estimates for individual projects, based on current dollars, have been prepared for improvements that have been identified as necessary during the twenty-year planning period. Facility costs have been formulated using unit prices extended by the size of the particular facility and tempered with specific considerations related to the region, the airport, and the development site. That being said, these estimates are intended to be used for planning purposes only and should not be construed as construction cost estimates, which can only be compiled following the preparation of detailed design documentation.

Capital Improvement Program (CIP)

To assist in preparation of the Capital Improvement Program which the City of Corvallis keeps on file and up to date with the FAA, the first phase of the project/ cost list, *PHASE I (0 - 5 YEARS) DEVELOPMENT PLAN PROJECTS*, has been organized by year, in a format similar to that used by the FAA. The projects, phasing, and costs presented in this Master Plan Update are the best projections that can be made at the time of formulation. The purpose of the project list, phasing, and costs listed here is to provide a reasonable projection of capital needs, which can then be utilized in local and federal financial programming. In reality, as soon as this long-range planning document is published, the project list starts to be out of date and; therefore, it will always differ to some degree with the airport's 5-year CIP on file with the FAA.

Financial Plan

Funding sources for the capital improvement program depend on many factors, including Airport Improvement Program (AIP) project eligibility, the ultimate type and use of facilities to be developed, debt capacity of the Airport, the availability of other financing sources, and the priorities for scheduling project completion. For planning purposes, assumptions were made related to the funding source of each capital improvement. The project costs provided in the Development Plan Project tables are identified with likely funding sources.

Sources of Capital Funding

AIP Entitlement Grants. The Airport Improvement Program provides passenger and cargo entitlement grants for eligible Airport projects. Entitlement funding that airports receive is based on a formula using the airport's passenger enplanements and cargo weight, which is reported two years prior to the current grant year, with a minimum amount for primary commercial service airports of $650,000 in 2000 and $1,000,000 per year beginning in fiscal 2001. The FAA evaluates airport grant requests using a published priority ranking system that is weighted toward safety, airfield pavement and airfield capacity projects, although other non-airfield projects, such as terminal buildings and main access/entrance roads, are also eligible. Within the entitlement amount granted, up to 90% of eligible project costs are funded with the remaining 10% provided from other non-federal, local airport sources. Corvallis Municipal Airport will be eligible to receive AIP entitlement grants if commercial passenger service can be established on a regular basis.

AIP Discretionary Grants. The FAA also provides discretionary grants (on a 90%/10% basis), over and above entitlement funding, to airports for projects that have a high federal priority for enhancing safety, security and capacity of the airport, and would be difficult to fund otherwise. The amount that individual grants vary can be significant in comparison to entitlements and are awarded at the FAA's total discretion. Discretionary grant applications are evaluated based on need, the FAA's project priority ranking system, and the FAA's assessment of a project's significance within the national airport and airway system.

FAA Facilities & Equipment Funds. Within the FAA's budget appropriation, funding is available in the Facilities and Equipment (F&E) Fund to purchase navigational aids and air safety-related technical equipment for use at commercial service airports in the national airport system. F&E funds are provided on a discretionary basis by the FAA.

Private Third Party Financing. Many airports use private third party financing when the planned improvements will be primarily used by a private business or other organization. Such projects are not ordinarily eligible for federal funding. Projects of this kind typically include hangars, FBO facilities, fuel storage, air cargo facilities, exclusive aircraft parking aprons, industrial development areas, non-aviation commercial areas, and various other projects.

Airport Revenues. It is assumed that airport revenues over and above that utilized to cover airport expenses, will be the primary source of the "local" capital improvement dollars.

State Grants. The State of Oregon provides some grant money for airport projects; however, these funds are primarily intended to provide assistance on pavement "maintenance" oriented projects, such as crack seals and marking.

Figure G1
PHASING PLAN
(TO BE INCLUDED)

Table G1
PHASE I (0-5 YEARS) DEVELOPMENT PLAN PROJECTS
Corvallis Municipal Airport Master Plan Update

	Project Description	Note	Total Costs	Recommended Financing Method Local a)	State	Federal c)
	Year 1 (FY 01/02)					
A.1	Construct TW/Apron Pavement in Hangar Dev. Area		$184,000.00	$18,400.00	$0.00	$165,600.00
A.2	Construct Corporate/Executive Hangars (1@80' x 100' & 33,000 SF Helicopter Hangar)	b)	$0.00	$0.00	$0.00	$0.00
	YEAR 1 TOTAL		**$184,000.00**	**$18,400.00**	**$0.00**	**$165,600.00**
	Year 2 (FY 02/03)					
A.3	Extend TW B To the North - From TW B-1 to TW A		$1,515,000.00	$151,500.00	$0.00	$1,363,500.00
A.4	Construct Runup Area - West End of TW A		$350,000.00	$35,000.00	$0.00	$315,000.00
A.5	Install MITL TW B & New Signs RW 17/35		$1,210,000.00	$121,000.00	$0.00	$1,089,000.00
A.6	Construct 250' x 250' Aircraft Parking Apron		$640,000.00	$64,000.00		$576,000.00
	YEAR 2 TOTAL		**$3,715,000.00**	**$371,500.00**	**$0.00**	**$3,343,500.00**
	Year 3 (FY 03/04)					
A.7	Construct 400' Stopway on the North End of Runway 17/35	d)	$925,000.00	$771,750.00	$85,750.00	$67,500.00
A.8	Runway 17/35 Pavement Rehabilitation		$3,180,000.00	$318,000.00	$0.00	$2,862,000.00
A.9	Phase I Perimeter Fence Improvement (6,000 lf)		$205,000.00	$20,500.00	$0.00	$184,500.00
A.10	Storm Sewer System Improvements - Phase I		$260,000.00	$260,000.00	$0.00	$0.00
A.11	Airport Road Improvements - HW 99 to RR Tracks		$200,000.00	$200,000.00	$0.00	$0.00
A.12	Construct TW/Apron Pavement in Hangar Dev. Area		$270,000.00	$27,000.00	$0.00	$243,000.00
A.13	Construct T-hangars (10-12 units)		$400,000.00	$400,000.00	$0.00	$0.00
A.14	Construct Corporate/Executive Hangars (2 units)	b)	$0.00	$0.00	$0.00	$0.00
A.15	Environmental Assessment/Cat-Ex Work		$50,000.00	$5,000.00	$0.00	$45,000.00
	YEAR 3 TOTAL		**$5,490,000.00**	**$2,002,250.00**	**$85,750.00**	**$3,402,000.00**
	Year 4 (FY 04/05)					
A.16	Construct ARFF Facility	e)	$1,800,000.00	$180,000.00	$0.00	$1,620,000.00
A.17	Construct ARFF Access Road		$550,000.00	$550,000.00	$0.00	$0.00
A.18	Phase II Perimeter Fence Improvement (6,000 lf)		$210,000.00	$21,000.00	$0.00	$189,000.00
A.19	Storm Sewer Improvements Phase II		$260,000.00	$260,000.00	$0.00	$0.00
A.20	Phase III Perimeter Fence Improvement (6,000 lf)		$210,000.00	$21,000.00	$0.00	$189,000.00
	YEAR 4 TOTAL		**$3,030,000.00**	**$1,032,000.00**	**$0.00**	**$1,998,000.00**
	Year 5 (FY 05/06)					
A.21	Storm Sewer Improvements Phase III		$385,000.00	$385,000.00	$0.00	$0.00
A.22	Construct New Terminal Building w/Access & Parking	f)	$1,380,000.00	$690,000.00	$0.00	$690,000.00
A.23	Construct TW/Apron Pavement in Hangar Dev. Area		$220,000.00	$22,000.00	$0.00	$198,000.00
A.24	Construct T-hangars (10-12 units)		$400,000.00	$400,000.00	$0.00	$0.00
A.25	Construct Corporate/Executive Hangars	b)	$0.00	$0.00	$0.00	$0.00
	YEAR 5 TOTAL		**$2,385,000.00**	**$1,497,000.00**	**$0.00**	**$888,000.00**
	Sub-Total/Phase I		**$14,804,000.00**	**$4,921,150.00**	**$85,750.00**	**$9,797,100.00**

Notes

Cost estimates, based upon 2001 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

a) Local Funding - Private, current revenues, cash reserves, bonds, etc.
b) Third Party Funding - No Costs Listed
c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
d) Federal share = 90% of cost of 150' x 150' blast pad; state share = 10% of remainder
e) Only constructed if necessary to meet 14CFR Part 129 requirement.
f) Only constructed if airport attains primary commercial service status.
g) Specific justification required to receive AIP funding.

Table G2
PHASE II (6-10 YEARS) DEVELOPMENT PLAN PROJECTS
Corvallis Municipal Airport Master Plan Update

	Project Description	Note	Total Costs	Recommended Financing Method		
				Local a)	State	Federal c)
B.1	Hangar Area Taxiway Improvements, Raze Large Hangar		$1,140,000.00	$114,000.00	$0.00	$1,026,000.00
B.2	Construct New FBO Apron		$370,000.00	$37,000.00	$0.00	$333,000.00
B.3	Construct New FBO Hangar w/Access & Parking	b)	$0.00	$1.00		
B.4	Construct Air Freight Building w/Parking & Access	b)	$0.00	$0.00	$0.00	$0.00
B.5	Remediate Abandoned Fuel Line (17,000 lf)		$120,000.00	$12,000.00	$0.00	$108,000.00
B.6	Relocate Fuel Storage Facility	b)	$50,000.00	$50,000.00	$0.00	$0.00
B.7	Environmental Assessment/Cat-Ex Work		$50,000.00	$5,000.00	$0.00	$45,000.00
B.8	Airfield Pavement Rehab ($50,000/year)		$250,000.00	$25,000.00	$0.00	$225,000.00
B.9	Construct TW/Apron Pavement in Hangar Dev. Area		$280,000.00	$28,000.00	$0.00	$252,000.00
B.10	Construct T-hangars (10-12 units)		$400,000.00	$400,000.00	$0.00	$0.00
B.11	Construct Corporate/Executive Hangars (4 units)	b)	$0.00	$0.00	$0.00	$0.00
B.12	Extend RW 17/35 750' to the North - (includes conversion of 400' stopway to full use, w/relocation of GS & MA	g)	$2,010,000.00	$201,000.00	$0.00	$1,809,000.00
B.13	Extend TW B From TW A North to the New North End of Runway 17/35		$840,000.00	$84,000.00	$0.00	$756,000.00
B.14	Terminal Building Expansion w/Parking		$2,500,000.00	$1,250,000.00	$0.00	$1,250,000.00
	Sub-Total/Phase II		**$8,010,000.00**	**$2,206,001.00**	**$0.00**	**$5,804,000.00**

Notes

Cost estimates, based upon 2001 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

a) Local Funding - Private, current revenues, cash reserves, bonds, etc.
b) Third Party Funding - No Costs Listed
c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
d) Federal share = 90% of cost of 150' x 150' blast pad; state share = 10% of remainder
e) Only constructed if necessary to meet 14CFR Part 129 requirement.
f) Only constructed if airport attains primary commercial service status.
g) Specific justification required to receive AIP funding.

Table G3
PHASE III (11-20 YEARS) DEVELOPMENT PLAN PROJECTS
Corvallis Municipal Airport Master Plan Update

	Project Description	Note	Total Costs	Recommended Financing Method Local a)	State	Federal c)
C.1	Airfield Pavement Rehab ($50,000/year)		$500,000.00	$50,000.00	$0.00	$450,000.00
C.2	Environmental Assessment/Cat-Ex Work		$50,000.00	$5,000.00	$0.00	$45,000.00
C.3	Construct TW/Apron Pavement in Hangar Dev. Area		$340,000.00	$34,000.00	$0.00	$306,000.00
C.4	Construct T-hangars (6 large units)		$400,000.00	$400,000.00	$0.00	$0.00
C.5	Construct Corporate/Executive Hangars (3 units)	b)	$0.00	$0.00	$0.00	$0.00
C.6	Acquire Easement for South RPZ - Extended Runway		$0.00	$0.00	$0.00	$0.00
C.7	Extend RW17/35 and TW B 300 Feet to the South	g)	$1,200,000.00	$120,000.00	$0.00	$1,080,000.00
C.8	Construct 1,600 1f Watermain Improvement		$410,000.00	$410,000.00	$0.00	$0.00
	Sub-Total/Phase III		**$2,900,000.00**	**$1,019,000.00**	**$0.00**	**$1,881,000.00**
	GRAND TOTALS		**$25,714,000.00**	**$8,146,151.00**	**$85,750.00**	**$17,482,100.00**

Notes

Cost estimates, based upon 2001 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

a) Local Funding - Private, current revenues, cash reserves, bonds, etc.
b) Third Party Funding - No Costs Listed
c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
d) Federal share = 90% of cost of 150' x 150' blast pad; state share = 10% of remainder
e) Only constructed if necessary to meet 14CFR Part 129 requirement.
f) Only constructed if airport attains primary commercial service status.
g) Specific justification required to receive AIP funding.

CORVALLIS
ENHANCING COMMUNITY LIVABILITY

CORVALLIS CITY COUNCIL
NOTICE OF DISPOSITION

ORDER 2001- 87

CASE: **Airport Master Plan** (CPAO1-00002)

TOPIC: Approval of an application for a Comprehensive Plan Amendment to allow for the adoption of an updated Airport Master Plan. Adoption of the Airport Master Plan amends Chapter 7 of the Transportation Plan, which is adopted as a supporting document for Chapter 11 of the Comprehensive Plan.

SITE LOCATION: The subject plan contains policies that relate to an area that is located west of Hwy 99, south of Airport Avenue and southeast of the Marys River.

APPLICANT: City of Corvallis
Public Works Dept.
P.O. Box 1083
Corvallis, OR 97339

OWNER: City of Corvallis
P.O. Box 1083
Corvallis, OR 97339

The Corvallis City Council conducted a review of the application as outlined above on September 4, 2001. The Council voted to APPROVE the Comprehensive Plan Amendment to allow for the adoption of an updated Airport Master Plan. The Council adopted Ordinance 2001-13 (Exhibit A).

The proposal, staff report, hearing minutes, and findings and conclusions may be reviewed at the Community Development Department, Planning Division, City Hall, 501 SW Madison Avenue.

If you wish to appeal this decision, an appeal must be filed with the State Land Use Board of Appeals within 21 days from the date of the decision.

Helen Berg
Mayor Helen Berg
City of Corvallis

Signed this 7th day of September 2001.
Attachments

ORDINANCE 2001-13

AN ORDINANCE relating to a Comprehensive Plan Amendment, modifying Ordinance 98-53, as amended.

Whereas, the Planning Commission, after holding a duly advertised public hearing, has forwarded its recommendation to the City Council concerning a request for a Comprehensive Plan Amendment to include the updated Airport Master Plan as a supporting document to the Comprehensive Plan. This Master Plan pertains to approximately 1,490 acres south of west of Highway 99W, south of Airport Avenue, and southeast of Marys River.

Whereas, after proper legal notice, a public hearing before the City Council, concerning the proposed change, was held on September 4, 2001; and interested persons and the general public were given an opportunity to be heard; and

Whereas, the City Council held deliberations concerning the proposed change on September 4, 2001, and the Council has reviewed the recommendations of the Planning Commission and staff.;

NOW THEREFORE, THE CITY OF CORVALLIS ORDAINS AS FOLLOWS:

Section 1. The findings of fact prepared by staff and contained in Exhibit A (which consist of the complete staff report to the City Council, dated August 24, 2001, including attachments and minutes of the September 4, 2001 public hearing in support of the request are by reference incorporated herein, and are hereby adopted by the City Council.

Section 2. The City Council finds that the proponents have borne their burden of proof; and therefore, the Comprehensive Plan is amended such that the updated Airport Master Plan is recognized as a supporting document to the Comprehensive Plan.

PASSED by the Council this 4th Day of September, 2001.

APPROVED by the Mayor this 4th Day of September, 2001.

Effective this 14th Day of September, 2001.

Helen M. Berg
Mayor

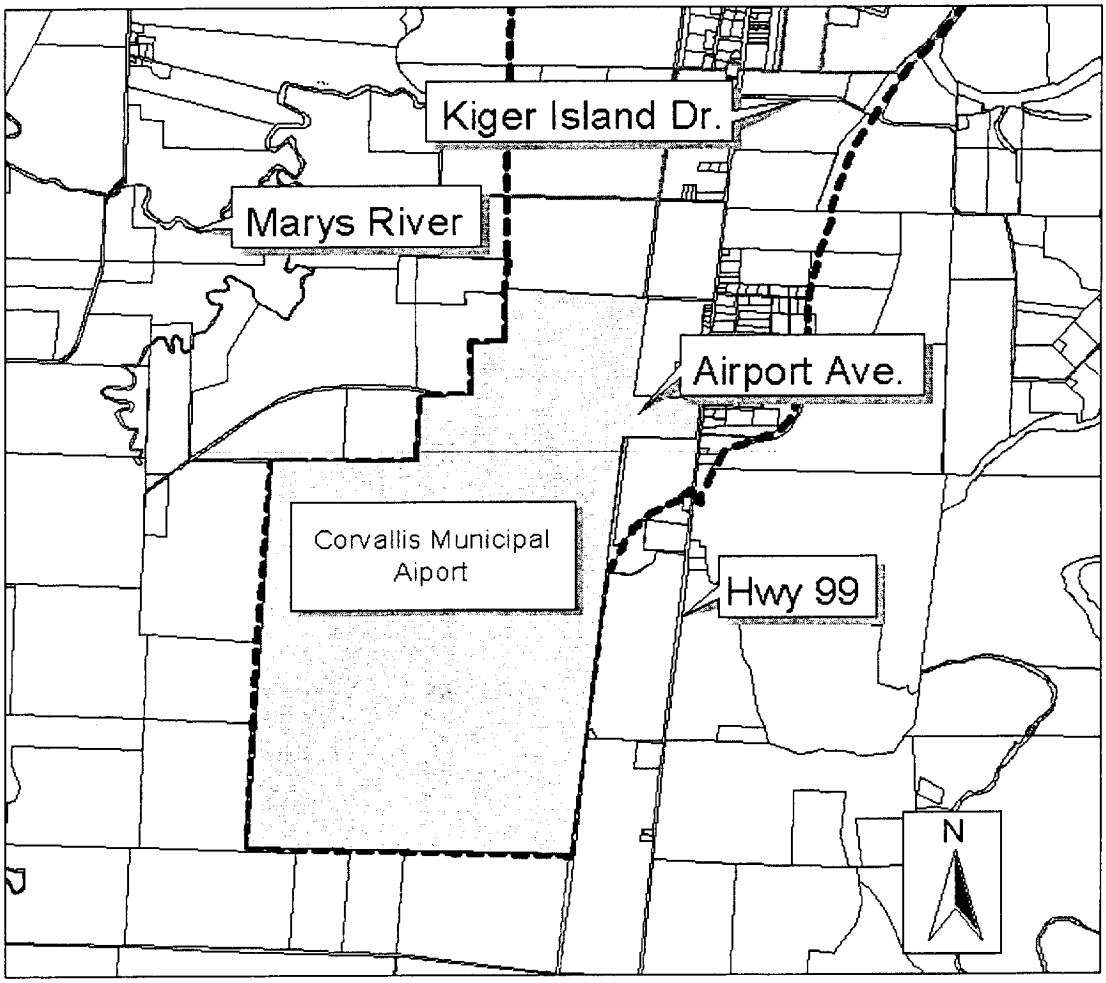
ATTEST:

Jon S. Nelson
City ~~Recorder~~ Manager

1- and final Ordinance
Airport Master Plan (CPA01-00002)

EXHIBIT A

Airport Master Plan
CPA01-00002



Community Development
Planning Division
501 SW Madison Avenue
Corvallis, OR 97333

CORVALLIS CITY COUNCIL
Revised
NOTICE OF DISPOSITION
(Revises Order 2003-115)

ORDER 2003 - 130

CASE: **Airport Master Plan Revision (CPA03-00001)**

REQUEST: Approval of an application for a Comprehensive Plan Amendment to allow for revisions to elements of the Airport Master Plan. The Airport Master Plan will enable and guide future development of aviation and airport-related uses, as well as on-airport and off-airport commercial and industrial uses on the Corvallis Municipal Airport site. The proposed changes to the Airport Master Plan include, but are not limited to, adoption of a revised Airport Land Use Plan, which will allow greater flexibility for siting development on the airport site. The proposal does not change the Benton County Zoning or the Corvallis Comprehensive Plan Map designations.

APPLICANT: City of Corvallis
Public Works Dept.
P.O. Box 1083
Corvallis, OR 97339-1083

OWNER: City of Corvallis
P.O. Box 1083
Corvallis, OR 97339-1083

LOCATION: The subject area is located west of Hwy 99, south of Airport Avenue and southeast of the Marys River.

DECISION: The Corvallis City Council conducted a review of and deliberated on the above case on August 18, 2003. The City Council approved the proposed request for a Comprehensive Plan Amendment that adopts a revised *Corvallis Municipal Airport Master Plan*, consistent with the information contained in Exhibit A and Attachments A and B, which modify the applicant's proposal, and Exhibit A and Attachment C, which identify approved changes to Chapter 7 of the *Corvallis Transportation Plan.* The City Council has adopted the findings contained in the August 8, 2003, staff report and the portions of the minutes of the August 18, 2003, public hearing and deliberations that demonstrate support for approval of the request.

If you wish to appeal the Comprehensive Plan Amendment decision, an appeal must be filed with the State Land Use Board of Appeals within 21 days from the date of the decision.

Helen Berg
Helen Berg, Mayor

Signed this 8th day of September, 2003.

Note: Referenced attachments are available on request.

Housekeeping Changes Resulting from the Final Approval of CPA03-00001

Airport Master Plan pages D.3 and D.4 (Attachment B-3 and B-4):

Airfield Development Considerations and Alternatives

Introduction

The forecast operations and previously stated goals relative to aviation development and economic enhancement were considered. These generalized alternatives are outlined and discussed in the following narrative. Following a review of theses airside development alternatives, the purpose of which is to fulfill *major* facility requirements (basic runway and taxiway configuration), recommendations for landside development are presented. The conclusion of this chapter is the presentation of a generalized conceptual airport development plan, which will include recommendations for major runway and taxiway improvements, along with an airport land use plan. Details related to the conceptual alignment and configuration of the runway/taxiway system ~~and the layout of landside development areas~~ will be presented in a following chapter entitled *Airport Plans*. The layout of landside development areas and the processes for approval of associated development proposals are presented in the section of this chapter entitled *Airport Land Use Plan and Conceptual Airport Development Plan.*

Corvallis Transportation Plan, *Chapter 7 - Air*, page 3 (Attachment C-3):

7.50 SYSTEM ISSUES

7.50.10 LAND USE

Land use issues surrounding airport facilities are addressed in ~~Chapter 7 of~~ the Corvallis Municipal Airport Master Plan.

Exhibit A

ORDINANCE 2003- 28

AN ORDINANCE relating to a Comprehensive Plan Amendment, amending Ordinance 98-53, as amended and declaring an emergency.

Whereas, the Planning Commission, after holding a duly advertised public hearing, has forwarded its recommendation to the City Council concerning a request for a Comprehensive Plan Amendment to amend the Airport Master Plan, a supporting document to the Comprehensive Plan. This Master Plan pertains to approximately 1,270 acres south of west of Highway 99W, south of Airport Avenue, and southeast of Marys River.

Whereas, after proper legal notice, a public hearing before the City Council, concerning the proposed change, was held on August 18, 2003; and interested persons and the general public were given an opportunity to be heard; and

Whereas, the City Council held deliberations concerning the proposed change on August 18, 2003, and the Council has reviewed the recommendations of the Planning Commission and staff.;

NOW THEREFORE, THE CITY OF CORVALLIS ORDAINS AS FOLLOWS:

Section 1. The findings of fact prepared by staff and contained in Exhibit A (which consists of the complete staff report to the City Council, dated August 8, 2003, including attachments and minutes of the August 18, 2003, public hearing in support of the request are by reference incorporated herein, and are hereby adopted by the City Council.

Section 2. The City Council finds that the proponents have borne their burden of proof; and therefore, the Comprehensive Plan is amended such that the updated Airport Master Plan is recognized as a supporting document to the Comprehensive Plan.

Section 3. Emergency Clause. The earliest imposition of the provisions of this ordinance is necessary to preserve the peace, health, and safety of the public. Accordingly, an emergency is declared, and this ordinance will take effect immediately upon its passage by the Council and approval by the Mayor.

PASSED by the Council this 18th Day of August, 2003.

APPROVED by the Mayor this 18th Day of August, 2003.

Effective this 18th Day of August, 2003.

Helen M. Berg
Mayor

ATTEST:

City Recorder

City Council Approved Modifications to the *Airport Master Plan*

Below are the City Council approved modifications to the **applicant-proposed** wording in Attachment B of the August 8, 2003, City Council staff report, which is included here as Attachment B. ~~Stricken~~ text is deleted, and double-underlined text is added.

Airport Master Plan page D.15 (Attachment B-15):

Airport Land Use Plan and Conceptual Airport Development Plan

~~The following illustration, entitled ON~~ *Figure D6 Airport Land Use Plan* represents a compilation of the recommendations presented above. The plan represents appropriate land use designations ~~within the~~for areas governed by the Corvallis Municipal Airport Master Plan. ~~It also identifies the uses that are currently allowed under the County's zoning ordinance and the uses that are ultimately desired.~~ The land uses identified here that are permitted outright or as conditional uses are sub-sets of the uses allowed under the Benton County Development Code and include those uses the City of Corvallis wishes to see developed in this area. Additionally, some uses are identified ("Additional Uses that are Ultimately Desired") that the City would like to have Benton County consider for inclusion in this area when it next updates its Development Code.

The Airport Development (AD) and the Airport Compatible Development (ACD) designations have the same purpose; however, the permitted and conditional uses differ. ~~This is because each are currently within a different zoning designation in the County, and are therefore subject to those regulations~~ Airport Development falls under the County's Industrial zone, and Airport Compatible Development falls under the County's Public zone. Each is therefore subject to its respective zone's regulations. Each of the airport land use designations is identified below and includes the purpose of the zone, the uses permitted outright, conditional uses, and the additional uses desired. The specific uses identified in *italics* are provided as examples only and do not represent all of the uses that may be allowed.

Airport Master Plan page D.16 (Attachment B-16):

The following uses are permitted outright within all of the land use designations noted below:. The location of these uses within the airport property shall be based upon FAA approvals for such facilities.

Uses Permitted Outright

1. Air Traffic Control Towers
2. Airport Navigational Equipment, such as beacons, towers, antennae, lights, or other FAA designated or directed facilities, structures, or infrastructure.

Airport Master Plan page D-17, Figure D-7 (Attachments B-21 and B-35):

Staff proposes that the concept of the building envelopes depicted on Figure D7 be revised so that the individual subdivisions of the hanger buildings are removed (see conceptual modifications on modified Figure D7, page B-37). This will allow development of hangers of various sizes to meet users' needs, within certain guidelines. The guidelines and methodology for reviewing and approving or denying development proposals are described below on pages 3-7 of this memo (beginning on Airport Master Plan page D.19 (Attachment B-19).

Airport Master Plan page D.18 (Attachment B-18):

Aviation Accessible Development (AAD)

Conditional Uses

1. Any airport compatible use which is not permitted within this zone ~~is~~ may be allowed by a conditional use permit approved ~~by the Planning Official~~ in accordance with the Benton County Development Code, provided it can be found to meet the criteria contained in Section "3.c.3" below.

Airport Master Plan page D.19 (Attachment B-19):

Airport Development (AD)

Conditional Uses

1. Any airport compatible use which is not permitted within this zone ~~is~~ may be allowed by a conditional use permit approved ~~by the Planning Official~~ in accordance with the

Benton County Development Code, provided it can be found to meet the criteria contained in Section "3.c.3" below.

Airport Master Plan page D.19 (Attachment B-19):

Change to text at bottom of page:

The ~~future~~ recommendations for future airside, ~~and~~ landside, and terminal facilities have been combined and are graphically presented in ~~the following~~ Figure D7, entitled CONCEPTUAL DEVELOPMENT PLAN. This plan shall be used by the Airport Design Review Committee (described in the City Council-adopted *Corvallis Airport Handbook*) as a guide for locating future facilities within the airport ~~terminal area. An Airport Design Review Committee or similar body shall review new facilities at the airport and shall use the CONCEPTUAL DEVELOPMENT PLAN as a guide in determining appropriate improvements.~~ Criteria for determining consistency with Figure D7 are contained below in section 2, entitled Consistency with the Airport Master Plan. Where a proposed improvement within the Limited Aviation Facilities (LAF) and Commercial Aviation Facilities (CAF) areas is determined not to be consistent with Figure D-7, the Airport Design Review Committee shall consider the proposal based on the procedures and criteria regarding plan variations described below.

1. **Site Location**

   a. Available building sites will be determined by the Airport Design Review Committee (ADRC), consistent with Figure D7- Conceptual Development Plan of the *Corvallis Municipal Airport Master Plan*. Consistency with Figure D7 shall be determined based upon criteria listed below in section "2."

   b. Development proposals found to be consistent with Figure D7, may be approved by the ADRC in a single meeting.

   c. Development proposed that is not consistent with Figure D-7 (variations) shall be considered by the Committee using the procedures and criteria described below in section "3."

   d. All buildings must conform to the established setbacks and height restrictions of the City Building Code and to the FAA FAR Part 77.

2. Consistency with the Airport Master Plan

a. Figure *D7- Conceptual Development Plan* identifies specific building envelopes and building locations for areas designated as Limited Aviation Facilities (LAF) and Commercial Aviation Facilities (CAF) on Figure D6. Proposals for construction of buildings that fall within these envelopes may be found consistent with the Airport Master Plan, provided they meet the additional criteria found in sections "A," "B.1.b," and "B.2" of Chapter XIV of the Airport Handbook. For the purpose of determining consistency, the building envelopes shall include the total area enclosed by each row of proposed buildings, with individual building subdivisions shown only to indicate the likelihood of multiple users.

b. For areas designated on Figure D6 as Airport Compatible Development (ACD), Aviation Accessible Development (AAD), and Airport Development (AD), no specific building envelopes have been identified on Figure D7. Proposals for construction of buildings in these zones may be found consistent with the Airport Master Plan, provided they do not unduly interfere with identified development in the LAF and CAF zones, and they meet the additional criteria found in sections "A," "B.1.b," and "B.2" of Chapter XIV of the Airport Handbook.

c. Improvements within the areas designated on Figure D6 as Runway/Taxiway (RT) may be found consistent with the Airport Master Plan provided they are to be constructed consistent with FAA approvals.

d. In all cases, uses identified as Conditional Uses in the Airport Master Plan shall be processed consistent with the requirements of the Benton County Development Code, and prior to approval, shall be found consistent with section "3.c.3," below.

3. Consideration of Variations from the Airport Master Plan (Figure D-7 Conceptual Development Plan)

a. Variations from the Airport Conceptual Development Plan may be considered minor provided they meet the following criteria:

1) The land use is consistent in location and type with the land uses allowed in Figure D6 - Airport Land Use Plan (and associated text) of the Airport Master Plan; and

2) The proposed structure is less than 5,000 square feet in size, is located within the LAF or CAF areas identified on Figure D-6, and does not extend beyond a building envelope shown on Figure D-7 by more than 20 percent of the area of the proposed structure; or

3) The proposed structure is more than 5,000 square feet in size, is located within the LAF and CAF areas identified on Figure D-6, and does not extend beyond a building envelope shown on Figure D-7 by more than 10 percent of the area of the proposed structure.

b. Minor variations, as determined above in section "3.a," may be approved by the ADRC in a single meeting, following posting of the development site at least seven days in advance of the meeting, provided they meet the following criteria:

1) Further development of facilities consistent with Figure D7 is not unduly interfered with by the proposed structure;

2) The development is proposed to be constructed consistent with the additional criteria found in sections "A," "B.1.b," and "B.2" of Chapter XIV of the Airport Handbook; and

3) The development is consistent with the criteria contained in Section "3.c.3."

c. Variations from the Airport Conceptual Development Plan that are greater than those identified above in "3.a" shall be considered major variations and may be approved using the process and criteria described below.

1) Following a determination by staff or the ADRC that the proposal fails to meet the criteria identified above in "3.a," the development site shall be posted, and notice of the intent to consider the variation shall be sent to all lease holders and businesses licensed to operate in the area regulated by the Corvallis Municipal Airport Master Plan at least 20 days in advance of the subject ADRC meeting.

2) Prior to making a decision regarding approval or denial of the subject proposal, the ADRC shall accept written or verbal public comment.

3) To approve a minor or major variation under this process, the ADRC must determine that the following criteria are met:

a) The land use is consistent in location and type with the land uses allowed in Figure D6 - Airport Land Use Plan (and its associated text) of the *Corvallis Municipal Airport Master Plan*;

b) Further development of facilities consistent with Figure D7 - Conceptual Development Plan is not unduly interfered with by the proposed structure;

c) Adequate taxiway access to all hanger development areas is maintained (the provision of two taxiway routes to each hanger is recommended);

d) Adequate roadway access and parking for existing leaseholders and future uses are maintained;

e) Adequate aircraft parking adjacent to various development areas can be provided;

f) The distance that aircraft must taxi between landside use areas and necessary access points on the runway is not unduly increased;

g) The proposal does not unduly interfere with existing or future utilities;

h) Airport operating surfaces are secured from accidental incursions by automobiles;

I. The proposal does not unduly interfere with aircraft circulation or airport safety; and

i. The proposal does not unduly interfere with vehicle circulation or airport functions.

4) Where a major variation does not meet the criteria contained in section "3.c.3." above, approval will require an amendment to the Airport Master Plan through the City's Comprehensive Plan Amendment process.

4. Appeals

Appeals of decisions of the ADRC and the Airport Commission shall be heard by the City Council as a de novo hearing. Such appeals shall follow the procedure described below:

a. Appeals shall be made in writing to the City Recorder within 12 days of the date the decision is signed. Should the twelfth day fall on a weekend or holiday, appeals shall be due the following work day;

b. At least 20 days in advance of the City Council appeal hearing, the development site shall be posted, and notice of the intent to consider the appeal shall be sent to all lease holders and businesses licensed to operate in the area regulated by the Corvallis Municipal Airport Master Plan.

Recommendation
Regarding Composition of Airport Design Review

The Planning Commission recommended to the City Council that they alter the composition of the Airport Design Review Committee to include people with planning, engineering, and land use backgrounds along with members of the Airport Commission. This recommendation is to be forwarded to the Urban Services Committee for discussion.

Concepts, Alternatives, and Development Plan

Introduction

The purpose of this chapter is to present the Development Plan for Corvallis Municipal Airport, in terms of both its concept and reasoning. This chapter provides a description of the various factors and influences, which will form the basis for the ultimate plan and program.

In concert with the status of the airport, some basic assumptions have been established, which are intended to direct the development of the airport in the future. The aviation activity forecasts and the various considerations on which the forecasts have been based support these assumptions. The assumptions also focus on continued airport development, in response to community needs and economic growth stimulation.

Assumption One. The first assumption states that the airport facility will be developed to accommodate the full range of general aviation aircraft, including corporate business jets, under almost all weather conditions. In addition, there will continue to be demand for the airport to accommodate commercial service passenger aircraft operations by airlines using 9 to 30 passenger turbo-prop aircraft and charter air carrier aircraft (B-737, B-727, MD-80, etc.) a few times a year (primarily for college sports teams). Thus, the airport should be designed to precision approach standards, with proper clearances appropriate to that designation. The two runways at the airport are designed to accommodate different aircraft types, along with differing approach minimums. Specifically, the assumptions are:

Runway 17/35. This runway's existing and future Airport Reference Code for this runway is C-II (the majority of the business jet fleet is included in this designation). The design aircraft is the Canadair CL-600 (a medium to large cabin business jet). The precision instrument approach to Runway 17 will be maintained and instrument approach capabilities (as low as ¾ mile visibility

minimums) to Runway 35 are programmed (Runway 35 currently has non-precision approach capabilities with 1-mile visibility minimums).

Runway 9/27. The existing and future Airport Reference Code for this runway is B-II (the majority of the general aviation propeller aircraft, along with some of the business jets). The design aircraft is the Beech Super King Air B200. Runway 9/27 will be maintained as a visual approach facility.

Assumption Two. The second assumption focuses on the need to accommodate the forecast operations of all aviation types, as expressed by the Annual Service Volume capabilities. It should be noted that the forecasts of activity for the airport are based on anticipated population and economic growth in Corvallis and the region. Forecasts of operational activity and the analysis of the capacity of the airport's runway layout indicate that the airport's existing runway configuration can efficiently accommodate aircraft landings and takeoffs forecast until the end of the twenty-year planning period and beyond. This analysis indicates that, although the existing two-runway layout can accommodate forecast demand, the airport's system of runways, taxiways, and approaches should be programmed for improvements that will maximize the ability to efficiently use the airport (taxiway improvements and runway extensions are likely to be justified in the future).

Assumption Three. The third assumption relates to the requirement that the airport is to be developed to complement and enhance on-airport and off-airport regional economic development activities.

Assumption Four. The fourth assumption focuses on the relationship of the airport to off-airport land uses and the compatible and complementary development of each. This is inherent in the design considerations and placement of facilities so as to complement, to the maximum extent possible, off-airport development, and to ensure the continued compatibility of the airport environs with the operation of the airport.

Goals for Development

Accompanying these assumptions are several goals that have been established for purposes of directing the plan and establishing continuity in the future for airport development. These goals take into account several categorical considerations relating to the needs of the airport, both in the short-term and the long-term, including safety, capital improvements, on-airport land use, land acquisition, land use compatibility, financial and economic conditions, and public interest/investment.

As reflected in the following goals, the airport is recognized for the vital role it plays, both as a transportation facility and an industrial/commercial economic center:

- Accommodate forecast aircraft operations in a safe and efficient manner by the provision of proper facilities and services. Plan and develop the airport to be capable of accommodating the future needs and requirements of Corvallis and the surrounding communities, thus, the airport will continue to serve as a regional general aviation/ commuter passenger facility.

- Identify the best uses for the landside development areas at Corvallis Municipal Airport.

- Develop land acquisition priorities related to airport safety, future airport development, and land use compatibility.

- Plan and develop the airport to be environmentally compatible with the community and minimize environmental impacts on both airport property and property adjacent to the airport.

- Enhance the self-sustaining capability of the airport and ensure the financial feasibility of airport development.

- Encourage the protection of existing public and private investment in land and facilities, and advocate the resolution of existing and potential land use conflicts, both on and off airport property.

Airfield Development Considerations and Alternatives

Introduction

The forecast operations and previously stated goals relative to aviation development and economic enhancement were considered. These generalized alternatives are outlined and discussed in the following narrative. Following a review of these airside development alternatives, the purpose of which is to fulfill *major* facility requirements (basic runway and taxiway configuration), recommendations for landside development are presented. The conclusion of this chapter is the presentation of a generalized conceptual airport development plan, which will include recommendations for major runway and taxiway improvements, along with an ~~on~~-airport land use plan. Details related to the conceptual ~~exact~~ alignment and

configuration of the runway/taxiway system and the layout of landside development areas will be presented in a following chapter entitled *Airport Plans.*

To best accommodate the projected operational demand at Corvallis Municipal Airport through the year 2020, several fundamental development considerations have been identified. These fundamental development considerations are identified below, along with an analysis of potential alternative options associated with each consideration.

Because all airport functions relate to and revolve around the basic runway layout, runway development alternatives must first be carefully examined and evaluated. Specific considerations include runway length, as well as runway orientation and approach protection criteria needed to support forecast use through the planning period.

Runway, Taxiway, and Instrument Approach Considerations

Runway Capacity and Orientation

- The airport's runway system, consisting of the primary runway (Runway 17/35) and the crosswind runway (Runway 9/27), provides adequate capacity to accommodate the forecast number of aircraft operations without excessive delay.

- The orientation of the airport's runways provides adequate crosswind coverage for the entire fleet of aircraft forecast to use the airport.

  Recommendation: **The existing runway configuration provides adequate operational capacity and wind coverage; therefore, no new runways are proposed for development.**

Dimensional Criteria

The primary concerns with regard to the runway system's dimensional criteria relate to FAA specified safety area, object free area, and taxiway setbacks. Each runway has its own set of circumstances as related to these criteria.

> ***Recommendation:*** **No significant deficiencies related to Dimensional Criteria have been identified at Corvallis Municipal Airport. These requirements are described in detail in the preceding *Facility Requirements* chapter.**

Instrument Approach Capabilities

Existing instrument approach capabilities at the airport include precision ILS, along with non-precision VOR/DME, NDB, and GPS to Runway 17 and non-precision VOR/DME and GPS approach capabilities to Runway 35.

The purpose of providing improved instrument approach capabilities at the airport is to improve the airport's ability to safely accommodate aircraft operations during periods of inclement (low visibility) weather conditions. As the number of aircraft operations increase at the airport, the cost of having periods of time when the airport is closed due to low visibility increases. In addition, having good instrument approach capabilities to more runway ends provides flexibility to accommodate operations when certain portions of the runway system are closed for an emergency or for repair/construction/maintenance.

Another consideration is the fact that Global Positioning System (GPS) approaches are programmed by the FAA to become its standard. GPS technology will provide the opportunity for enhanced instrument approaches with minimal investments for on-airport equipment.

With these concepts as a basis, for long-range planning purposes, the best instrument approaches that can be physically accommodated without significant negative impacts should be reflected on airport plans. This will protect the ability to implement improved instrument approach procedures, as demand requires.

- Runway 17 is currently equipped to accommodate CAT I precision ILS approaches, along with a variety of non-precision approach capabilities. CAT I precision approach capabilities should be maintained in the future.

  Runway 35 currently has non-precision approach capabilities with a visibility minimum of 1 mile. The runway is programmed for instrument approach capability improvements to allow visibility minimums not-lower-than ¾ of a mile.

  Runway 9/27 is currently a visual approach runway. No instrument approach improvements are proposed for the crosswind runway.

  Recommendation: **The airport currently controls (in fee or easement) all of the property within the Runway Protection Zones (RPZs) required for the existing and future instrument approaches. This control should be maintained in the future.**

Taxiway System

The existing taxiway system at the airport provides efficient routing for taxiing aircraft between the runway system and various landside use areas on the airport, in consideration of present activity levels. The airport currently has a full parallel taxiway system serving the north side of Runway 9/27 (Taxiway A), and a partial parallel taxiway system located on the east side of Runway 17/35 (Taxiway B). Because Runway 17/35 is the airport's primary runway, serving it with a full parallel taxiway is particularly important.

> ***Recommendation:*** **Extend Taxiway B to the north to provide a full parallel taxiway system on the east side of Runway 17/35.**

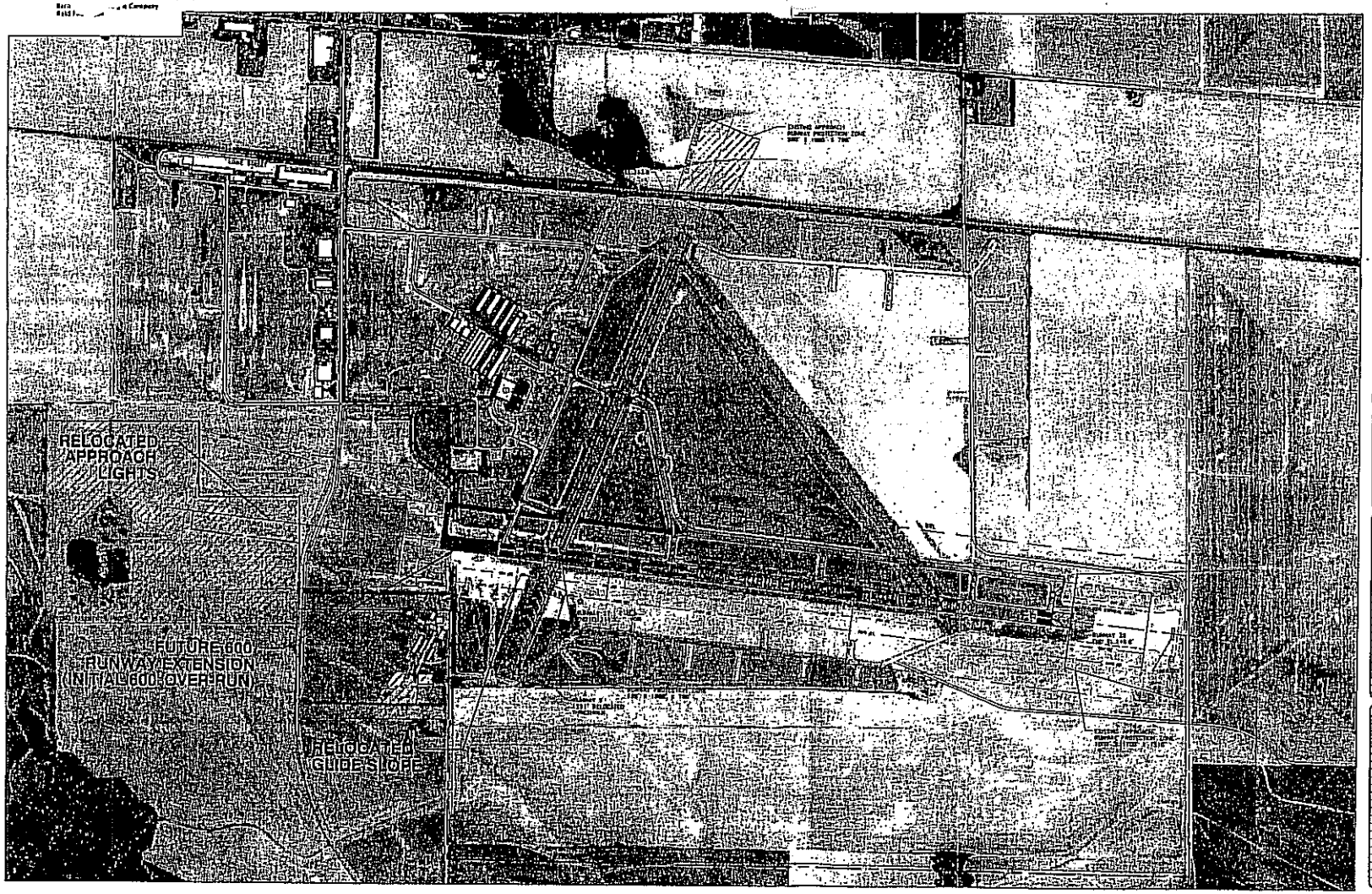
Runway Length

The existing runway lengths provided at Corvallis Municipal Airport (5,900 feet for Runway 17/35 and 3,345 for Runway 9/27) are adequate to accommodate the majority of the existing demand. However, in order to regularly accommodate operations by air carrier charter aircraft, a runway extension for the main runway is required (a length of 6,500 feet is minimum and 7,000 feet would be preferred).

Two alternatives have been illustrated with regard to the extension of Runway 17/35. These alternatives are presented in the following figures, D1 and D2, entitled *AIRSIDE DEVELOPMENT PLAN ALTERNATIVE ONE* and *AIRSIDE DEVELOPMENT PLAN ALTERNATIVE TWO.*

Alternative One indicates an extension of 600 feet to the north. This extension would initially be constructed as overrun, with a second phase being the conversion of this overrun into full use runway pavement. In addition to this northerly extension, Alternative Two indicates that the runway will also be extended 500 feet to the south, bringing the ultimate proposed runway length to 7,000 feet.

> ***Recommendation:*** **After discussion with City of Corvallis staff, the Master Plan Update's study group, and the Federal Aviation Administration, it is recommended that the ultimate runway configuration for the airport should be as illustrated in Alternative Two (programming to protect for an extension of the main runway to the north and an extension on the south). Therefore, Alternative Two represents the Conceptual Airside Development Plan for the airport. Please refer to Figure D7 at the end of this chapter for a comprehensive illustration of the airport's long-term development concept.**



ALTERNATIVE LEGEND

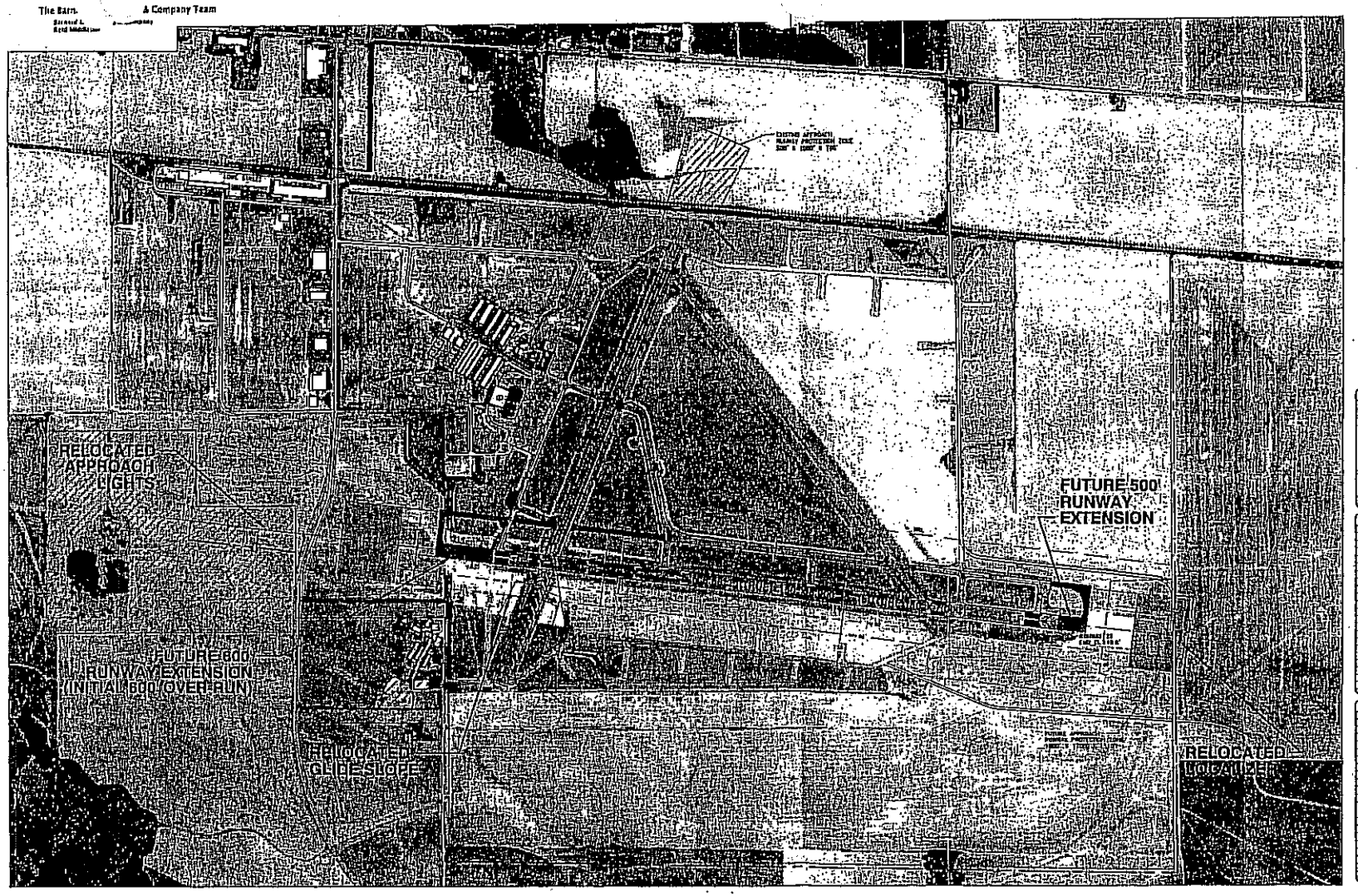
FUTURE RUNWAY/ TAXIWAY PAVEMENT

FUTURE RSA/OFA

BUILDINGS

LAYOUT PLAN LEGEND

Figure D1 ***Airside Development Plan***
Alternative One



ALTERNATIVE LEGEND

FUTURE RUNWAY/ TAXIWAY PAVEMENT

FUTURE RSA/OFA

BUILDINGS

LAYOUT PLAN LEGEND

Figure D2 Airside Development Plan
Alternative Two

Landside Development Considerations, Alternatives, and Recommendations

Introduction

With the framework of the airport's ultimate airside development identified, concepts involving the placement of landside facilities can now be analyzed. The overall objective of the landside development at the airport is the provision of facilities, which are conveniently located and accessible to the community and which accommodate the specific requirements of airport users. The concepts for landside development at the airport are presented below.

New Air Traffic Control Tower

An additional task identified during the alternative discussion for this master planning effort was the need to spot potential sites for a new air traffic control tower (ATCT). It should be noted that the number of aircraft operations and passenger enplanements at the airport would need to increase extraordinarily to justify the construction of an ATCT. The siting requirements for an ATCT facility are stringent with regard to sight lines to the aircraft operating surfaces, height of structure, and direction of view. Because of this, there are very few appropriate sites available. It is preferable to minimize the need for ATCT personnel to look into the sun; therefore, a site on the south side of airport property would be best.

Because of the undeveloped nature of the south side of the airport, and its topographic flatness, it appears that an ATCT facility could be programmed in the area south of Runway 9/27 and east of Runway 17/35.

Aviation Use Facility Development Areas

Concepts for the development of other aviation use areas at the airport include considerations for passenger terminal facilities, various types of general aviation aircraft storage facilities (i.e., t-hangars, executive hangars, corporate hangars, FBO hangars, etc.), and aircraft maintenance facilities. The following paragraphs provide an explanation of the development needs considerations for each of these functions.

Aviation Use Facility Development Area (east of Runway 17/35 and north of Runway 9/27). The facility requirements documentation presented in the previous chapter indicates that the aviation use facilities which are likely to be needed during the twenty-year planning period covered in this Master Plan ~~Update~~, can be contained in the vicinity of the existing terminal area (east of Runway 17/35 and north of Runway 9/27).

This area is currently developed with a variety of hangar types (FBO, aircraft maintenance, corporate, executive, and T-hangars), along with passenger terminal facilities, and airport support facilities (fuel storage, maintenance, etc.). Because of the existing infrastructure (roadways, taxiways, utilities, etc.) serving this area, from an economic/cost of development standpoint, it will be critical to make efficient use of the existing terminal area for future aviation facilities.

Forecast demand for additional aircraft storage hangars, corporate hangars, FBO facilities, and passenger terminal facilities indicates that there are some significant considerations about how future landside facilities should be arranged within this area. To begin the process to layout future facilities in this area, several alternatives were conceived. These alternatives are graphically presented in the following illustrations (Figures D3, D4, and D5) entitled *TERMINAL AREA PLAN – ALTERNATIVE ONE, ALTERNATIVE TWO, AND ALTERNATIVE THREE.*

The issues that will drive the aviation-use landside development plan are complex and include:

- Adequate taxiway access to hangar development areas (the provision of two taxiway routes to each hangar is recommended).
- The provision of adequate roadway access and parking - this is especially important with regard to passenger terminal facilities.
- The provision of adequate aircraft parking adjacent to the various development areas.
- Securing the aircraft operating surfaces by excluding accidental incursions by automobiles.
- Minimizing the distance aircraft must taxi between landside use areas and various points on the runway system.

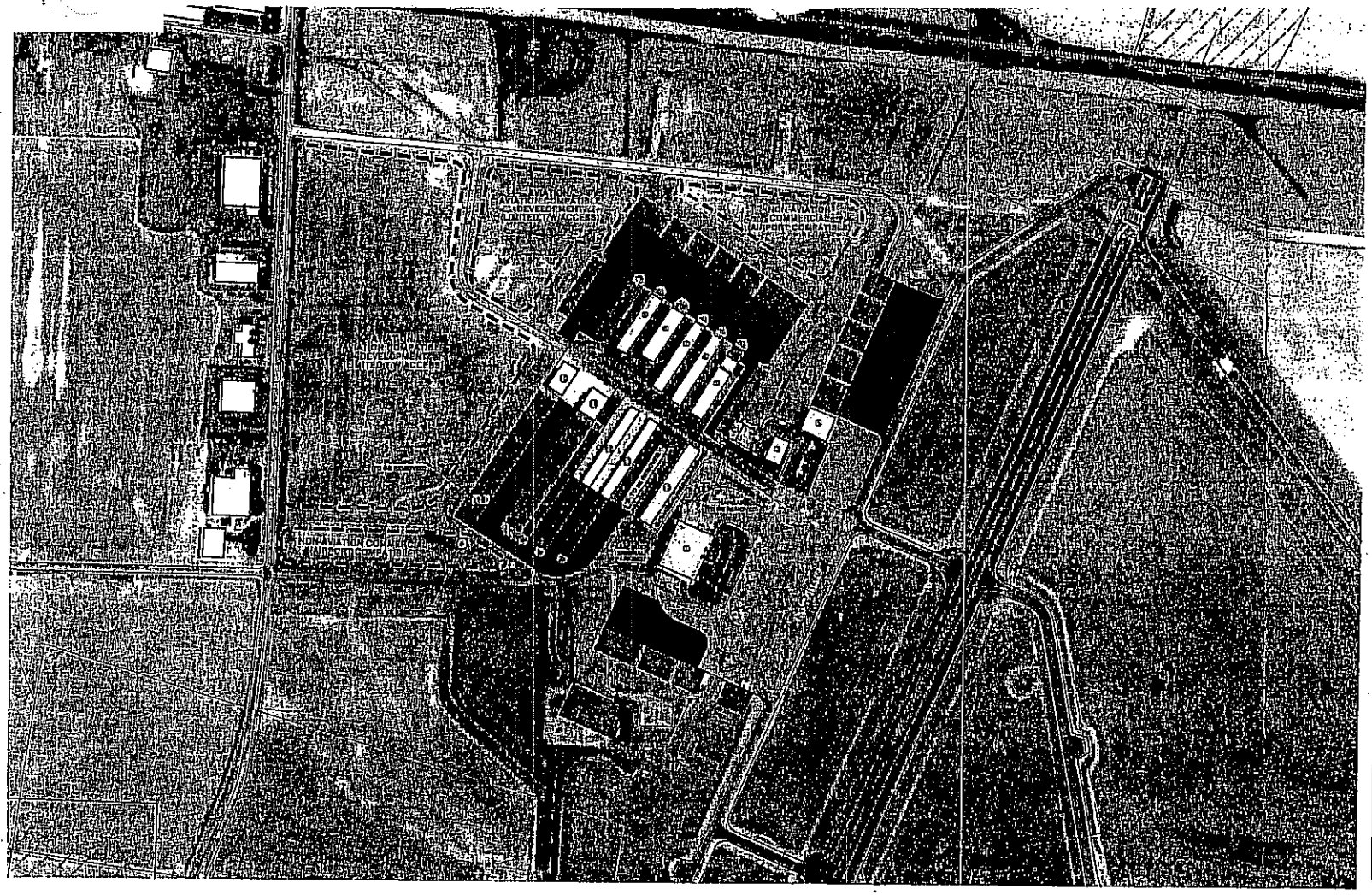


Figure D3 ***Terminal Area Plan***
Alternative One

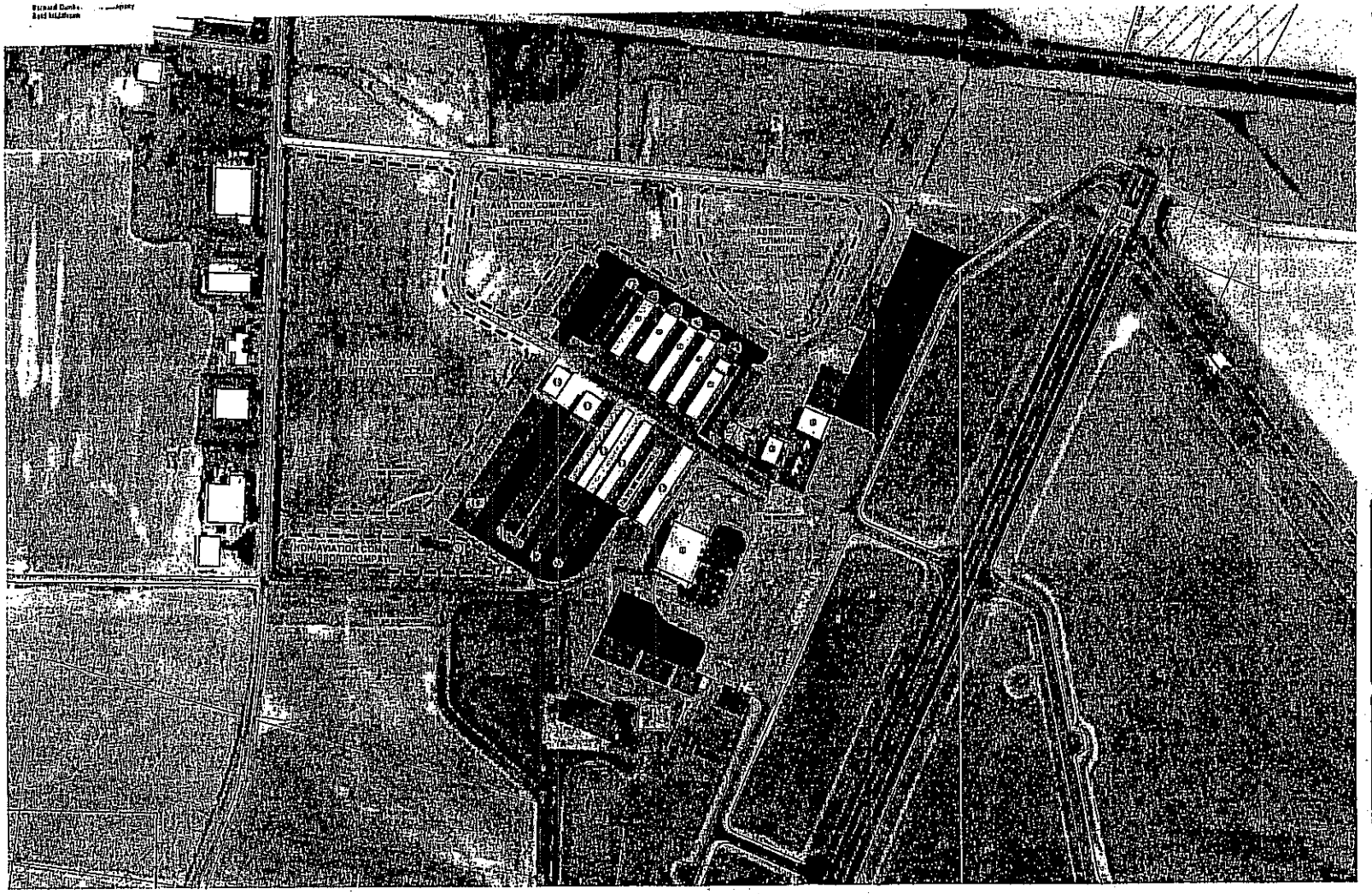
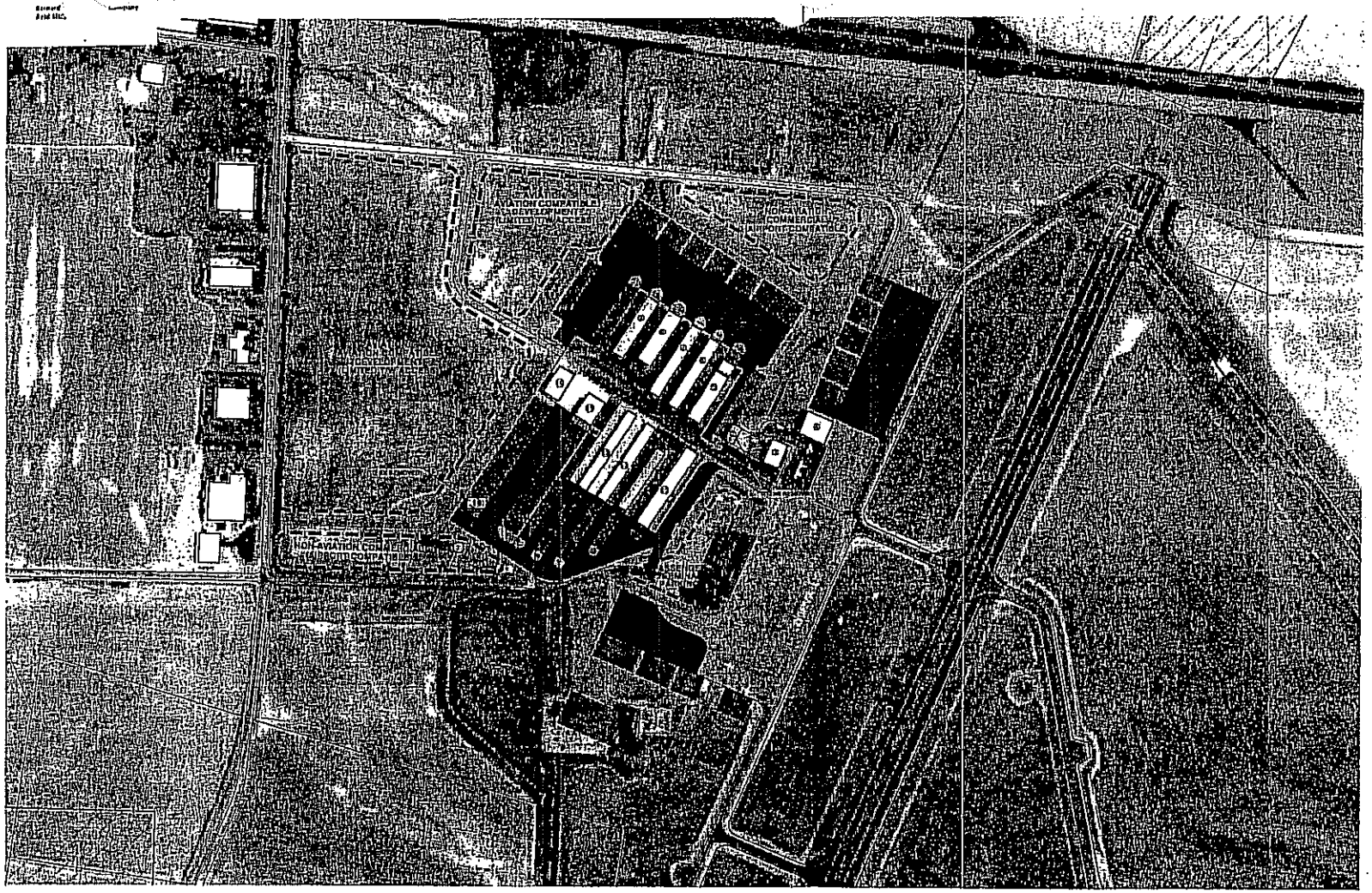


Figure D4 ***Terminal Area Plan***
Alternative Two



ALTERNATIVE LEGEND

- FUTURE APRON/ TAXIWAY PAVEMENT
- FUTURE AVIATION USE BUILDINGS (HANGAR USE ONLY UNLESS OTHERWISE NOTED)
- FUTURE PARKING/ ROADWAY

BUILDINGS

NO.	DESCRIPTION	SQ FEET
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
A		
B		
C		

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
RUNWAY/TAXIWAY PAVEMENT		
RUNWAY MARKINGS		
RUNWAY PROTECTION ZONE		
RUNWAY OBJECT FREE AREA		
RUNWAY SAFETY AREA		
RUNWAY OBSTACLE FREE AREA		
RUNWAY BLAST PAD		
RUNWAY MARKING		
RUNWAY END IDENTIFIER LIGHTS (REIL)		
RUNWAY END IDENTIFIER LIGHTS (REIL)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
VISUAL APPROACH SLOPE INDICATOR (PAPI)		
BLAST PAD / SAFETY AREA		
WINDCONE		
BOUNDARY LIGHTS		
TAXIWAY EDGE MARKING		

Figure D5 Terminal Area Plan
Alternative Three

Recommendation: **Following a lengthy discussion with Master Plan Update Study Committee participants, along with additional input from the City of Corvallis staff and the Federal Aviation Administration, Terminal Area Alternative Three was chosen as the preferred ~~recommended~~ layout. The discussion indicated that the big hangar ~~(Bertea)~~ would eventually reach its useful life and could not be maintained in a cost effective manner. Because of the strategic location of the big hangar, it would be best to plan for its removal. Eventually the big hangar's site should be used for improved terminal facilities and improved taxiway access serving the hangar development area.**

The basic concept is that all areas that can easily be provided with taxiway access should be reserved for aviation-use facilities. Although the forecast of aviation demand does not indicate a need, the area south of Runway 9/27 and east of Runway 17/35 could easily be provided with taxiway access and will be identified as potentially developable for aviation-use faculties.

Aviation Accessible Development Areas

There are several areas on the airport that have good taxiway access and are likely to be used by aircraft on an infrequent basis. Those areas are suitable for businesses that may need to occasionally test or repair aircraft and aircraft equipment.

The area west and southeast of the Runway 17/35 is identified as Aviation Accessible Development (AAD). The area east of the runway has well developed taxiways and will eventually have access to Highway 99W. The area west of the runway also has well developed taxiways and will eventually have access to Airport Avenue. Development in this area should remain aviation related because of its proximity to the runway and taxiway access.

Non-Aviation Use Facility Development Areas

There are several areas on the airport that are not required for runway, taxiway, or approach protection considerations, and are unlikely to be provided with taxiway access in the future. Those areas that cannot be feasibly provided with taxiway access are likely to be used for non-aviation facilities.

The southeast corner of airport property is identified as ~~non-aviation,~~ Airport ~~compatible~~ Development. This area has been identified in the past as having the potential to accommodate a non-aviation use (an Oregon State Patrol training facility). In addition, some ~~all~~ of the area on the west side of Runway 17/35 is best used for non-aviation facilities, although some of the area may contains wetlands and is likely to ~~should~~ remain undeveloped. It should be noted that the majority of

airport property that is west and south of the runway/taxiway object free areas is currently leased for agriculture. Agriculture is an appropriate non-aviation use for airport property. It brings income to the airport and is compatible with the operation of the airport; therefore, the agricultural activity should continue until a "higher and better" use is obtained.

In addition, the industrial/commercial uses north of Airport Road, along with those east of the railroad tracks as discussed in the Airport Industrial Park Master Plan, are appropriate. The land east of Plumley Street has also been identified for non-aviation use, along with the land south of Airport Road, which is directly adjacent to Airport Place.

~~On~~-Airport Land Use Plan and Conceptual Airport Development Plan

The following illustration, entitled ~~*ON-AIRPORT LAND USE PLAN*~~, represents a compilation of the recommendations presented above. The Plan identifies the appropriate land use designations within the Airport Master Plan. It also identifies the uses that are currently allowed under the County's zoning ordinance and the uses that are ultimately desired. The Airport Development (AD) and the Airport Compatible Development (ACD) designations have the same purpose, however the permitted and conditional uses differ. This is because each are currently within a different zoning designation in the County, and are therefore subject to those regulations. Each of the airport land use designations are identified below and include the purpose of the zone, the uses permitted outright, conditional uses, and additional uses that are ultimately desired. The specific uses listed in italics are provided as examples only, and do not represent all of the uses that may be allowed. ~~As can be noted, the *ON-AIRPORT LAND USE PLAN* also identifies future land uses designated in the *Corvallis Airport Industrial Park Master Plan*, published in January 2000. The Industrial Park Master Plan designates the following as "permitted uses" within the various areas:~~

~~Area A~~

~~Industrial – Limited Manufacturing, Intensive Industrial, Technological Production, General Industrial.~~

~~Civic Use Types – Airports, Administrative Services, Parking Services, Essential Services, Public Safety Services, Postal Services.~~

~~Commercial Use Types – Business Support, Financial and Insurance, Professional and Administrative, Research, Eating and Drinking Establishments, Fast Food, Automotive Equipment, Fuel Sales, Lodging, Laundry, Storage, Airport Related, Physical Fitness.~~

~~Area A-SW~~

~~Commercial Use Types – Aircraft Related Industry, Business Support, Financial and Insurance, Professional and Administrative, Research, Eating and Drinking Establishments, Fast Food, Automotive Equipment, Fuel Sales, Lodging, Laundry, Storage, Airport Related, Physical Fitness.~~

~~Area B~~

~~Industrial – Limited Manufacturing, Technological Production, General Industrial, Intensive Industrial.~~

~~Area C~~

~~Industrial (the following use categories are permitted, provided the specific uses have need for aircraft access) – Limited Manufacturing, Technological Production, General Industrial uses that support airport functions and have minimal noise impacts.~~

The following uses are permitted outright within all of the land use designations noted below:

Uses Permitted Outright

1. Air Traffic Control Towers
2. Airport Navigational Equipment

Commercial Aviation Facilities (CAF)

Purpose

To provide facilities which are conveniently located and accessible to the public and which accommodate the specific requirements of airport users.

Uses Permitted Outright

1. Transportation Terminals

Commuter Airlines
Fixed Base Operators (FBO)
Freight Terminals
Specialized Aviation Service Operations (SASO)

Accessory Uses

Aircraft Maintenance
Equipment Sales/Rentals

Food and Beverage Retail Sales
Retail Fueling Services

2. Warehouses
   Aircraft Hangars
3. Vocational School
   Flight Training

Additional Uses That Are Ultimately Desired

1. Eating and Drinking Establishments – Sit Down
2. Fast Order Food Establishments
3. Automotive Equipment – Parking (i.e., car rentals)

Limited Aviation Facilities (LAF)

Purpose

To provide safe and secure storage areas for aircraft that are secure, with limited public access, but accessible to airport facilities and services.

Uses Permitted Outright

1. Warehouses
   Aircraft Hangars

Aviation Accessible Development (AAD)

Purpose

To provide facilities which are compatible with airport activities, and are likely to require limited access to the taxiways.

Uses Permitted Outright

1. Airport and related facilities
   Aircraft Hangars
   Aircraft Maintenance
   Flight Training
   Freight Terminals
   Manufacturing
   Warehouses

2. Accessory use or structure
3. Farm Use

Conditional Uses

1. Any use which is not permitted within this zone is allowed by conditional use permit approved by the Planning Official.

Airport Compatible Development (ACD)

Purpose

To provide facilities which are compatible with airport activities, and are unlikely to require taxiway access.

Uses Permitted Outright

1. Research facility, testing laboratory and facility for the manufacturing, processing and/or assembling of products, provided a permit is not required from the Oregon Department of Environmental Quality.
2. Warehouses
3. Vocational Schools

Conditional Uses

1. A research facility, correctional and law enforcement facilities, or testing laboratory or facility for the manufacturing, fabrication, processing or assembly of products which requires a permit from the Oregon Department of Environmental Quality.

Additional Uses That Are Ultimately Desired

1. Eating and Drinking Establishments – Sit Down
2. Fast Order Food Establishments
3. Automotive Equipment – Parking (i.e., car rentals)

Airport Development (AD)

Purpose

To provide facilities which are compatible with airport activities, and are unlikely to require taxiway access.

Uses Permitted Outright

1. Airport and related facilities
   Manufacturing
2. Accessory use or structure
3. Farm Use

Conditional Uses

1. Any use which is not permitted within this zone is allowed by conditional use permit approved by the Planning Official.

Runways & Taxiways (RT)

Purpose

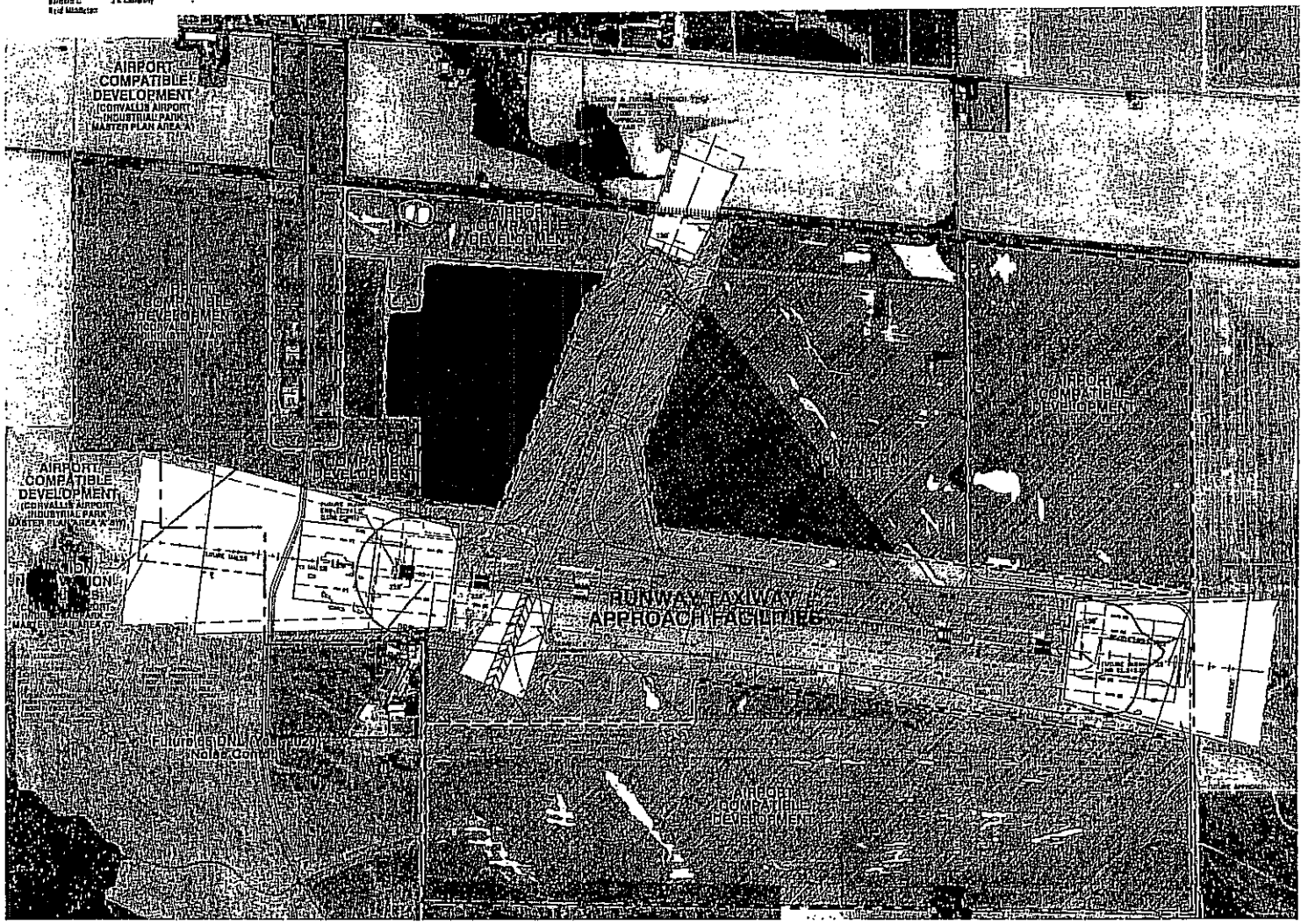
To provide for secure, safe and efficient routing, taxiing, aviation, take-off, and landing facilities for aircraft.

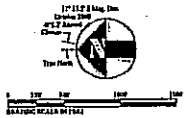
Uses Permitted Outright

1. Airport and Related Facilities
   Runways
   Taxiways

The future recommendations for airside, ~~and~~ landside, and terminal facilities have been combined and are graphically presented in the following figure entitled *CONCEPTUAL DEVELOPMENT PLAN*. This plan shall be used as a guide for locating future facilities within the terminal area. An Airport Design Review Committee or similar body shall review new facilities at the airport and shall use the *CONCEPTUAL DEVELOPMENT PLAN* as a guide in determining appropriate improvements.

~~It should be noted that the wetland areas identified on the ON-AIRPORT LAND USE PLAN are currently being reviewed in a separate study. It is expected that following~~





LAND USE LEGEND

- AVIATION FACILITIES
- AVIATION/NON-AVIATION FACILITIES
- AVIATION COMPATIBLE DEVELOPMENT
- AIRCRAFT OPERATIONS PROTECTED AREA
- RUNWAY PROTECTION ZONE
- WETLAND REQUIRING SURVEYING AND MAPPING
- FARMED WETLAND
- 65 DNL CONTOUR (YEAR 2002)

Figure D6 On-Airport Land Use Plan

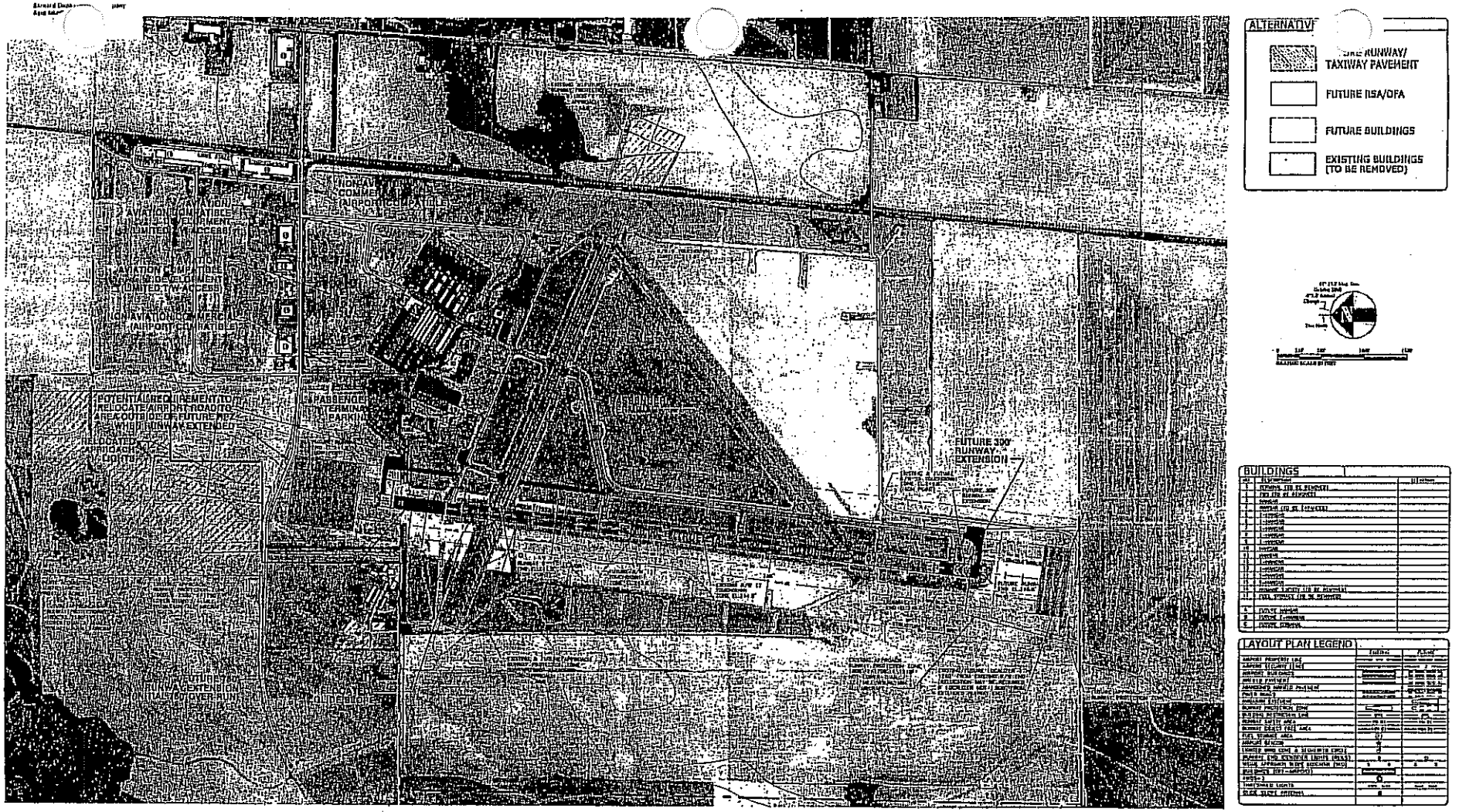


Figure D7 **Conceptual Development Plan**

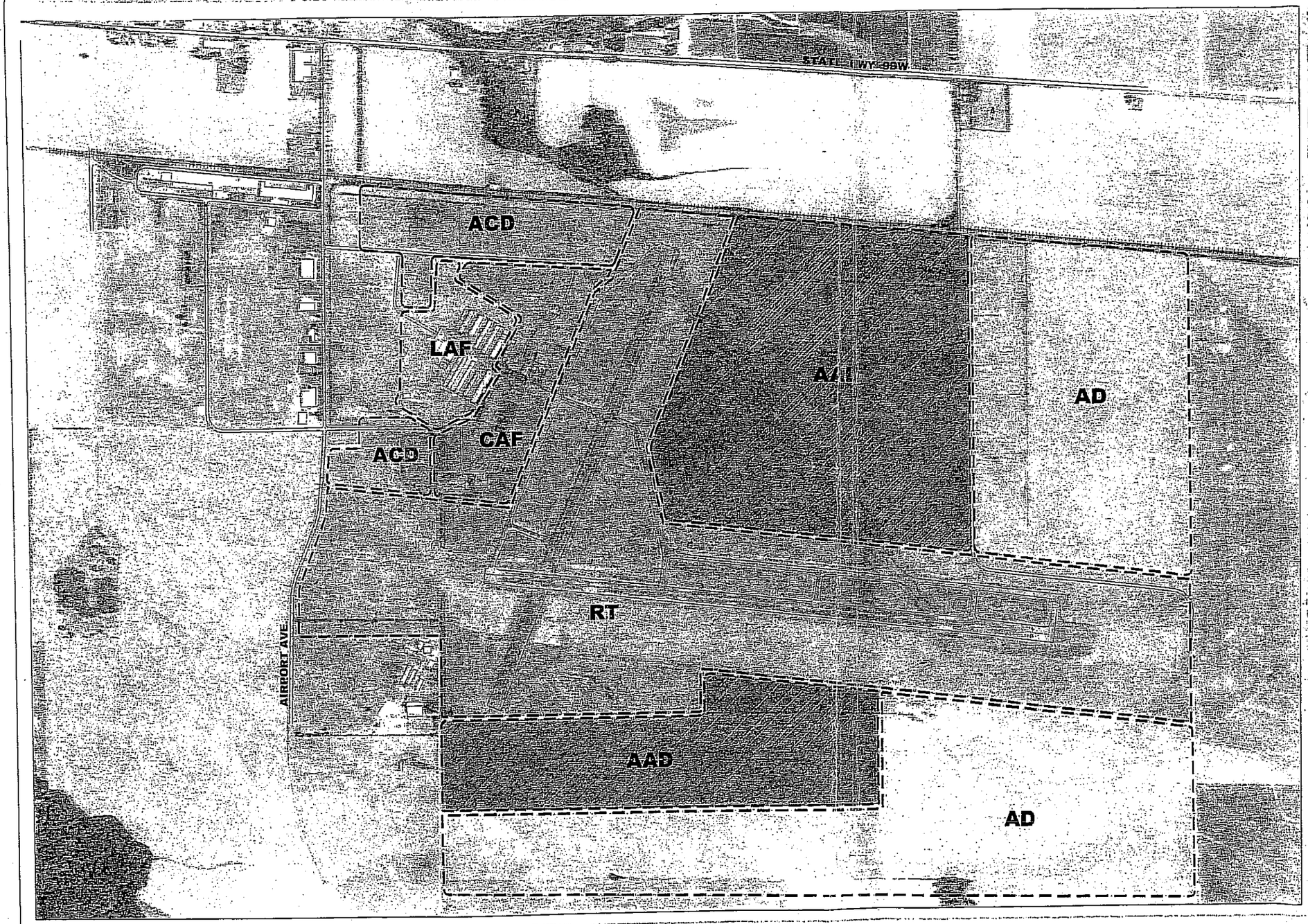
~~the completion of the current wetlands study, there will be very little existing wetland area identified on airport property.~~

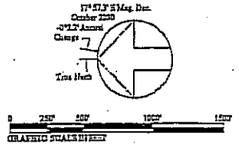
Also, please note that the recommendation for the extension of Runway 17/35 has been refined from the information provided in the previous alternative illustrations. Additional input from City Staff and Study Committee Members identified that the most cost effective way to achieve an ultimate length near 7,000 feet would be to extend the runway as far as possible to the north without the runway safety area or object free area crossing Airport Road (an extension of approximately 750 feet), along with an extension to the south that would keep the runway safety area and object free area on existing airport property (an extension of approximately 300 feet). With the proposed extension to the south and the proposed extension to the north, the ultimate runway length identified for Runway 17/35 is 6,950 feet.

Wetlands (From page E-10)

Wetlands are basically defined as areas inundated by surface or groundwater, with a frequency sufficient to support vegetation or aquatic life requiring saturated or seasonally saturated soil conditions for growth and reproduction. The US Army Corps of Engineers has been contacted regarding the presence of jurisdictional wetlands that would be impacted by the proposed projects of this Master Plan Update. Presently, this agency has not responded, but any airport development requiring the discharge of dredged or fill material into jurisdictional wetlands will require a Department of the Army permit pursuant to Section 404 of the Clean Water Act.

The Oregon Division of State Lands requires a permit if 50 cubic yards or more of material is filled, removed, or altered in wetlands or other state waters. This agency indicates that wetlands are present throughout the general airport area (see letter in Appendix). Before development occurs at the airport, it will be evaluated to determine if a wetlands delineation should ~~will~~ be performed to ensure compliance with State and Federal wetland regulations. ~~and included in this Master Plan Update. This delineation will indicate the potential jurisdictional wetlands or waters of the United States present in the development area. Jurisdictional wetland areas will need to be further delineated and impacts calculated through the permit review process with both the Corps of Engineers and the Oregon Division of State Lands before implementing airport development.~~

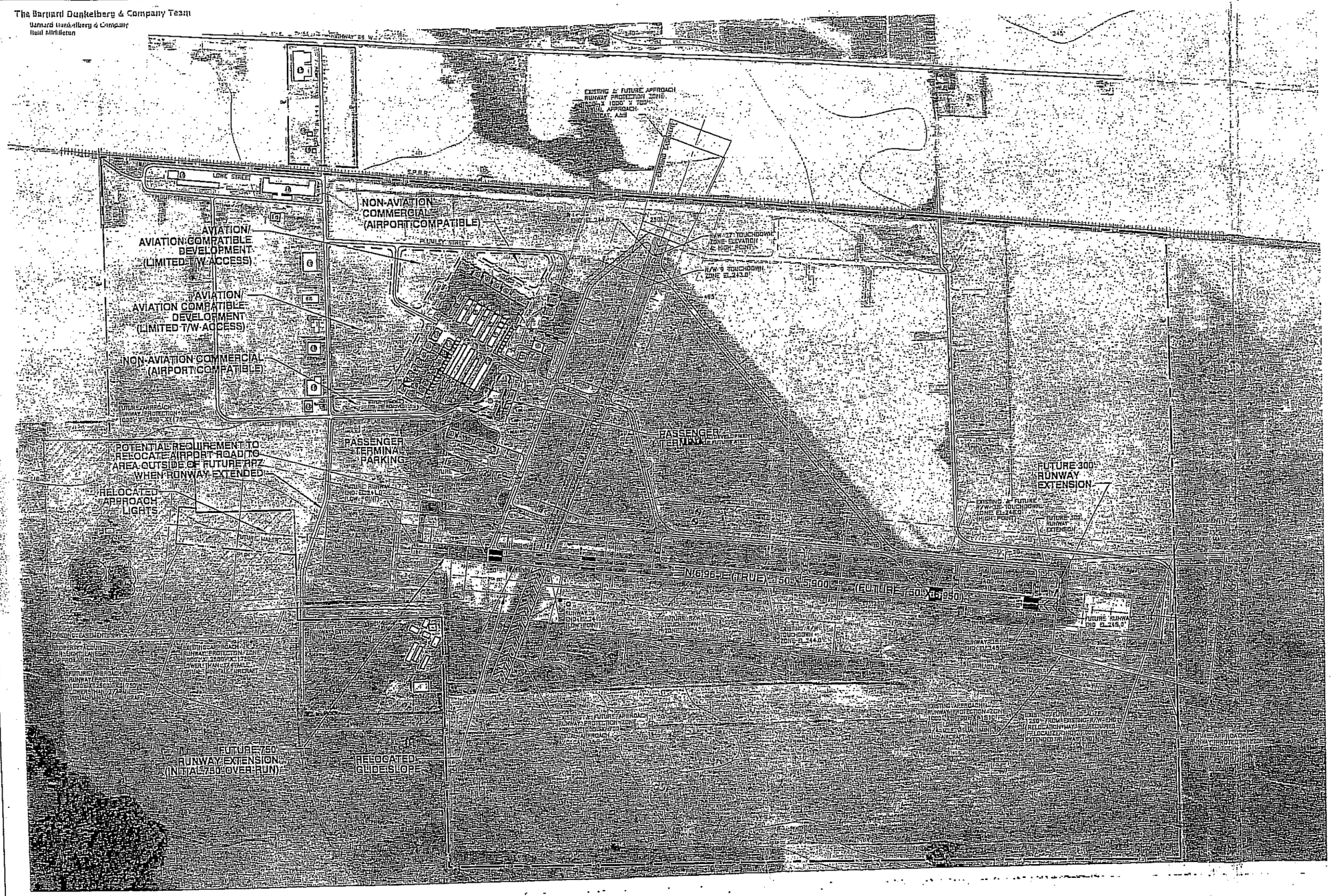




LAND USE LEGEND

- COMMERCIAL AVIATION FACILITIES
- LIMITED AVIATION FACILITIES
- AVIATION ACCESIBLE DEVELOPMENT
- AIRPORT COMPATIBLE DEVELOPMENT
- AIRPORT DEVELOPMENT
- RUNWAY/TAXIWAY

Figure D6 & F10 Airport Land Use Plan



ALTERNATIVE LEGEND I

- FUTURE RUNWAY/ TAXIWAY PAVEMENT
- FUTURE RSA/OFA
- FUTURE BUILDINGS
- EXISTING BUILDINGS (TO BE REMOVED)

17° 13.3' Mag. Dec. (2002) 7°12.3' Annual Change

True North

0 375' 750' 1500' 3000'
GRAPHIC SCALE IN FEET

BUILDINGS

NO	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

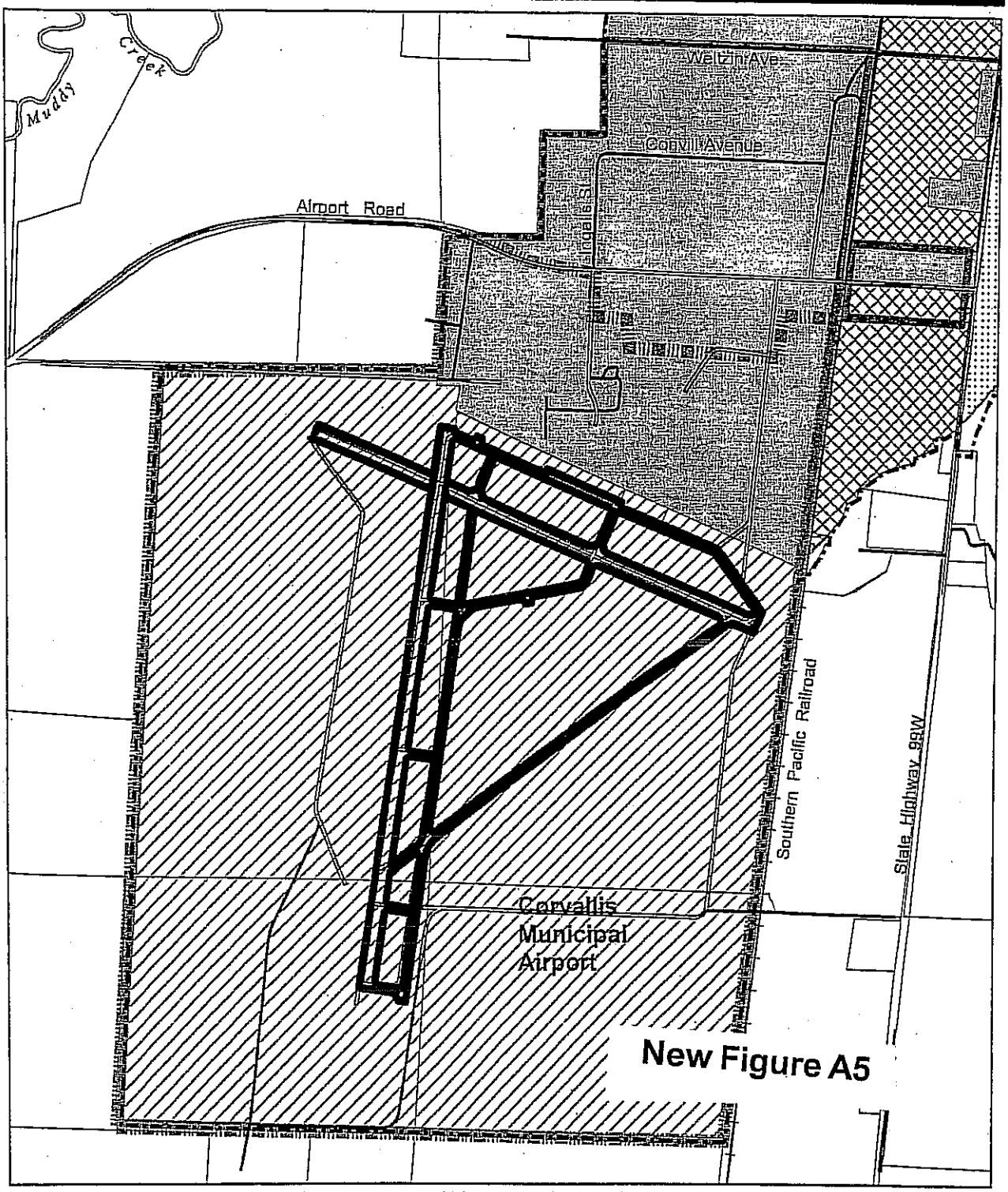
LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (T)	RSA (T)
RUNWAY OBJECT FREE AREA	ROFA (T)	ROFA (T)
FUEL STORAGE AREA	(F)	
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REIL'S)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS - (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D7 Conceptual Development Plan


NON-AVIATION
COMMERCIAL
(AIRPORT COMPATIBLE)
PLUMLEY STREET
PARKING
TO BE RELOCATED
WATER TOWER
(TO BE REMOVED)
AIRPORT PLACE
PASSENGER
TERMINAL
PARKING
FUTURE
BEACON
FUTURE RUNWAY 17
END EL. 241.0
(LOW POINT)
EXISTING RUNWAY 17
END EL. 241.0
(LOW POINT)
MALSR
250'
50'
LB-737
LW-1900

Existing County Zoning Designations



Airport Property Boundary — Urban Growth Boundary

Airport Master Plan Sub-Parcel

Zoning Designations

- Exclusive Farm Use
- Industrial
- Industrial Flexible Industrial
- Public
- Urban Residential

N

0 0.05 0.1 0.2 0.3 0.4 Miles

CHAPTER 7.0 AIR

7.10 INTRODUCTION

The Corvallis Municipal Airport is located approximately five miles south of the City's business center near Highway 99W. The City initiated land acquisition for the airport in 1939, with the purchase of 491 acres prior to World War II. When the war broke out, the U. S. Army Corp of Engineers assumed responsibility for construction of what became the Corvallis Navy ~~Army~~ Air Base. Following the war, the air base was returned to the City's control with two restrictions - the base must remain in public use, and the Federal government has the right to mine any fissionable material that may be present on the site. Air-carrier service was provided at the airport between 1947 and 1973, and Pacific Air Commuter Service started service between Corvallis and Portland on July 18, 1994. Pacific Air terminated service on April 15, 1995, due to under capitalization. Harbor Air, a commuter airline based in Gig Harbor, Washington began air service to Corvallis, Newport and Portland in July 1999. They were under capitalized and even though there was interest and a growing demand in both Corvallis and Newport, Harbor terminated their service in November 2000. Corvallis and Newport worked together in a market study and the introduction of a "Travel Bank" where the communities work in partnership with the airline in marketing the service. The study shows a strong market and good support from the communities that will be used in acquiring another airline.

The Corvallis Municipal Airport Master Plan (updated in 2001 and again in 2003) is the primary source of information for this element of the Corvallis Transportation Plan and is adopted by reference. This document identifies Benton County as the service area for the Corvallis Municipal Airport.

Corvallis Municipal Airport is a General Aviation Airport and handles all types of aviation except Federal Aviation Administration ~~Civil Aeronautics Board~~ -certified air carrier services (fixed-route air transportation).

7.20 VISION

The vision for the Corvallis Municipal Airport is to provide a facility that meets the needs of individual and corporate users and that will be adequate for commuter-scale air carrier service.

7.30 EXISTING CONDITIONS

7.30.10 OPERATIONS

The Corvallis Municipal Airport is managed by the Public Works Department. Maintenance is provided by private contracts. The Airport Fund is an enterprise fund, meaning that airport operations, maintenance, and capital improvements (except when state grants are available for local match on FAA projects) are totally funded from airport revenue. Audited resources for FY 2001-02 ~~1999-00~~ were $684,115 ~~$795,983~~, and expenditures were $386,394 ~~$497,394~~.

There were 145 ~~124~~ fixed-wing aircraft and 16 ~~8~~ helicopters based at the Corvallis Municipal Airport in 2003 ~~1999~~. This number is expected to grow at a rate of 1.8 percent per year. An estimated 85,656 operations (a take-off or a landing) took place in 2000. This activity is expected to increase by a 3.2% growth rate for the first five years of the planning period and a 1.6% growth rate for the remaining planning period.

The Corvallis Municipal Airport has two sets of runways (each direction is a separately numbered runway) numbered 9-27 and 17-35. Runway 9-27 is 3,335 feet long by 75 feet wide. Runway 17-35 is 5,900 feet long by 150 feet wide. Visual and Navigational aids to pilots and other runway design issues are further detailed in the Corvallis Airport Master Plan. Parallel taxiways facilitate aircraft movement to and from the runways and provide adequate access to each runway.

Currently, there are 36 paved tiedowns, 109 T-hangar spaces, and a minimum of 20 other indoor aircraft storage spaces. Aircraft hangars are provided on a "Supply/Demand" basis with the first 10-unit T-hangar being built in 1952, followed by two 10- unit T-hangars built in 1965, and two 12-unit T hangars built in 1983. These first 52 units were built, owned and leased out by the City. More recently, privately owned T-hangars have been built, in 1993 a 10-unit hangar, a 10 unit and 12 ~~13~~-unit built in 1995, a 16-unit built in 1996, and a 7-unit built in 2001. One ~~Two~~ full-service fixed-base operators provides commercial general-aviation services such as air charter, flight instruction, aircraft maintenance, and fueling services. There is also one full service helicopter flight school.

City water and sewer services are provided to the Airport/Industrial Park facility. Telephone service is provided by Qwest Communications; natural gas is provided by Northwest Natural Gas; and electrical service is provided by Pacific Power and Light. Corvallis Transit System does not provide service to the airport, as it is outside the city limits.

7.40 FUTURE CONDITIONS

Forecasts of airport use and needs are discussed in depth in Chapter 3 of the Corvallis Municipal Airport Master Plan. In summary, aviation activity at the Corvallis Municipal Airport is expected to grow at approximately the same rate as the general economy. Regional/commuter uses and business uses of aircraft in the general economy are expected to grow faster than the larger, established airlines or personal use.

The number of aircraft based at the Corvallis Airport is expected to grow from the current 145 132 to 193 by the year 2020. Aircraft operations are expected to grow from 85,656 to 127,222 during the same period. This growth presents no capacity problems. State and Federal FAA grants were received by the City to complete the runway extension from 5,065 feet to 5,900 feet during FY 1994-95 and FY 1995-96. The 5,900 foot runway is being proposed to be expanded incrementally to 6,950 feet to accommodate on an unconstrained basis all corporate-type aircraft using or expected to use the facility during the planning period. In FY97-98 the City received Federal FAA grants to narrow Runway 09/27 from 150' to 75' and to overlay the runway surface. This project also included the installation of perimeter security fencing on the north portion of the airport facility and gates on all access routes.

Additional needs identified in the Master Plan include:

- Fencing west, south and east perimeter (security)
- Aircraft Rescue and Fire Fighting Facility
- Taxiway apron pavement, T-hangars and corporate hangars (private)
- Extend Taxiway B to the north from Taxiway B-1 to Taxiway A.
- Taxi Lights Taxiway B and new signs Runway 17/35
- 750' overrun on north end of Runway 17/35
- Expansion of helicopter hangar - ph II (private)
- Storm sewer system improvements (per so Corvallis stormwater master plan)
- Airport Rd Improvements per Industrial Park Master Plan
- New passenger terminal bldg. with parking
- Relocate fuel storage facilities
- Airfield pavement rehab
- Extend Runway 17/35 750 ft to the north
- Extend Taxiway B from Taxiway A north to the new north end of Runway 17/35

7.50 SYSTEM ISSUES

7.50.10 LAND USE

Land use issues surrounding airport facilities are addressed in Chapter 7 of the Corvallis Municipal Airport Master Plan. Generally, these issues have to do with the compatibility of uses related to noise generated by airport activities. No residentially zoned property is located beneath any of the runway approach surfaces. No noise-sensitive uses fall within the 55-decibel day and night noise contour. Occasional complaints are received concerning aircraft noise, but no pattern has emerged to indicate the need for a specific response. Land uses in the vicinity of the airport are primarily agricultural or industrial.

Land use at the airport site is controlled by the Benton County Development Code. The Airport Overlay Zone protects the "imaginary surfaces" (air-space) surrounding the airport from encroachment by tall structures. The City has completed an Airport Industrial Park Development Plan, which identifies the types of development to be sought for city-owned property at the airport industrial site. Some of the proposed uses are not allowed under current county zoning guidelines. The City has assumed zoning administration for permitted uses for the airport and surrounding city-owned property.

7.50.20 FUNDING

As previously indicated, the Airport Fund is an enterprise fund. Airport operations and maintenance are funded out of revenues generated by the airport and its Industrial Park. The larger funding need, however, is capital improvement. The Federal Aviation ~~Aeronautics~~ Administration (FAA) will provide up to a 90 percent grant funding for approved capital improvements identified in the Airport Master Plan. These include safety and airport amenities, but do not include aircraft hangar storage ~~housing~~ or auto parking facilities. Local matching funds are required for the remaining 10 percent. Possible funding sources include:

- Operating Income
- Lease Income
- Revenue Bonds
- General Obligation Bonds
- State Grants (Oregon Aeronautics or Economic Development Divisions)

7.50.30 AIRPORT HIERARCHY

The Federal Aviation Administration administers guidelines and rules concerning airports based on size and use. Airports are placed in groups from A through D. Group A are General Aviation Airports with low numbers of operations primarily by single-engine aircraft. Visual Flight Rules apply. The Toledo Airport is an example.

Group B airports are also General Aviation with moderate numbers of operations, no jets and only occasional light twin-engine aircraft. Visual Flight Rules usually apply. Albany Airport is a Group B airport.

Group C airports are mostly General Aviation with moderate to high numbers of operations, including business jets, heavy twins, and transport aircraft. These airports may have precision or non-precision instrument approaches. The Corvallis Airport falls in this category.

Group D airports are Air Carrier airports with high numbers of total operations and the full range of aircraft, including business jets. Precision approach instrumentation is the norm. Eugene, ~~Salem~~, and Portland International fall within this category.

7.60 AIR POLICIES

7.60.10 EXISTING COMPREHENSIVE PLAN POLICIES

10.8.1. THE CITY SHOULD FURTHER DEVELOP FACILITIES AND SERVICES AT THE CORVALLIS AIRPORT. THE CITY SHALL CONTINUE EFFORTS TO SECURE PERMANENT, SCHEDULED AIR-TAXI SERVICE.

10.8.2. THE CITY SHALL WORK TO INSURE THAT LAND USES SURROUNDING THE AIRPORT BOTH IN AND OUTSIDE OF THE CITY AND UGB ARE DEVELOPED IN A FASHION THAT MAINTAINS THE CITY'S ABILITY TO ENABLE THE AIRPORT TO FUNCTION AS AN IMPORTANT ELEMENT OF THE TRANSPORTATION SYSTEM.

10.8.3 EXPANSIONS OF THE URBAN GROWTH BOUNDARY AND OTHER LAND USE ACTIONS AFFECTING PROPERTY AROUND THE CORVALLIS AIRPORT SHALL FULLY PROTECT AIRPORT FUNCTIONS, VIABILITY, AND EXPANSION POTENTIAL.

These policies, combined with the development with Benton County of airport overlay land use regulations around the airport, carry out the primary requirements of the Transportation Planning Rule for protection of airport operations. Further policies are suggested to help implement the various aspects of the Airport Master Plan effort.

7.60.20 PROPOSED ADDITIONAL TRANSPORTATION POLICIES

a. Future airport development shall be in accordance with the Corvallis Airport Master Plan.

b. The Corvallis Airport Master Plan shall be updated every ten years.

c. All land leases shall be in accordance with FAA regulations, and any potential sale of property in the Airport Industrial Park shall be in accordance with the City of Corvallis Land Disposition Policy as approved by the FAA.

d. Development in the Airport Industrial Park shall be in accordance with the City of Corvallis Airport Industrial Park Development Plan.

7.60.30 IMPLEMENTING ACTIONS

The Corvallis Airport Master Plan, the Corvallis Airport Land Disposition Policy, and the Airport Industrial Park Development Plan shall provide direction for activities at the Airport and the adjacent industrial park.

Figure A1 ***Airport Location Map***

Source: National Geographic—The American Road Atlas, 1998

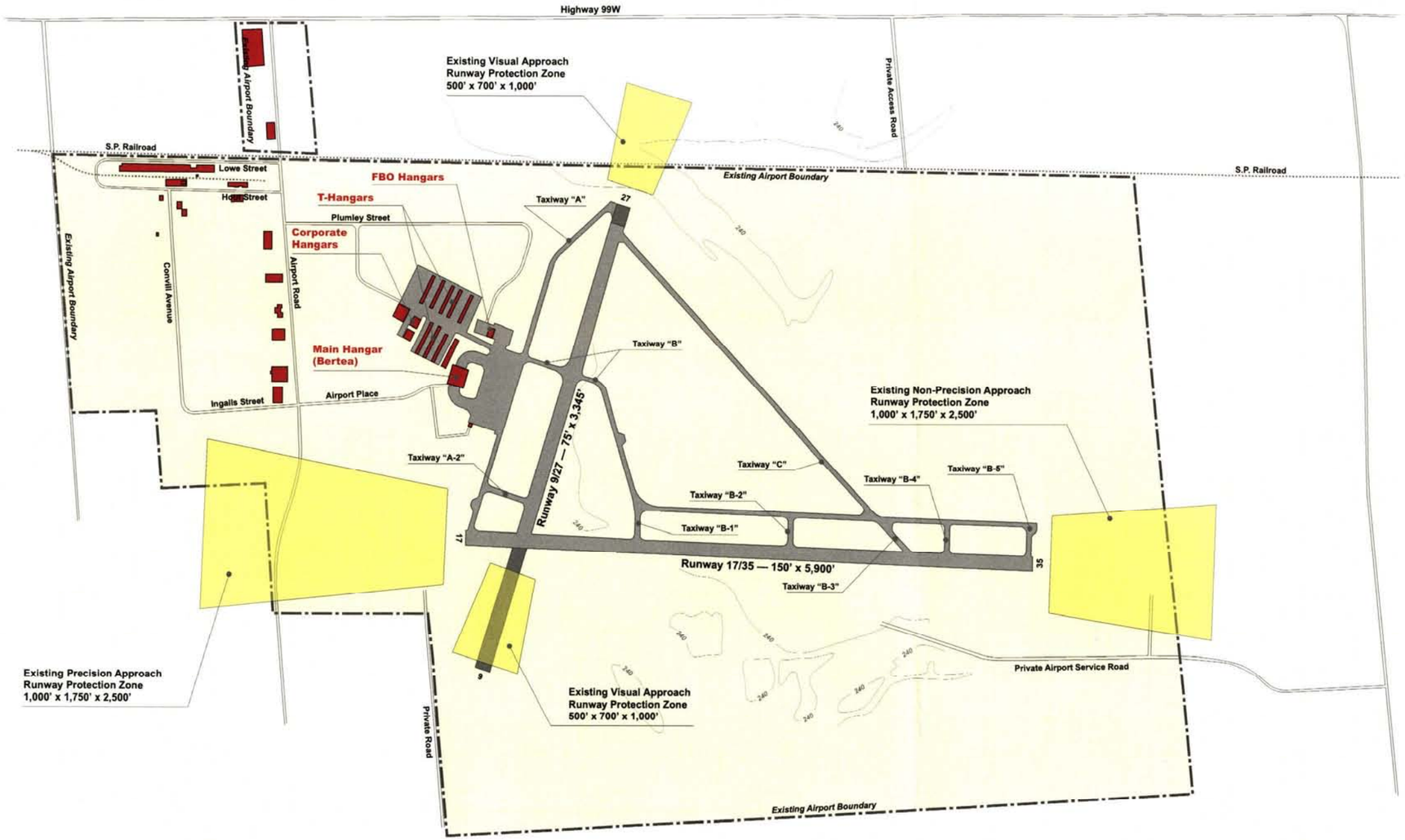


Figure A2 ***Existing Airport Layout***

Approximate Scale 1"=1,250 Feet

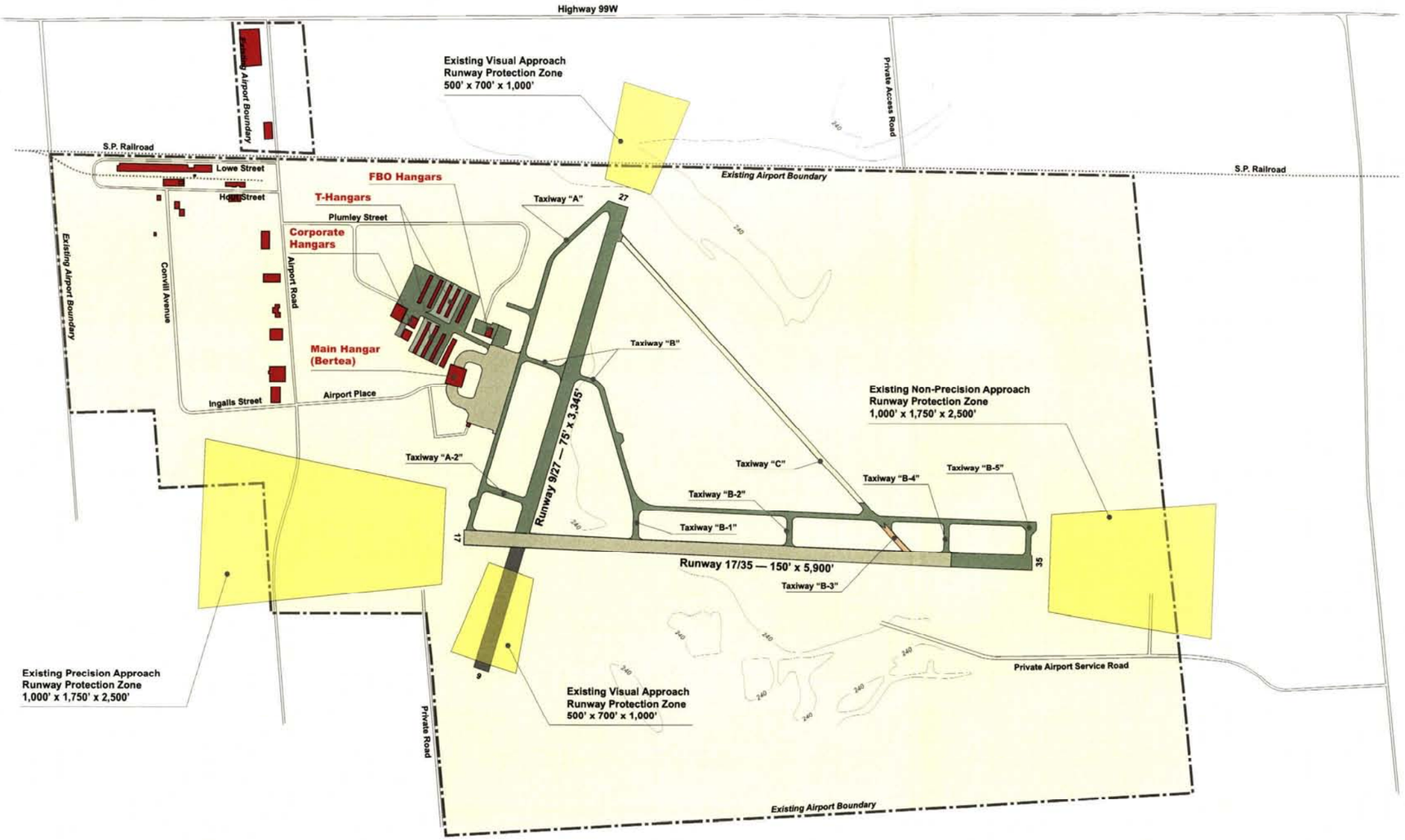


Figure A3 ***Pavement Condition***

- *Excellent*
- *Very Good*
- *Good*
- *Fair*
- *Poor*
- *Very Poor*
- *Failed*

Approximate Scale 1"=1,250 Feet

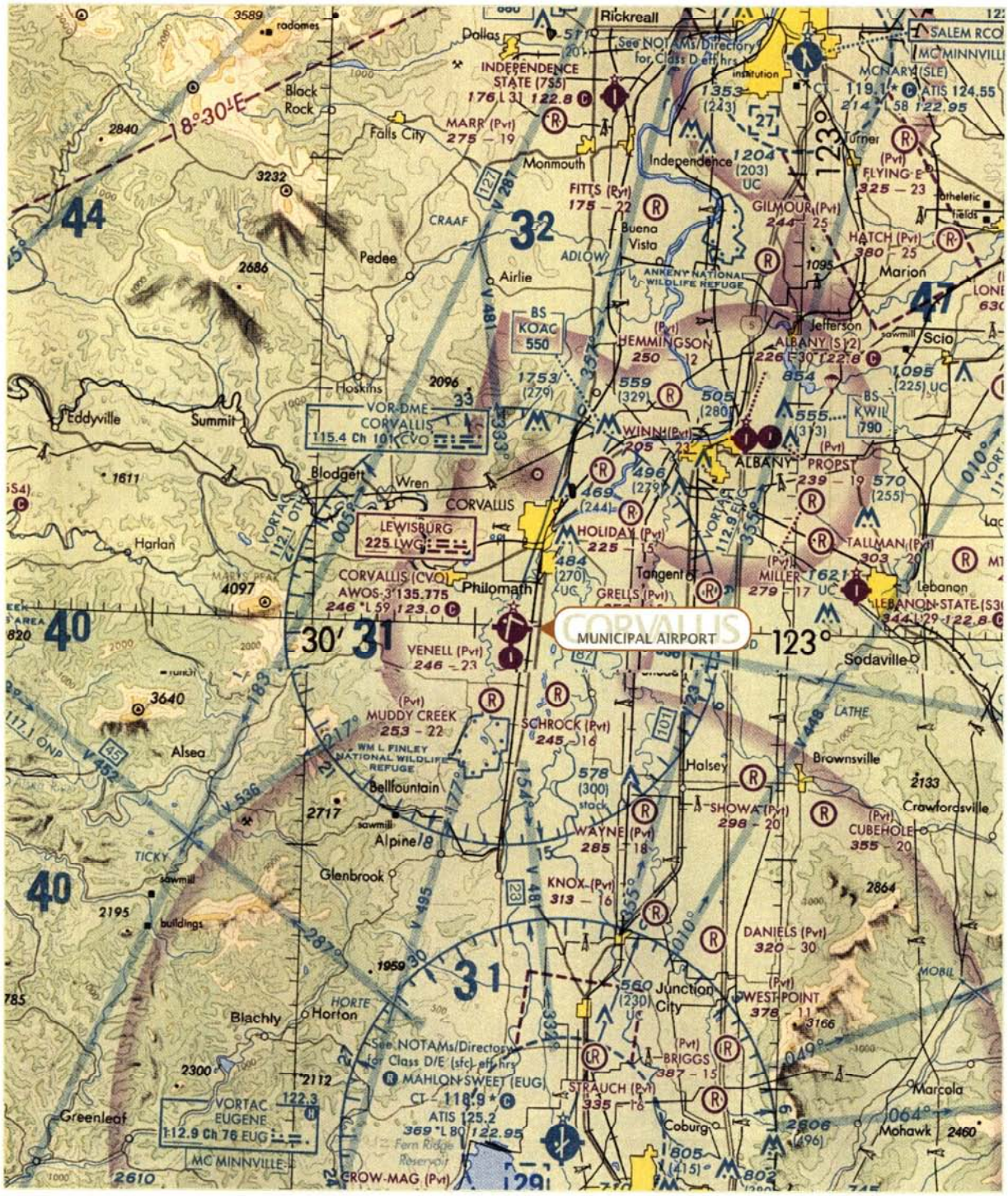
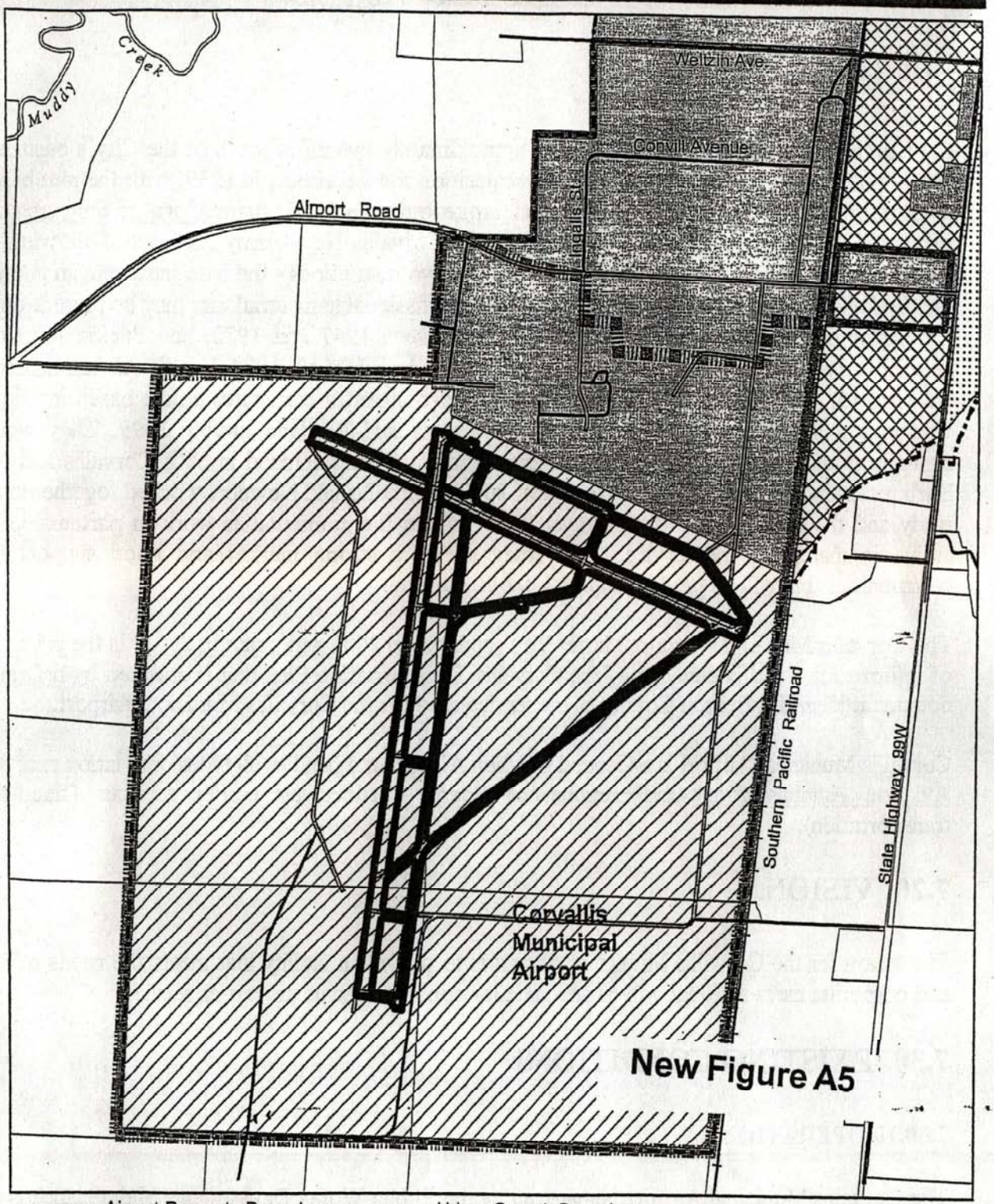


Figure A4 ***Airspace/NAVAIDS Summary***

Source: Seattle Aeronautical Chart, 59th Edition, June 2000
Klamath Falls Aeronautical Chart, 62th Edition, April 2000

Existing County Zoning Designations



New Figure A5

Airport Property Boundary
Urban Growth Boundary
Airport Master Plan Sub-Parcel

Zoning Designations

- Exclusive Farm Use
- Industrial
- Industrial Flexible Industrial
- Public
- Urban Residential

N

0 0.05 0.1 0.2 0.3 0.4 Miles

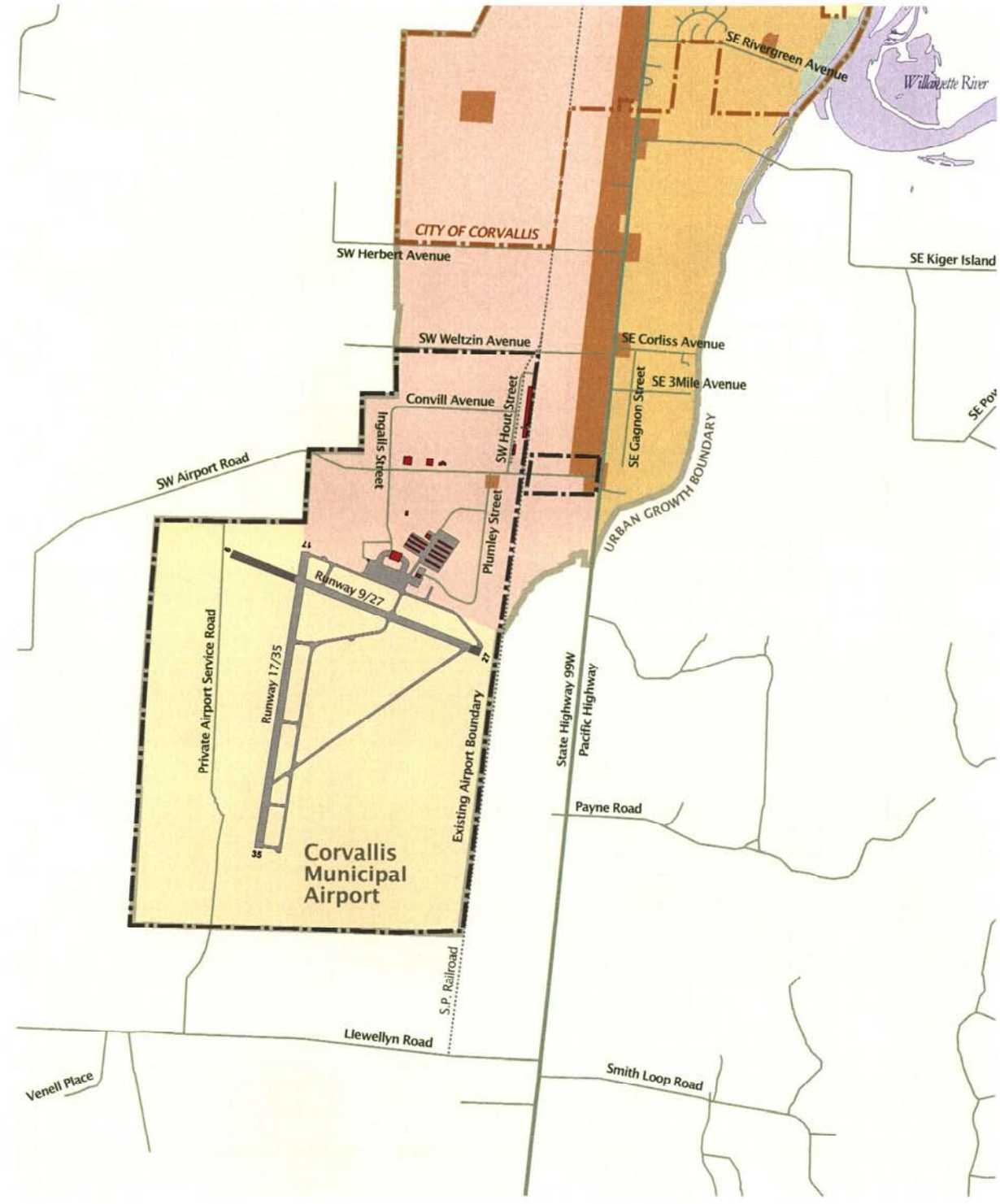
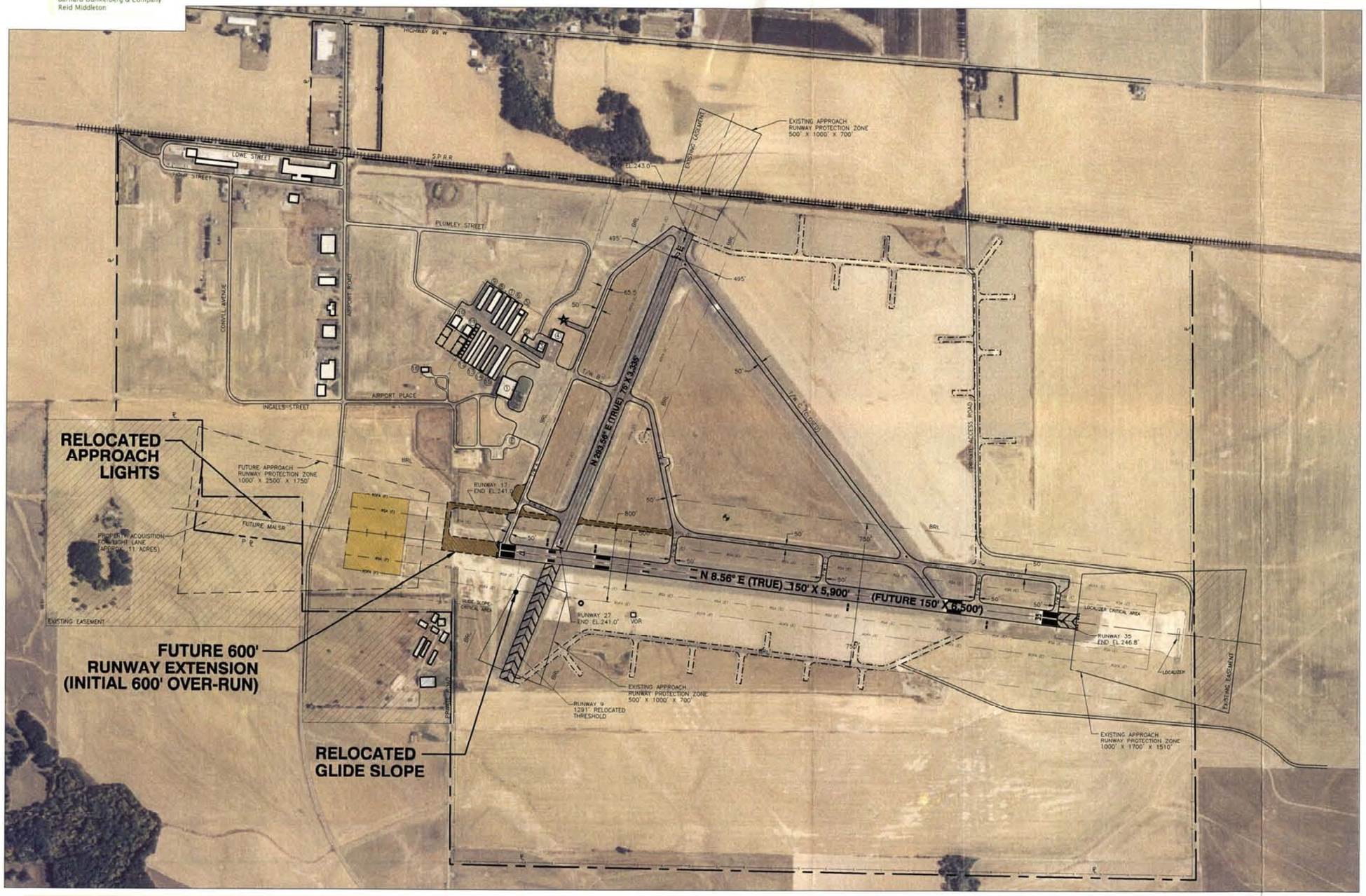


Figure A6 ***Generalized Future Land Use***

- *Airport Boundary*
- *Residential*
- *Office, Commercial, Business Park*
- *Public/Semi-Public*
- *City of Corvallis*
- *Agricultural/Conservation*
- *Industrial*
- *Area Outside of Urban Growth Boundary - Agricutural*
- *Urban Growth Boundary*

Source: Base Map & Future Land Use. ***City of Corvallis Comprehensive Development Plan.***



17° 57.3' Mag. Dec. October 2000 -0°5.2' Annual Change
True North

0 250' 500' 1000' 1500'
GRAPHIC SCALE IN FEET

ALTERNATIVE LEGEND

- FUTURE RUNWAY/ TAXIWAY PAVEMENT
- FUTURE RSA/OFA

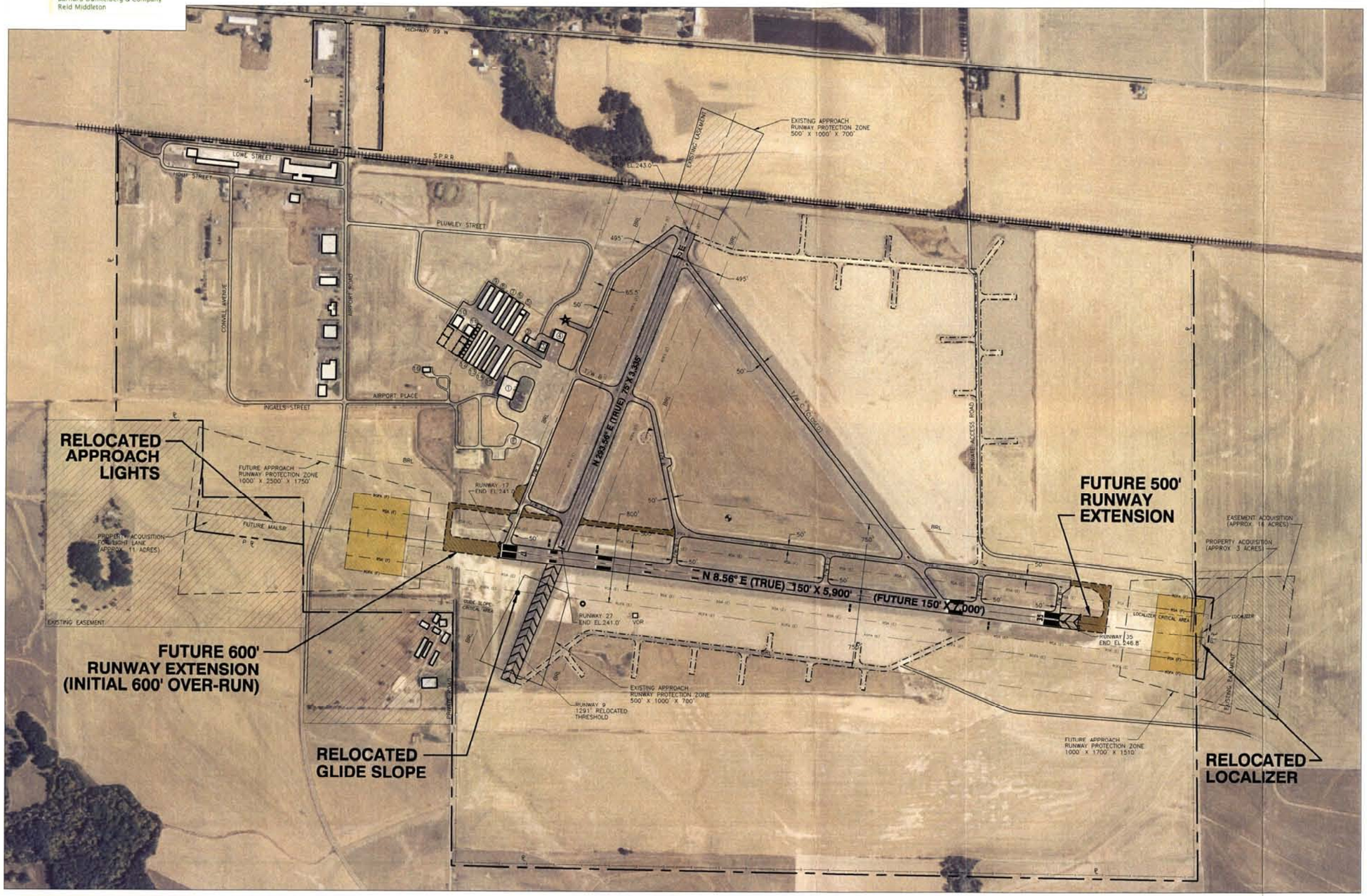
BUILDINGS

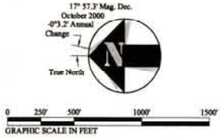
NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D1 ***Airside Development Plan***
Alternative One





ALTERNATIVE LEGEND

- FUTURE RUNWAY/ TAXIWAY PAVEMENT
- FUTURE RSA/OFA

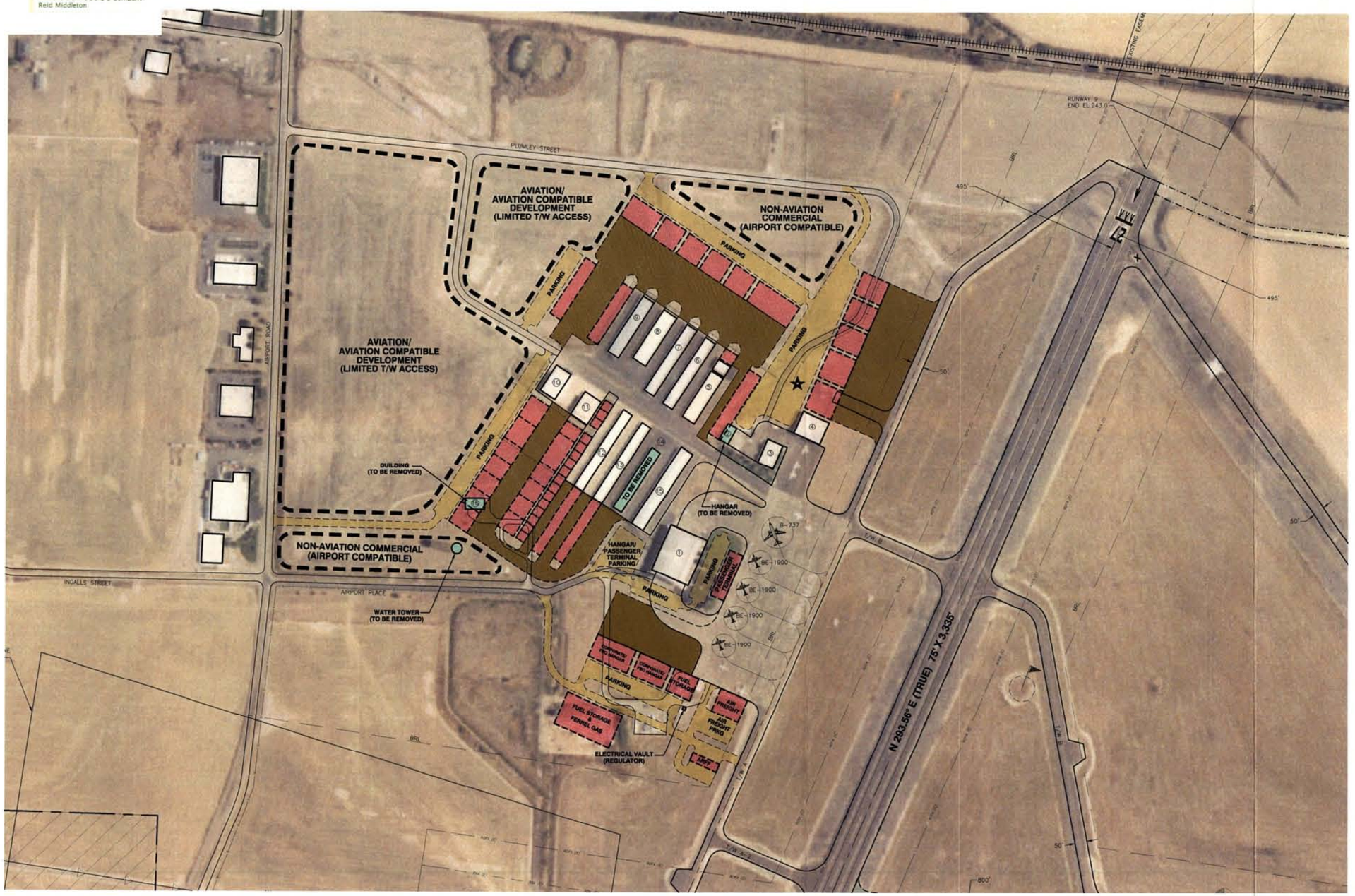
BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D2 ***Airside Development Plan***
Alternative Two



ALTERNATIVE LEGEND

- FUTURE APRON/ TAXIWAY PAVEMENT
- FUTURE AVIATION USE BUILDINGS (HANGAR UNLESS OTHERWISE NOTED)
- FUTURE PARKING/ ROADWAY

17° 57.3' Mag. Dec. October 2000 -0°3.2' Annual Change

True North

0 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA		
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D3 ***Terminal Area Plan***
Alternative One

ALTERNATIVE LEGEND

- FUTURE APRON/ TAXIWAY PAVEMENT
- FUTURE AVIATION USE BUILDINGS (HANGAR UNLESS OTHERWISE NOTED)
- FUTURE PARKING/ ROADWAY

17° 57.3' Mag. Dec. October 2000 -0°3.2' Annual Change
True North

0 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA		
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D4 ***Terminal Area Plan***
Alternative Two

ALTERNATIVE LEGEND

- FUTURE APRON/ TAXIWAY PAVEMENT
- FUTURE AVIATION USE BUILDINGS (HANGAR UNLESS OTHERWISE NOTED)
- FUTURE PARKING/ ROADWAY

17° 57.3' Mag. Dec. October 2000 -0°5.2' Annual Change
True North

0 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

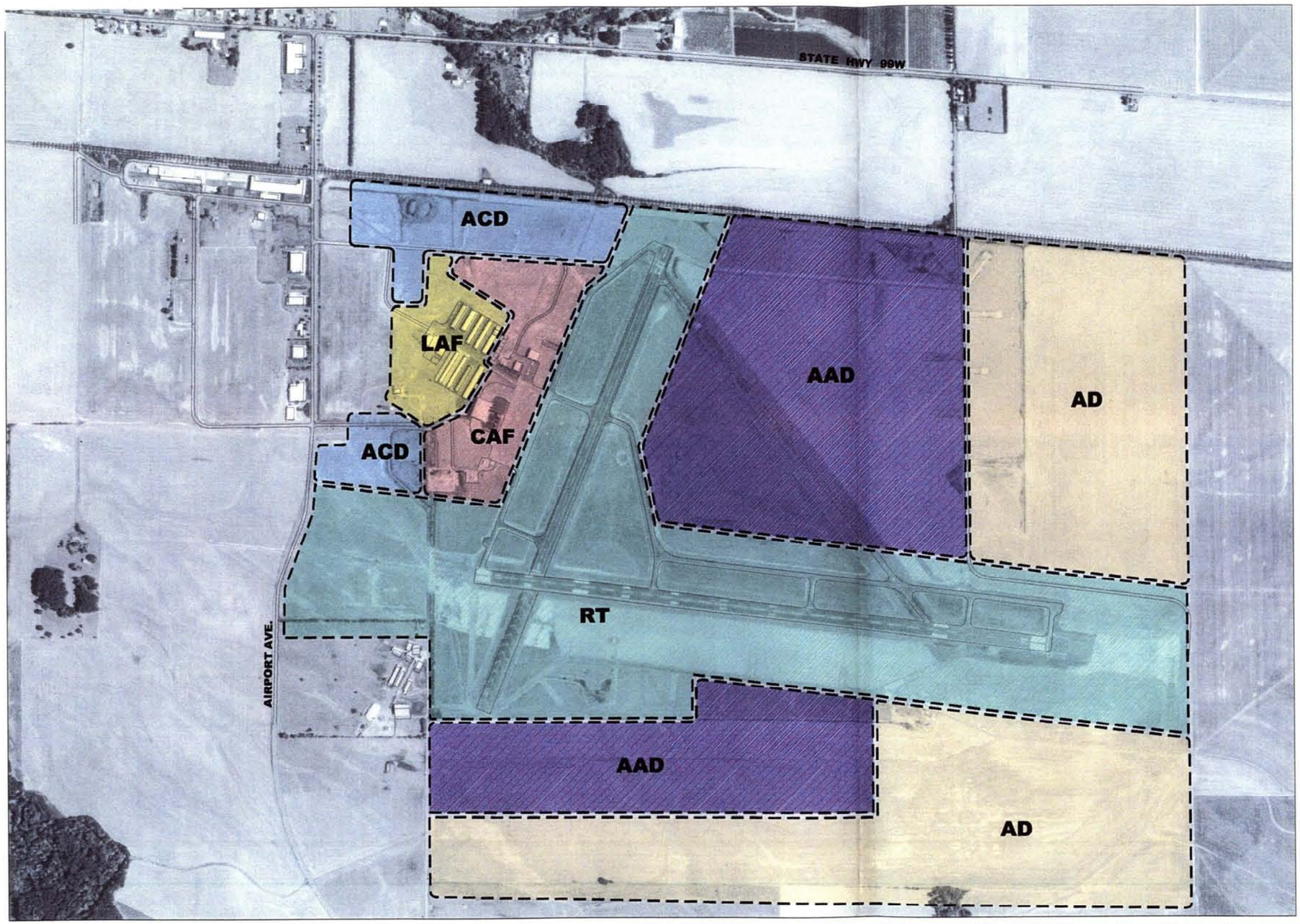
BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	(BRL)	(BRL)
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D5 **Terminal Area Plan**
Alternative Three



17° 57.3' E Mag. Dec. October 2000 -0°3.2' Annual Change
True North

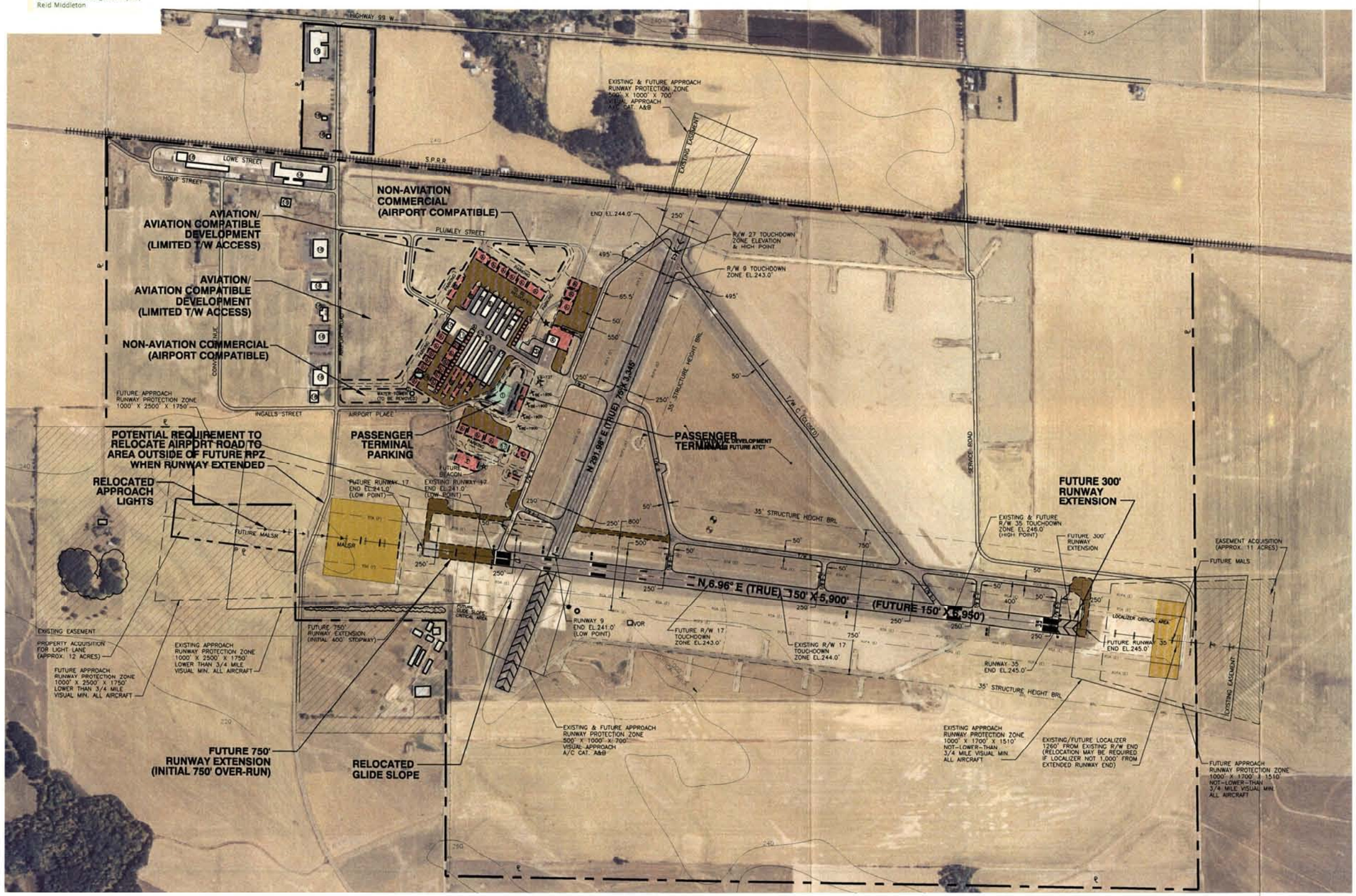
0 250' 500' 1000' 1500'
GRAPHIC SCALE IN FEET

LAND USE LEGEND

- COMMERCIAL AVIATION FACILITIES
- LIMITED AVIATION FACILITIES
- AVIATION ACCESIBLE DEVELOPMENT
- AIRPORT COMPATIBLE DEVELOPMENT
- AIRPORT DEVELOPMENT
- RUNWAY/TAXIWAY

Figure D6 & F10 ***Airport Land Use Plan***

CORVALLIS



ALTERNATIVE LEGEND

- FUTURE RUNWAY/ TAXIWAY PAVEMENT
- FUTURE RSA/OFA
- FUTURE BUILDINGS
- EXISTING BUILDINGS (TO BE REMOVED)

17° 57.3' Mag. Dec. October 2000 -0°3.2' Annual Change

True North

0 250' 500' 1000' 1500'

GRAPHIC SCALE IN FEET

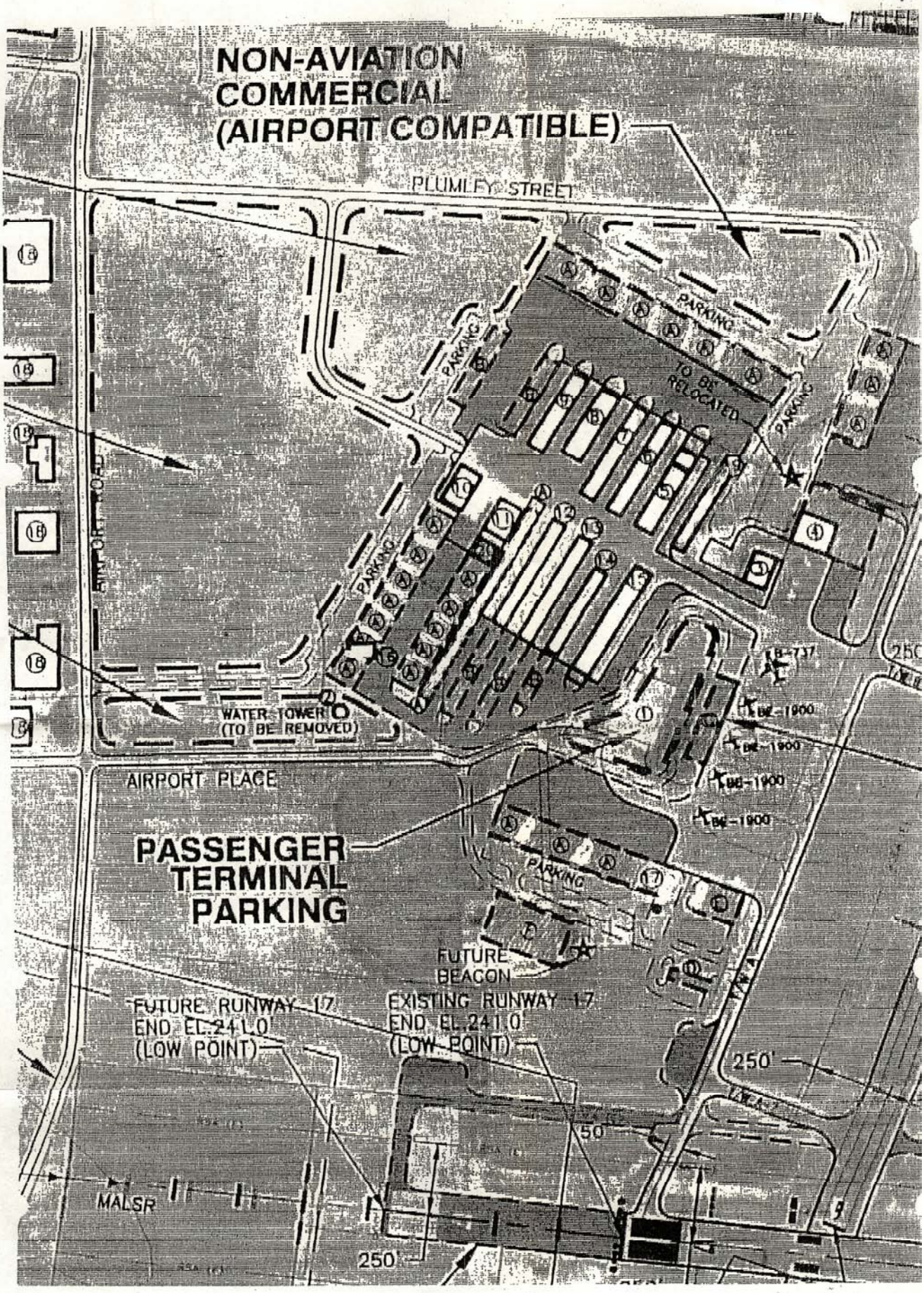
BUILDINGS

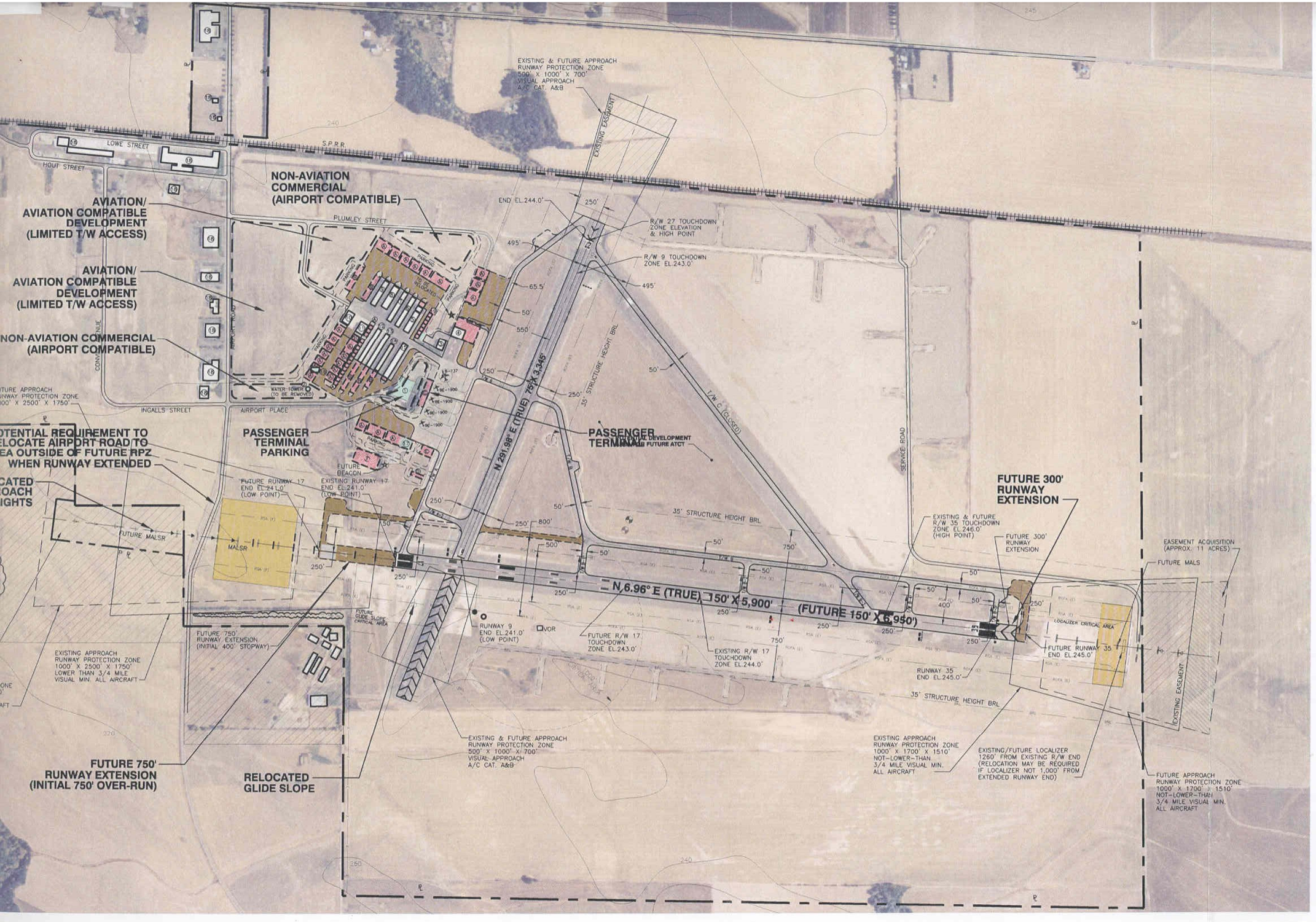
NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	(BRL)	(BRL)
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	F	
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		

Figure D7 ***Conceptual Development Plan***


NON-AVIATION
COMMERCIAL
(AIRPORT COMPATIBLE)
PLUMLEY STREET
PARKING
PARKING
TO BE RELOCATED
PARKING
PARKING
AIRPORT ROAD
WATER TOWER
(TO BE REMOVED)
AIRPORT PLACE
PASSENGER
TERMINAL
PARKING
B-737
BAE-1900
BAE-1900
BAE-1900
BAE-1900
PARKING
FUTURE
BEACON
FUTURE RUNWAY 17
END EL.241.0'
(LOW POINT)
EXISTING RUNWAY 17
END EL.241.0
(LOW POINT)
250'
50'
MALSR
250'



BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	TERMINAL (TO BE REMOVED)	
2	FBO (TO BE REMOVED)	
3	HANGAR	
4	HANGAR (TO BE EXPANDED)	
5	T-HANGAR	
6	T-HANGAR	
7	T-HANGAR	
8	T-HANGAR	
9	T-HANGAR	
10	HANGAR	
11	HANGAR	
12	T-HANGAR	
13	T-HANGAR	
14	T-HANGAR	
15	T-HANGAR	
16	HUMANE SOCIETY (TO BE REMOVED)	
17	FUEL STORAGE (TO BE REMOVED)	
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	

LAYOUT PLAN LEGEND

	EXISTING	*FUTURE*
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	
AIRPORT BEACON	★	
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)	•	○
VISUAL APPROACH SLOPE INDICATOR (VASI)		□ □
BUILDINGS (OFF-AIRPORT)		
AWOS-3	○	
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA	●	

Figure E1 ***Existing (1999) Noise Contours***

Source: Base Map & Future Land Use: ***City of Corvallis Comprehensive Development Plan.***

Figure E2 ***Future (2020) Noise Contours***

Source: Base Map & Future Land Use: ***City of Corvallis Comprehensive Development Plan.***

Land Use	Yearly Day-Night Noise Level (DNL) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)1	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Numbers in parentheses refer to notes.

* The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key to Table 1

SLUCM	Standard Land Use Coding Manual.
Y(Yes)	Land Use and related structures compatible without restrictions.
N(No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30 or 35	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.

Notes

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB to 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(5) Land use compatible provided that special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

Figure E3 ***FAR Part 150 Land Use Compatibility Guidelines***

Source: ***FAR Part 150 Guidelines.***

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	246.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT 44°30'19.83"N LONG 123°17'26.63"W	SAME
AIRPORT REFERENCE CODE	C-II	C-II
NPIAS CATEGORY	CS	CS
MEAN MAX. TEMPERATURE (HOTTEST MONTH)	81.8°F	SAME
TAXIWAY LIGHTING	REFLECTORS	MITL
TAXIWAY MARKING	C/L	C/L
AIRPORT & TERMINAL NAVAIDS	ILS/VOR/NDB/GPS	SAME

FAA STATEMENT

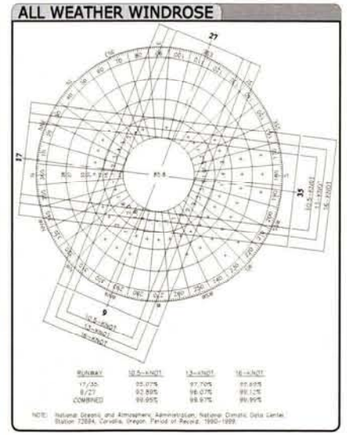
The preparation of this document may have been supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration (Project Number 3-14-0014-08) as provided under Title 49, United States Code, section 47104. The contents do not necessarily reflect 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 in accordance with appropriate public laws.

RUNWAY DATA

ITEM	RUNWAY 17/35 EXISTING	RUNWAY 17/35 FUTURE	RUNWAY 9/27 EXISTING	RUNWAY 9/27 FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	PIR/C	PIR/D	B(V)/B(V)	SAME
RUNWAY LENGTH & WIDTH	150' X 5900'	150' X 6,950'	75' X 3,345'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (x 1,000 LBS)	60SW,100DW,150DT	SAME	51SW,85DW,100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	PIR/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/REILS	MALSR/PAPI/MALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' X 1,900'	500' X 6,950'	150' X 3,945'	SAME
RUNWAY OBJECT FREE AREA	800' X 1,900'	800' X 6,950'	500' X 3,945'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

LOCATION MAP

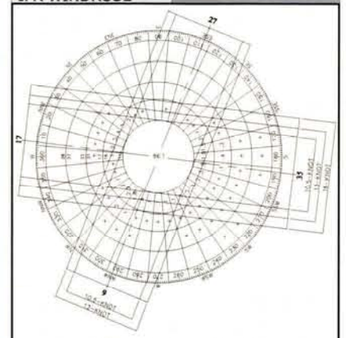
ALL WEATHER WINDROSE



RUNWAY	10.5-KNOT	12-KNOT	16-KNOT
17/35	95.07%	97.70%	99.65%
9/27	92.80%	96.07%	99.12%
COMBINED	98.99%	99.87%	99.99%

NOTE: National Oceanic and Atmospheric Administration, National Climatic Data Center, Station 72694, Corvallis, Oregon. Period of Record: 1990-1999.

IFR WINDROSE



RUNWAY	10.5-KNOT	12-KNOT	16-KNOT
17	95.04%	95.12%	95.19%
35	90.83%	90.99%	91.07%
17/35	99.64%	99.84%	99.91%
9	93.70%	94.82%	N/A
27	93.66%	94.18%	N/A
9/27	97.08%	98.23%	N/A
COMBINED	99.96%	99.97%	99.99%

NOTE: National Oceanic and Atmospheric Administration, National Climatic Data Center, Station 72694, Corvallis, Oregon. Period of Record: 1990-1999. Ceiling at less than 1,000 feet, but equal to or greater than 200 feet and/or visibility less than 2 statute miles, but equal to or greater than 1/2 mile.

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X-X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON	★	★
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)	●	
VISUAL APPROACH SLOPE INDICATOR (VASI)	▪ ▪	0 0
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS	▪▪▪▪ ▪▪▪▪	▫▫▫▫ ▫▫▫▫
GLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)	▪▪▪▪	▫▫▫▫
HOLDLINES		
SIGNS		

DECLARED DISTANCES

ITEM	RUNWAY 17/35 EXISTING	RUNWAY 17/35 FUTURE	RUNWAY 9/27 EXISTING	RUNWAY 9/27 FUTURE
TAKEOFF RUN AVAILABLE (TORA)	5,900'	6,950'	3,345'	SAME
TAKEOFF DISTANCE AVAILABLE (TODA)	5,900'	6,950'	3,345'	SAME
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	5,900'	6,950'	3,345'	SAME
LANDING DISTANCE AVAILABLE (LDA)	5,900'	6,950'	3,345'	SAME

BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	HANGER/TERMINAL (TO BE REMOVED)	N.A.
2	WATER TOWER (TO BE REMOVED)	377.0'
3	HANGAR	N.A.
4	HANGAR (TO BE EXPANDED)	N.A.
5	T-HANGAR	N.A.
6	T-HANGAR	N.A.
7	T-HANGAR	N.A.
8	T-HANGAR	N.A.
9	T-HANGAR	N.A.
10	HANGAR	N.A.
11	HANGAR	N.A.
12	T-HANGAR	N.A.
13	T-HANGAR	N.A.
14	T-HANGAR	N.A.
15	T-HANGAR	N.A.
16	HUMANE SOCIETY (TO BE REMOVED)	N.A.
17	FUEL STORAGE (TO BE REMOVED)	N.A.
18	NON-AVIATION COMMERCIAL/INDUSTRIAL	N.A.
19	7-UNIT EXECUTIVE HANGAR	N.A.
20	EXECUTIVE HANGAR	N.A.
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	
D	FUTURE ARFF FACILITY	
E	FUTURE CARGO FACILITY	
	N.A. = NO INFORMATION AVAILABLE	

NON-STANDARD CONDITION

NO.	DESCRIPTION	EXISTING CONDITION	STANDARD CONDITION	FUTURE CONDITION	REMARKS
	NONE IDENTIFIED				

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. This drawing was developed using the "Airport Layout Plan" for Corvallis Municipal Airport, by W&H Pacific, Portland, Oregon, 1990.
3. Specific justification/documentation of need will be required for FAA participation in any runway extension.
4. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29.

REVISIONS

NO.	DESCRIPTION	DATE

R/W COORDINATES & ELEVATIONS

	EXISTING RUNWAY 17	FUTURE RUNWAY 17	EXISTING RUNWAY 35	FUTURE RUNWAY 35	EXISTING RUNWAY 9	FUTURE RUNWAY 9	EXISTING RUNWAY 27	FUTURE RUNWAY 27
LATITUDE	44°30'13.01"N	44°30'19.83"N	44°29'15.18"N	44°30'19.83"N	44°30'06.78"N	SAME	44°29'54.42"N	SAME
LONGITUDE	123°17'23.53"W	123°17'26.63"W	123°17'33.39"W	123°17'26.63"W	123°17'23.17"W	SAME	123°16'40.37"W	SAME
ELEVATION	241.0'	241.0'	245.0'	245.0'	241.0'	SAME	244.0'	SAME

FAA APPROVAL

Manager, Seattle Airports District Office — Approval Letter Dated

SPONSOR SIGNATURE

Sponsor Signature — Date

17° 57.3' E Mag. Dec. October 2000 @3.2' Annual Change

True North

0 250' 500' 1000' 1500'

GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F1
Airport Layout Plan

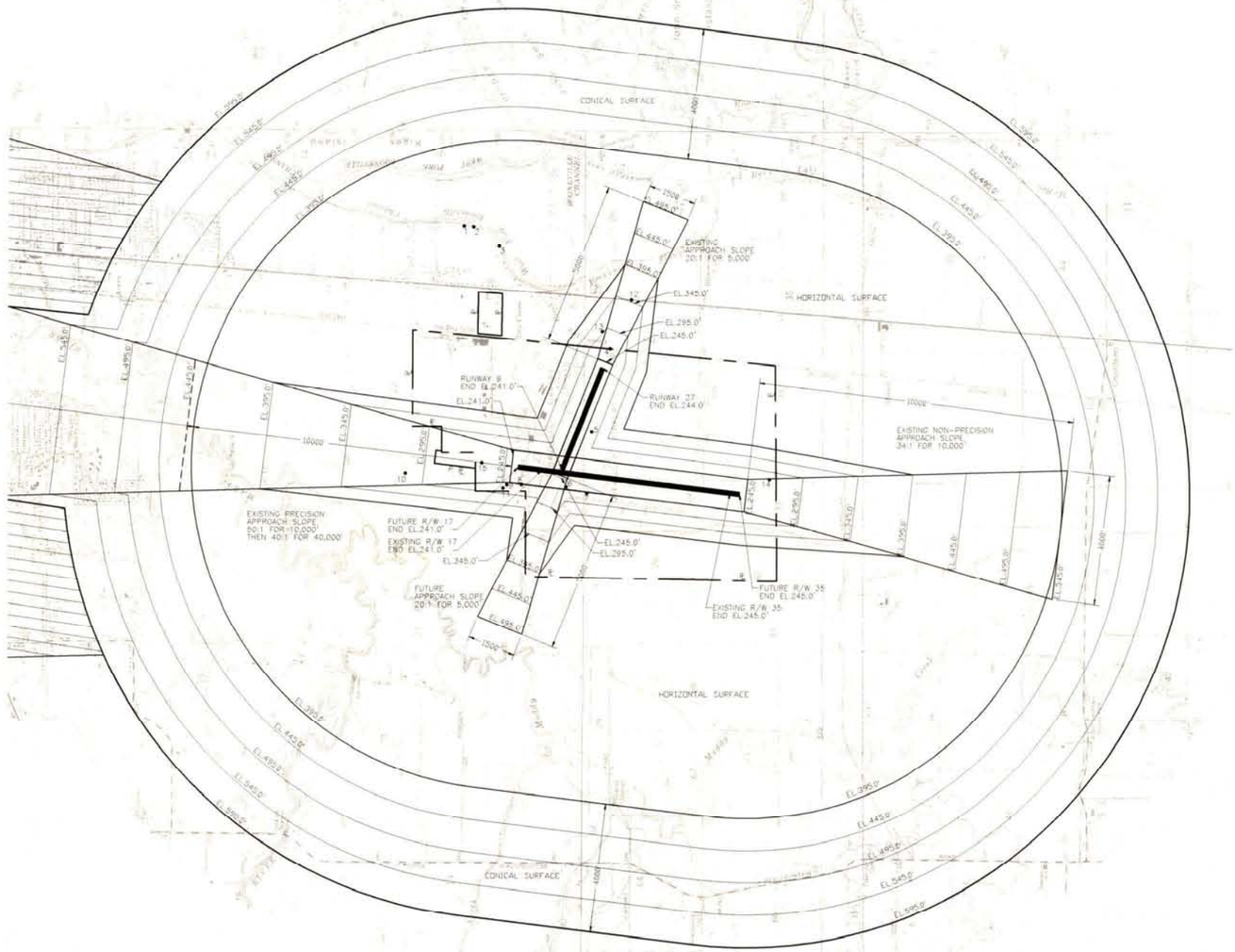
Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE 1" = 500' — F.2

OBSTRUCTIONS

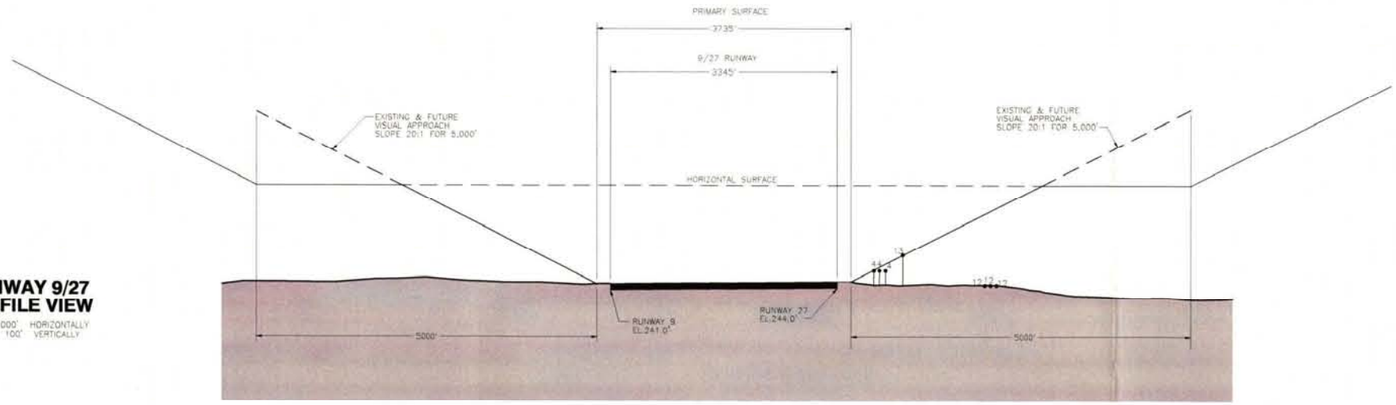
No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
1	TREE	406'	11.0'	HORIZONTAL SURFACE	TO REMAIN
2	TREE	403'	8.0'	HORIZONTAL SURFACE	TO REMAIN
3	TREE	398'	3.0'	HORIZONTAL SURFACE	TO REMAIN
4	RAILROAD	264'	1.0'	APPROACH SURFACE	TO REMAIN
5	OL ON LTD WISK	271'	7.0'	TRANSITIONAL SURFACE	TO REMAIN
6	OL ON OS	273'	14.0'	TRANSITIONAL SURFACE	TO REMAIN
7	OL ON VOR/DME	266'	16.0'	TRANSITIONAL SURFACE	TO REMAIN
8	TREE	276'	31.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
9	TREE	273'	18.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
10	TREE	332'	22.0'	APPROACH SURFACE	TO BE TRIMMED
11	TREE ROW*	265'	5.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
12	HIGHWAY 99	241'	NONE	APPROACH SURFACE	TO REMAIN
13	TREE	280'	NONE	TRANSITIONAL SURFACE	TO BE TRIMMED
14	PRIVATE SERVICE ROAD	245'	NONE	APPROACH SURFACE	TO REMAIN
15	AIRPORT ROAD	240'	NONE	APPROACH SURFACE	TO REMAIN
16	VINEYARD MOUNTAIN RADIO TOWER	1448'	26.0'	APPROACH SURFACE	TO REMAIN
17	VINEYARD MOUNTAIN	1430'	4.0'	APPROACH SURFACE	TO REMAIN

* Approximate location and size.



PLAN VIEW
1" = 2000'

NOTE:
City of Corvallis has a height zoning ordinance in effect for Corvallis Municipal Airport.



RUNWAY 9/27 PROFILE VIEW
1" = 1000' HORIZONTALLY
1" = 100' VERTICALLY

REVISIONS

NO.	DESCRIPTION	DATE

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Topographic background taken from USGS 7.5 Minute Survey Maps, "Wilsonville, Oregon",1975, "Corvallis, Oregon", 1986, "Greenberry, Oregon", 1988, and "Peoria, Oregon", 1975.
3. Obstruction information taken from Corvallis Airport Obstruction Chart (DB Chart #782, April 1998) and data observations by city staff.
4. Terrain profile determined from the highest point along the length and across the width of the extended approach surface.
5. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD88.

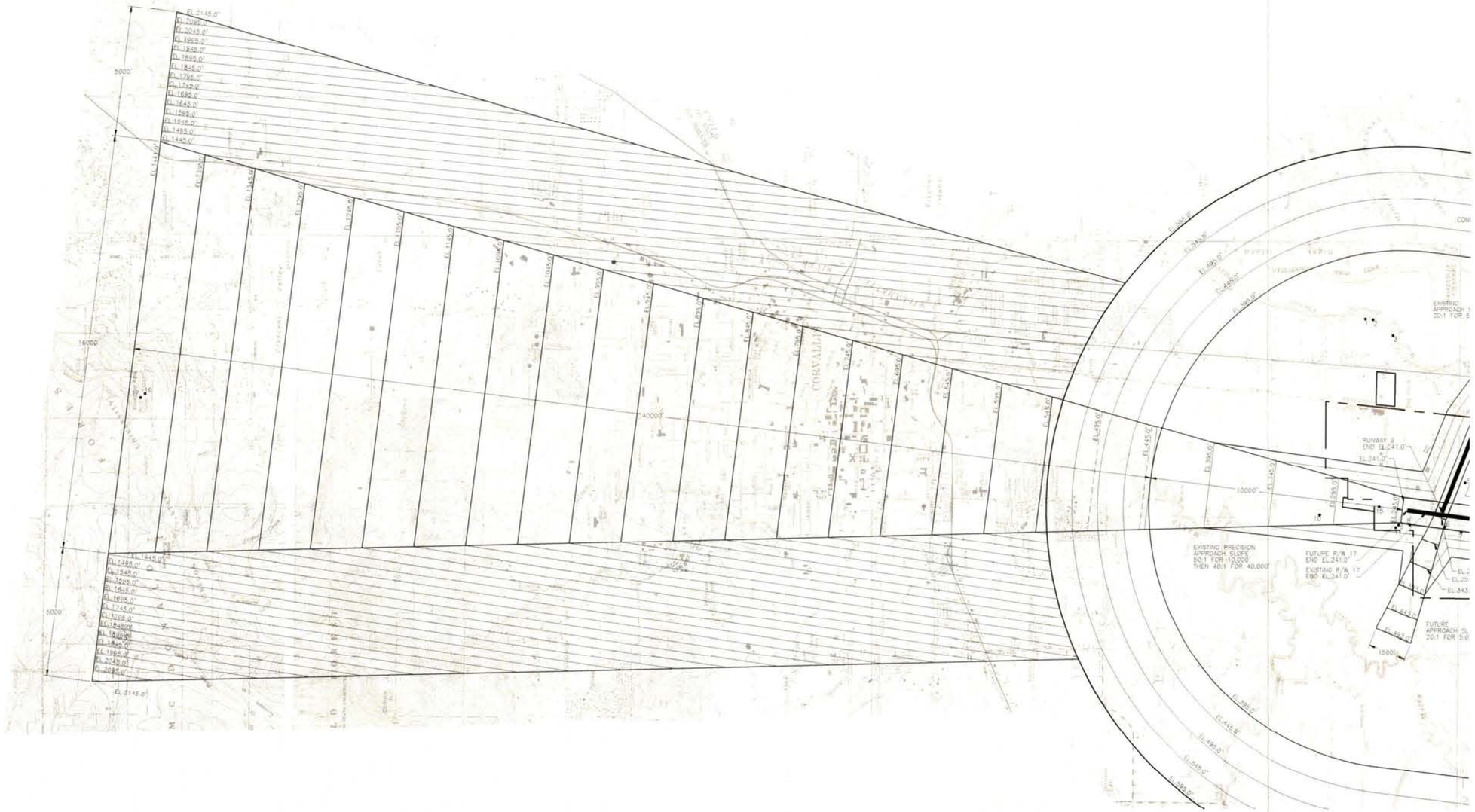
17° 57.3' E Mag. Dec. October 2000 -0° 3.2' Annual Change
True North
0 1000' 2000' 4000' 6000'
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F2
Airport Airspace Plan (with Runway 9/27 Profile)

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE AS NOTED — F.6



EXTENDED PLAN VIEW

1" = 2000'

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
1	TREE	406'	11.0'	HORIZONTAL SURFACE	TO REMAIN
2	TREE	403'	8.0'	HORIZONTAL SURFACE	TO REMAIN
3	TREE	398'	3.0'	HORIZONTAL SURFACE	TO REMAIN
4	RAILROAD	264'	1.0'	APPROACH SURFACE	TO REMAIN
5	OL ON LTD WISK	271'	7.0'	TRANSITIONAL SURFACE	TO REMAIN
6	OL ON GS	273'	14.0'	TRANSITIONAL SURFACE	TO REMAIN
7	OL ON VOR/DME	266'	16.0'	TRANSITIONAL SURFACE	TO REMAIN
8	TREE	276'	31.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
9	TREE	273'	18.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
10	TREE	332'	22.0'	APPROACH SURFACE	TO BE TRIMMED
11	TREE ROW*	265'	5.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
12	HIGHWAY 99	241'	NONE	APPROACH SURFACE	TO REMAIN
13	TREE	285'	NONE	TRANSITIONAL SURFACE	TO BE TRIMMED
14	PRIVATE SERVICE ROAD	245'	NONE	APPROACH SURFACE	TO REMAIN
15	AIRPORT ROAD	240'	NONE	APPROACH SURFACE	TO REMAIN
16	VINEYARD MOUNTAIN RADIO TOWER	1448'	26.0'	APPROACH SURFACE	TO REMAIN
17	VINEYARD MOUNTAIN	1430'	4.0'	APPROACH SURFACE	TO REMAIN

* Approximate location and size.

REVISIONS

NO.	DESCRIPTION	DATE

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Topographic background taken from USGS 7.5 Minute Survey Maps, "Riverside, Oregon",1975, "Corvallis, Oregon", 1988, "Greenberry, Oregon", 1983, and "Peoria, Oregon", 1975.
3. Obstruction information taken from Corvallis Airport Obstruction Chart (OE Chart #783, April 1998) and radar observations by city staff.
4. Terrain profile determined from the highest point along the length and across the width of the extended approach surface.
5. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NGD29.

17° 57.3' E Mag. Dec.
October 2000
-0°3.2' Annual
Change

True North

0 1000' 2000' 4000' 6000'

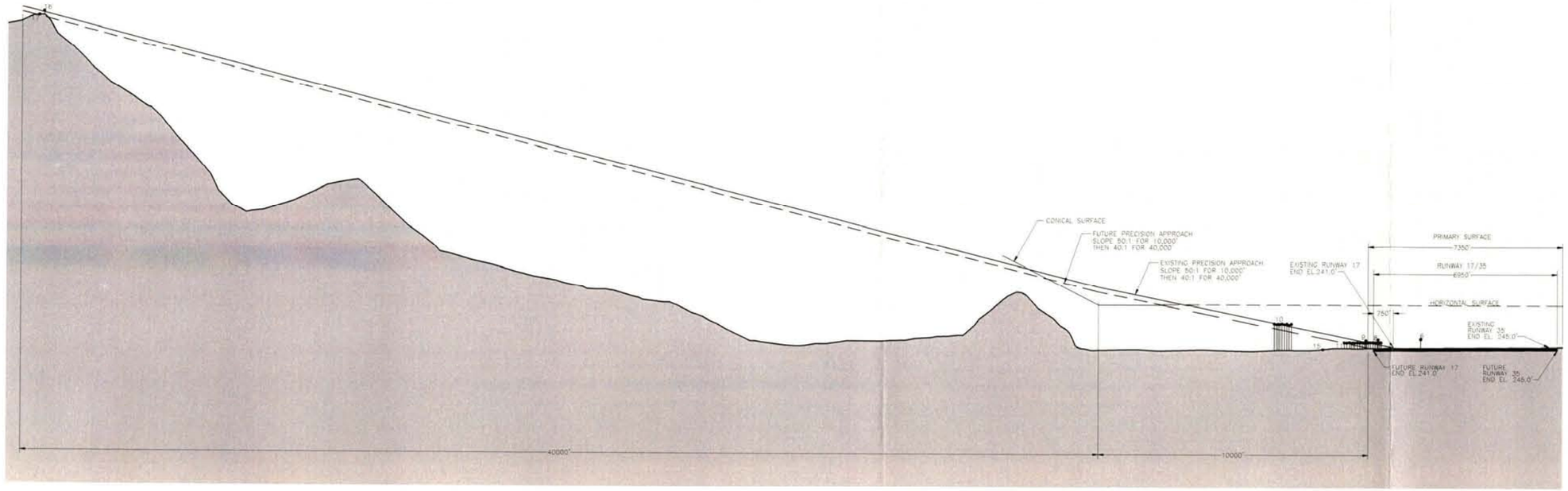
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F3
Airport Airspace Extended Plan

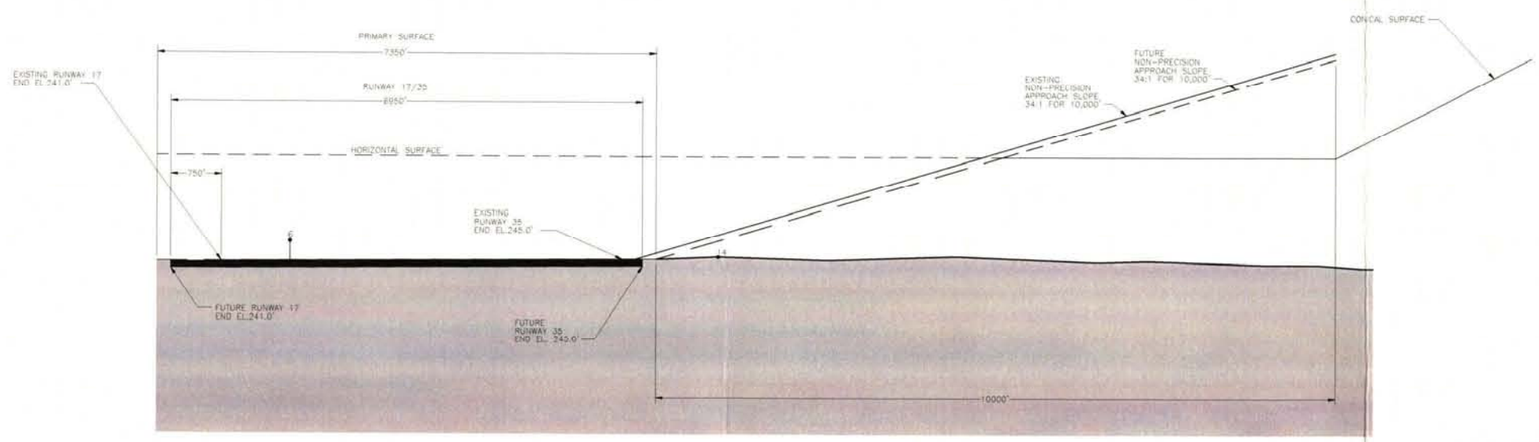
Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE 1" = 2000' — F.7



RUNWAY 17 PROFILE VIEW

1" = 2000' HORIZONTALLY
1" = 200' VERTICALLY



RUNWAY 35 PLAN VIEW

1" = 1000' HORIZONTALLY
1" = 100' VERTICALLY

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
1	TREE	408'	11.0'	HORIZONTAL SURFACE	TO REMAIN
2	TREE	403'	8.0'	HORIZONTAL SURFACE	TO REMAIN
3	TREE	398'	3.0'	HORIZONTAL SURFACE	TO REMAIN
4	RAILROAD	264'	1.0'	APPROACH SURFACE	TO REMAIN
5	OL ON LTD WSK	271'	7.0'	TRANSITIONAL SURFACE	TO REMAIN
6	OL ON GS	273'	14.0'	TRANSITIONAL SURFACE	TO REMAIN
7	OL ON VOR/DME	266'	16.0'	TRANSITIONAL SURFACE	TO REMAIN
8	TREE	276'	31.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
9	TREE	273'	18.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
10	TREE	332'	22.0'	APPROACH SURFACE	TO BE TRIMMED
11	TREE ROW*	265'	5.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
12	HIGHWAY 99	241'	NONE	APPROACH SURFACE	TO REMAIN
13	TREE	285'	NONE	TRANSITIONAL SURFACE	TO BE TRIMMED
14	PRIVATE SERVICE ROAD	245'	NONE	APPROACH SURFACE	TO REMAIN
15	AIRPORT ROAD	240'	NONE	APPROACH SURFACE	TO REMAIN
16	VINEYARD MOUNTAIN RADIO TOWER	1448'	76.0'	APPROACH SURFACE	TO REMAIN
17	VINEYARD MOUNTAIN	1430'	4.0'	APPROACH SURFACE	TO REMAIN

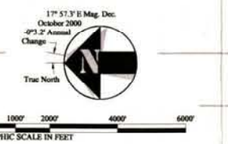
* Approximate location and size.

REVISIONS

NO.	DESCRIPTION	DATE

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Terrain profile determined from the highest point along the length and across the width of the extended approach surface.
3. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29.

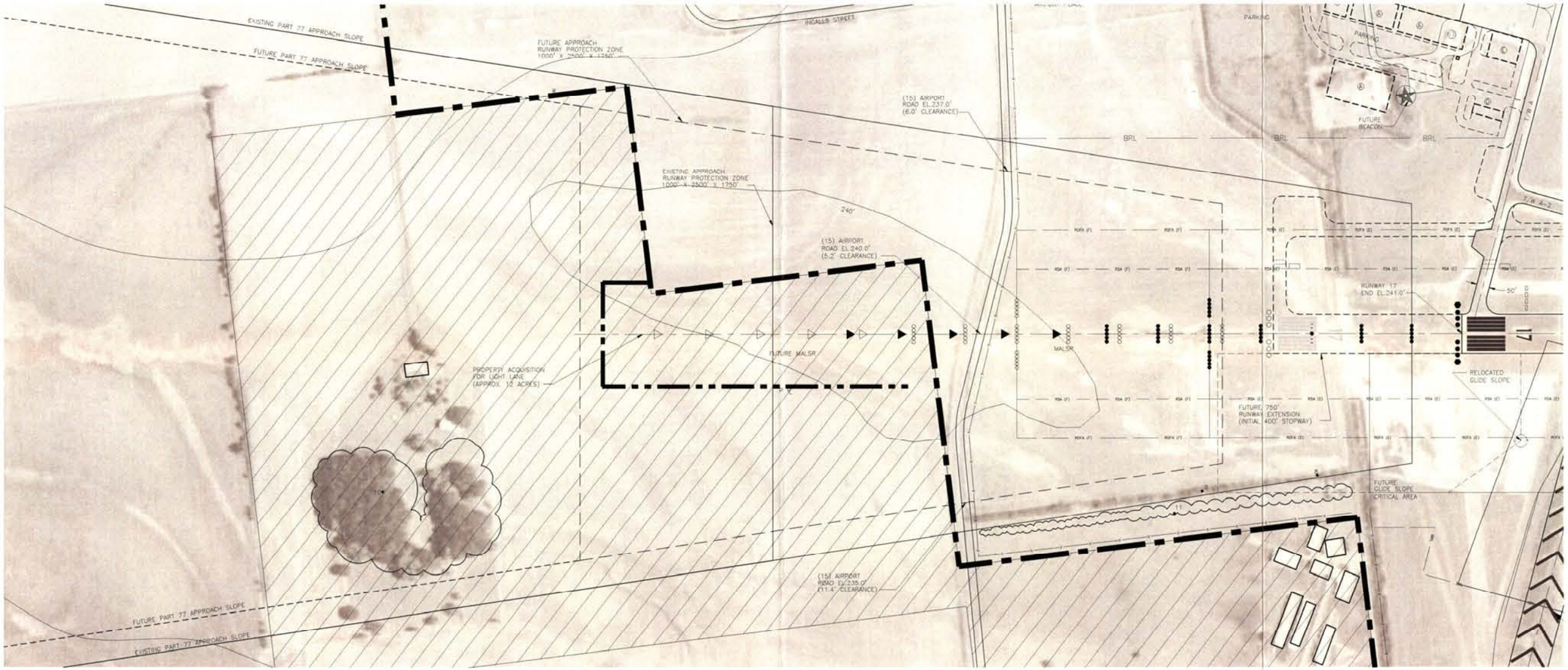


Corvallis Municipal Airport
Corvallis, Oregon

Figure F4
Airport Airspace Profiles (Runway 17/35)

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE AS NOTED — F.8



RUNWAY 17
PLAN VIEW
1" = 200'

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
8	TREE	276'	31.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
9	TREE	273'	18.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
10	TREE	337'	22.0'	APPROACH SURFACE	TO BE TRIMMED
11	TREE, ROW*	265'	5.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
15	AIRPORT ROAD	240'	NONE	APPROACH SURFACE	TO REMAIN

* Approximate location and size.

REVISIONS

NO.	DESCRIPTION	DATE

RUNWAY DATA

ITEM	RUNWAY 17/35		RUNWAY 8/27	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	HPR/C	P/R/C	(B-V)/(B-V)	SAME
RUNWAY LENGTH & WIDTH	150' x 5900'	150' x 6,950'	75' x 3,345'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (x 1,000 LBS)	60SW,100DW,150DT	SAME	51SW,65DW,100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	PIR/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/REILS	MALSR/PAPI/MALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' x 7,900'	500' x 8,950'	150' x 3,945'	SAME
RUNWAY OBJECT FREE AREA	800' x 7,900'	800' x 8,950'	500' x 3,945'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
SIGNS		

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Fifteen feet (15') is added to public roadway elevations, to determine clearance, per FAR Part 77 Criteria.
3. Topographic background taken from USGS 7.5 Minute Survey Maps, "Riverside, Oregon",1975, "Corvallis, Oregon", 1984, "Greenberry, Oregon", 1985, and "Peoria, Oregon", 1975.
4. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAVD29.

17° 57.3' E Mag. Dec. October 2000
0°1.2' Annual Change
True North

0 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F5
Inner Portion of Approach Surface Drawing-R/W 17 (Plan View)

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE 1" = 200' — F.9

NOTE: PROFILE REPRESENTS HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE EXTENDED RUNWAY SAFETY AREA.

RUNWAY 17 PROFILE

1" = 200' HORIZONTALLY
1" = 20' VERTICALLY

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
8	TREE	276'	31.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
9	TREE	273'	18.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
10	TREE	332'	22.0'	APPROACH SURFACE	TO BE TRIMMED
11	TREE ROW*	265'	5.0'	TRANSITIONAL SURFACE	TO BE TRIMMED
15	AIRPORT ROAD	240'	NONE	APPROACH SURFACE	TO REMAIN

* Approximate location and size.

REVISIONS

NO.	DESCRIPTION	DATE

RUNWAY DATA

ITEM	RUNWAY 17/35		RUNWAY 9/27	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	PIP/C	PIP/D	B(V)/B(V)	SAME
RUNWAY LENGTH & WIDTH	150' X 5800'	150' X 6,650'	75' X 3,345'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (X 1,000 LBS)	60SW/100DW/150DT	SAME	61SW/85DW/100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	PIR/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/REILS	MALSR/PAPI/MALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' X 1,900'	500' X 6,850'	150' X 3,845'	SAME
RUNWAY OBJECT FREE AREA	800' X 1,900'	800' X 6,650'	500' X 3,645'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
SIGNS		

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Fifteen feet (15) is added to public roadway elevations, to determine clearance, per FAR Part 77 Criteria.
3. Topographic background taken from USGS 7.5 Minute Survey Maps, "Riverside, Oregon",1975, "Corvallis, Oregon", 1966, "Greenberry, Oregon", 1969, and "Peoria, Oregon", 1975.
4. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29.

17° 57.3' E Mag. Dec. October 2000
40'3.2' Annual Change
True North

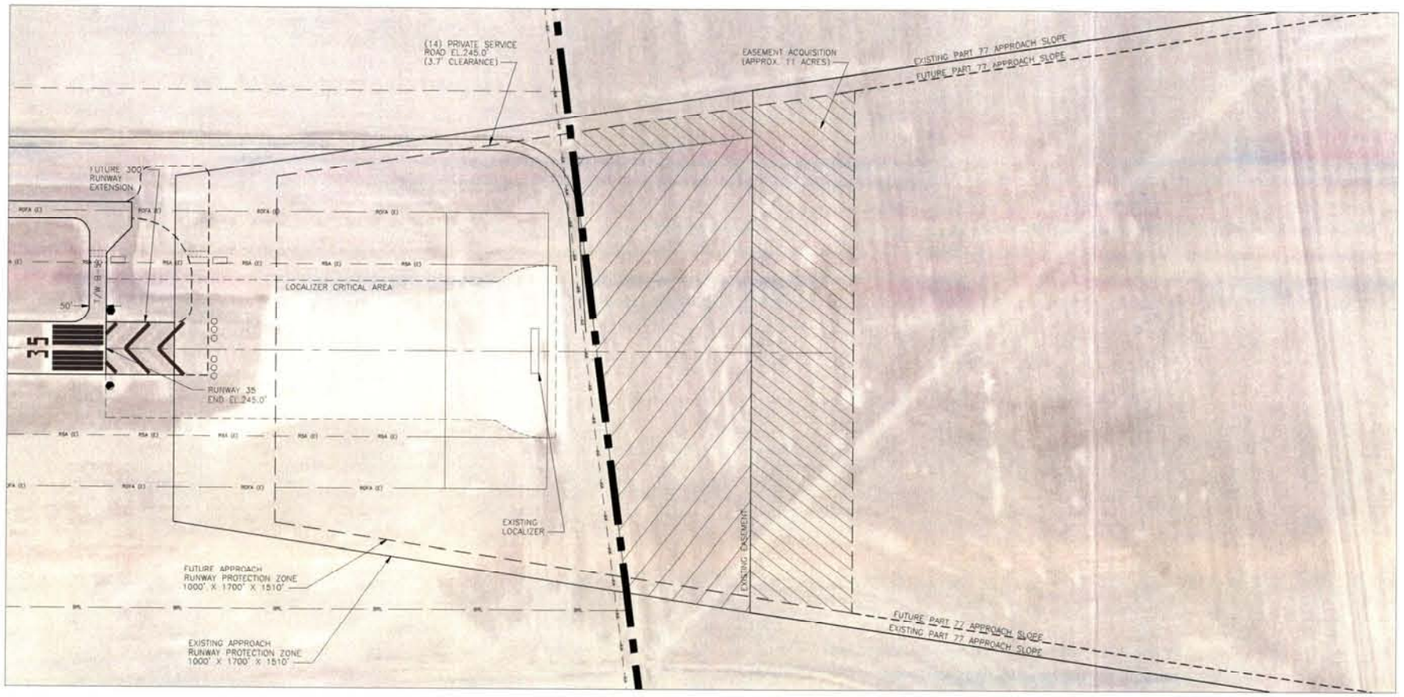
0 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

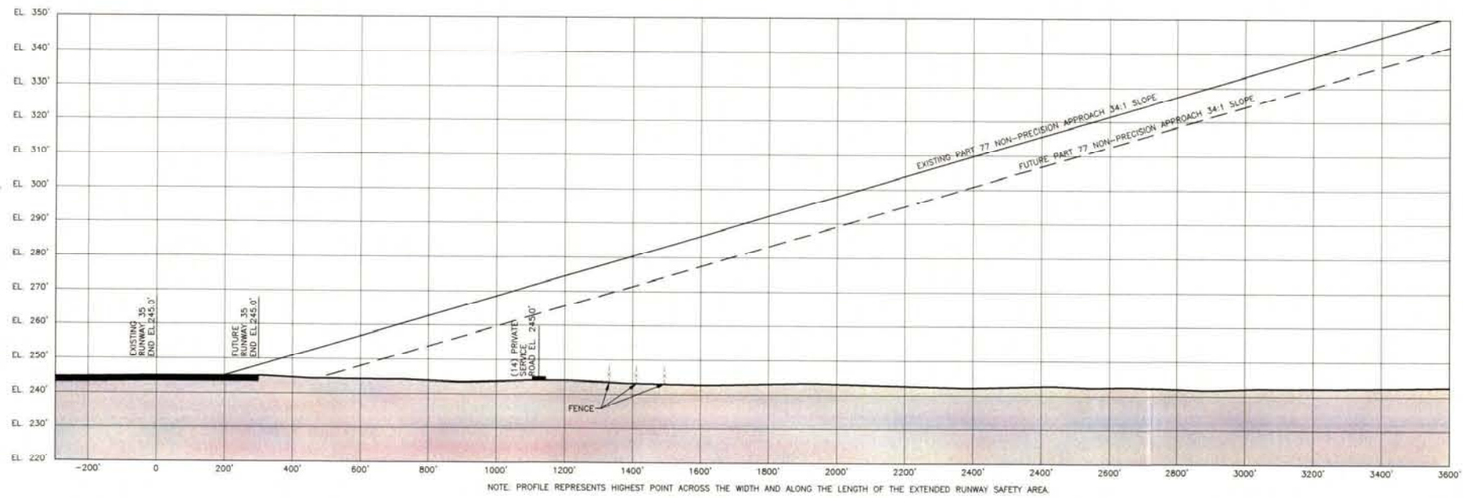
Figure F6
Inner Portion of Approach Surface Drawing-R/W 17 (Profile View)

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE AS NOTED — F.10



RUNWAY 35
PLAN VIEW
1" = 200'



NOTE: PROFILE REPRESENTS HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE EXTENDED RUNWAY SAFETY AREA.

RUNWAY 35
PROFILE
1" = 200' HORIZONTALLY
1" = 20' VERTICALLY

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
SIGNS		

RUNWAY DATA

ITEM	RUNWAY 17/35		RUNWAY 9/27	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	P/R/C	P/R/D	B(V)/B(V)	SAME
RUNWAY LENGTH & WIDTH	150' X 5900'	150' X 6,950'	75' X 3,345'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (X 1,000 LBS)	80SW/100DW/150DT	SAME	51SW/65DW/100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	P/R/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/REILS	MALSR/PAPI/MALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' X 1,900'	500' X 6,950'	150' X 3,945'	SAME
RUNWAY OBJECT FREE AREA	800' X 1,900'	800' X 6,950'	500' X 3,945'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
14	PRIVATE SERVICE ROAD	245'	NONE	APPROACH SURFACE	TO REMAIN

REVISIONS

NO.	DESCRIPTION	DATE

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Fifteen feet (15') is added to public roadway elevations, to determine clearance, per FAR Part 77 Criteria.
3. Topographic data/ground cover from USGS 7.5 Minute Survey Maps, "Riverside, Oregon",1915, "Corvallis, Oregon", 1988, "Greenberry, Oregon", 1988, and "Peoria, Oregon", 1975.
4. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29.

17° 57.3' E Mag. Dec. October 2000 -0°3.2' Annual Change

True North

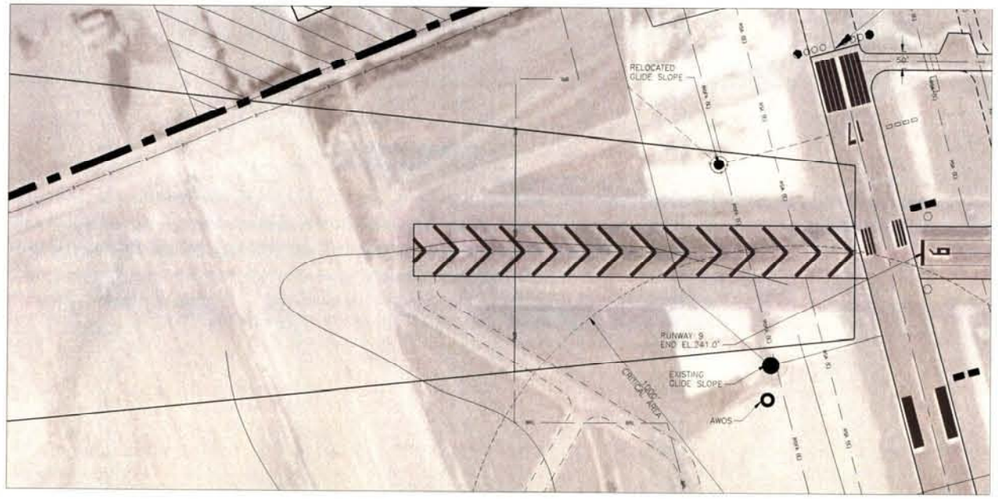
0 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F7
Inner Portion of Approach Surface Drawing-R/W 35 (Plan & Profile View)

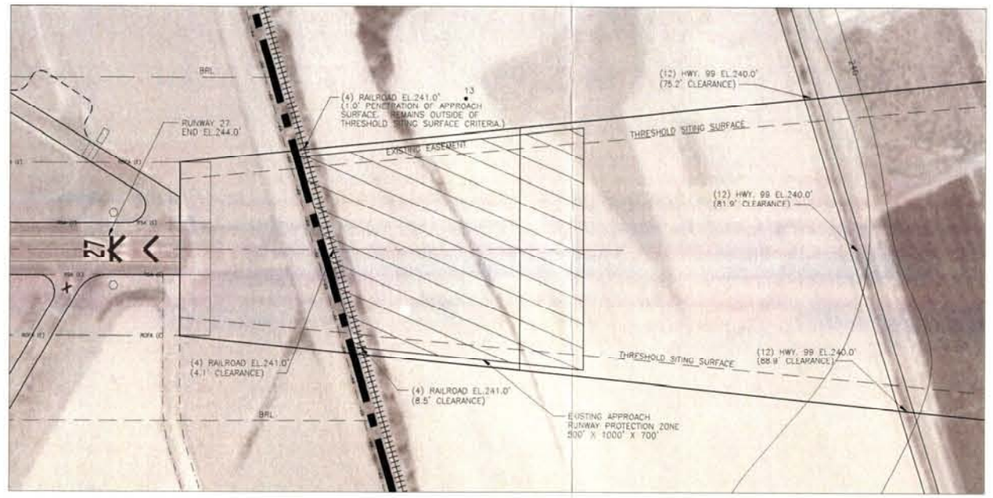
Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE AS NOTED — F.11



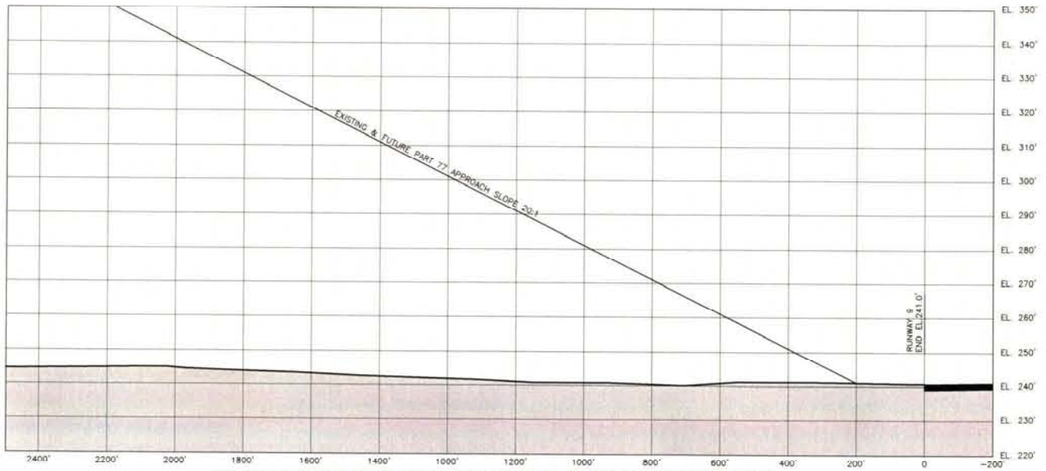
RUNWAY 9 PLAN VIEW

1" = 200'



RUNWAY 27 PLAN VIEW

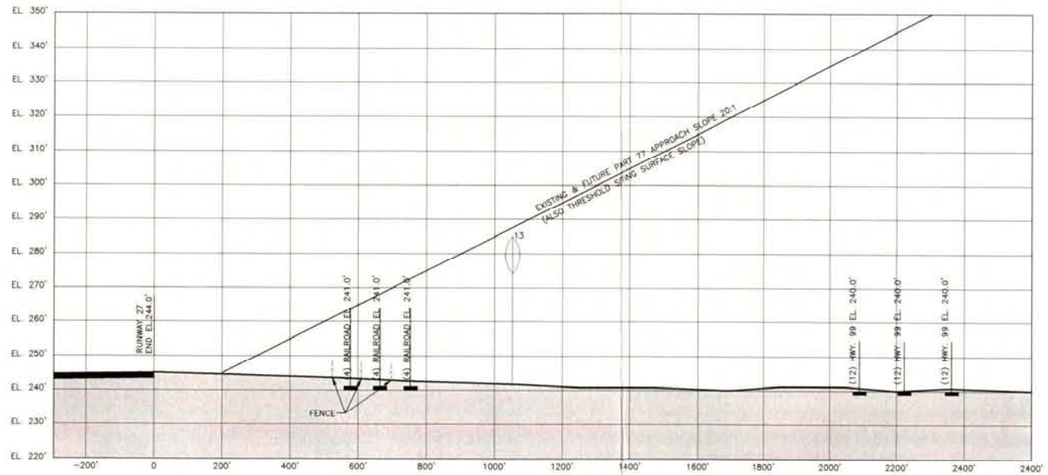
1" = 200'



NOTE: PROFILE REPRESENTS HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE EXTENDED RUNWAY SAFETY AREA.

RUNWAY 9 PROFILE

1" = 200' HORIZONTALLY
1" = 20' VERTICALLY



NOTE: PROFILE REPRESENTS HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGTH OF THE EXTENDED RUNWAY SAFETY AREA.

RUNWAY 27 PROFILE

1" = 200' HORIZONTALLY
1" = 20' VERTICALLY

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition
4	RAILROAD	264'	1.0'	APPROACH SURFACE	TO REMAIN
12	HIGHWAY 99	241'	NONE	APPROACH SURFACE	TO REMAIN
13	TREE	285'	NONE	TRANSITIONAL SURFACE	TO BE TRIMMED

REVISIONS

NO.	DESCRIPTION	DATE

RUNWAY DATA

ITEM	RUNWAY 17/35		RUNWAY 9/27	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	PIR/C	PIR/D	B(V)/B(V)	SAME
RUNWAY LENGTH & WIDTH	150' X 5900'	150' X 6,950'	75' X 3,345'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (x 1,000 LBS)	60SW,100DW,150DT	SAME	51SW,65DW,100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	PIR/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/REILS	MALSR/PAPI/MALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' X 1,900'	500' X 8,950'	150' X 3,945'	SAME
RUNWAY OBJECT FREE AREA	800' X 1,900'	800' X 8,950'	400' X 3,945'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(E)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
SIGNS		

NOTES

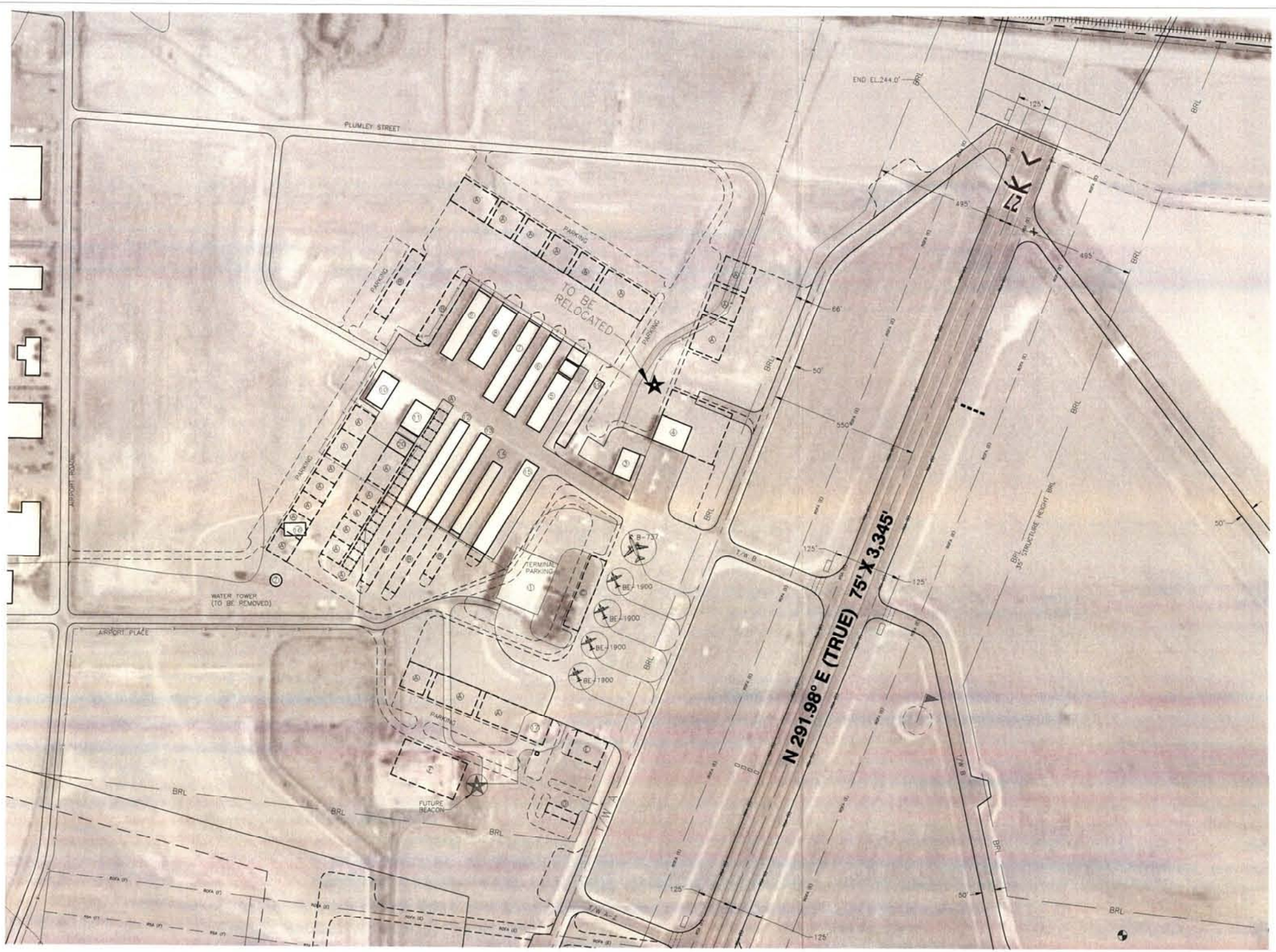
1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Fifteen feet (15') is added to public roadway elevations, to determine clearance, per FAR Part 77 Criteria.
3. Topographic background taken from USGS 7.5 Minute Survey Maps, "Riverside, Oregon" 1975, "Corvallis, Oregon", 1986, "Greenberry, Oregon", 1985, and "Peoria, Oregon", 1975.
4. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29.

Corvallis Municipal Airport
Corvallis, Oregon

Figure F8
Inner Portion of Approach Surface Drawing-R/W 9 & 27 (Plan & Profile View)

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE AS NOTED — F.12



LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	x	x
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(E)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
NAVAIDS		
THRESHOLD LIGHTS		
IGLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
SIGNS		

RUNWAY DATA

ITEM	RUNWAY 17/35		RUNWAY 9/27	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	PIR/C	PIR/D	B(V)/B(V)	SAME
RUNWAY LENGTH & WIDTH	150' x 5900'	150' x 6,945'	75' x 3,345'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (X 1,000 LBS)	60SW,120DW,150DT	SAME	51SW,65DW,100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	PIR/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/PRELS	MALSR/PAPI/MALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' X 1,900'	500' X 6,950'	150' X 3,945'	SAME
RUNWAY OBJECT FREE AREA	800' X 1,900'	800' X 6,950'	500' X 3,945'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

OBSTRUCTIONS

No.	Description	Elevation	Penetration	Surface Penetrated	Disposition

REVISIONS

NO.	DESCRIPTION	DATE

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. All parking areas provided with landscape plans per City of Corvallis requirements.
3. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29.

BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	HANGER/TERMINAL (TO BE REMOVED)	N.A.
2	WATER TOWER (TO BE REMOVED)	377.0'
3	HANGAR	N.A.
4	HANGAR (TO BE EXPANDED)	N.A.
5	T-HANGAR	N.A.
6	T-HANGAR	N.A.
7	T-HANGAR	N.A.
8	T-HANGAR	N.A.
9	T-HANGAR	N.A.
10	HANGAR	N.A.
11	HANGAR	N.A.
12	T-HANGAR	N.A.
13	T-HANGAR	N.A.
14	T-HANGAR	N.A.
15	T-HANGAR	N.A.
16	HUMANE SOCIETY (TO BE REMOVED)	N.A.
17	FUEL STORAGE (TO BE REMOVED)	N.A.
18	NON-AVIATION COMMERCIAL/INDUSTRIAL	N.A.
19	7-UNIT EXECUTIVE HANGAR	N.A.
20	EXECUTIVE HANGAR	N.A.
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	
D	FUTURE ARFF FACILITY	
E	FUTURE CARGO FACILITY	

N.A. = NO INFORMATION AVAILABLE

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	244.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT 44°30'30.5" LON 123°17'08.9"	SAME LAT 44°30'30.5" LON 123°17'08.9"
AIRPORT REFERENCE CODE	C-II	C-II
NPIAS CATEGORY	CS	CS
MEAN MAX. TEMPERATURE (HOTTEST MONTH)	81.8°F	SAME
TAXIWAY LIGHTING	REFLECTORS	MITL
TAXIWAY MARKING	C/L	C/L
AIRPORT & TERMINAL NAVAIDS	ILS/VOR/NDB/GPS	SAME

17° 57.3' E Mag. Dec. October 2000 (27.3' Annual Change -)

True North

0 100' 200' 400' 600'

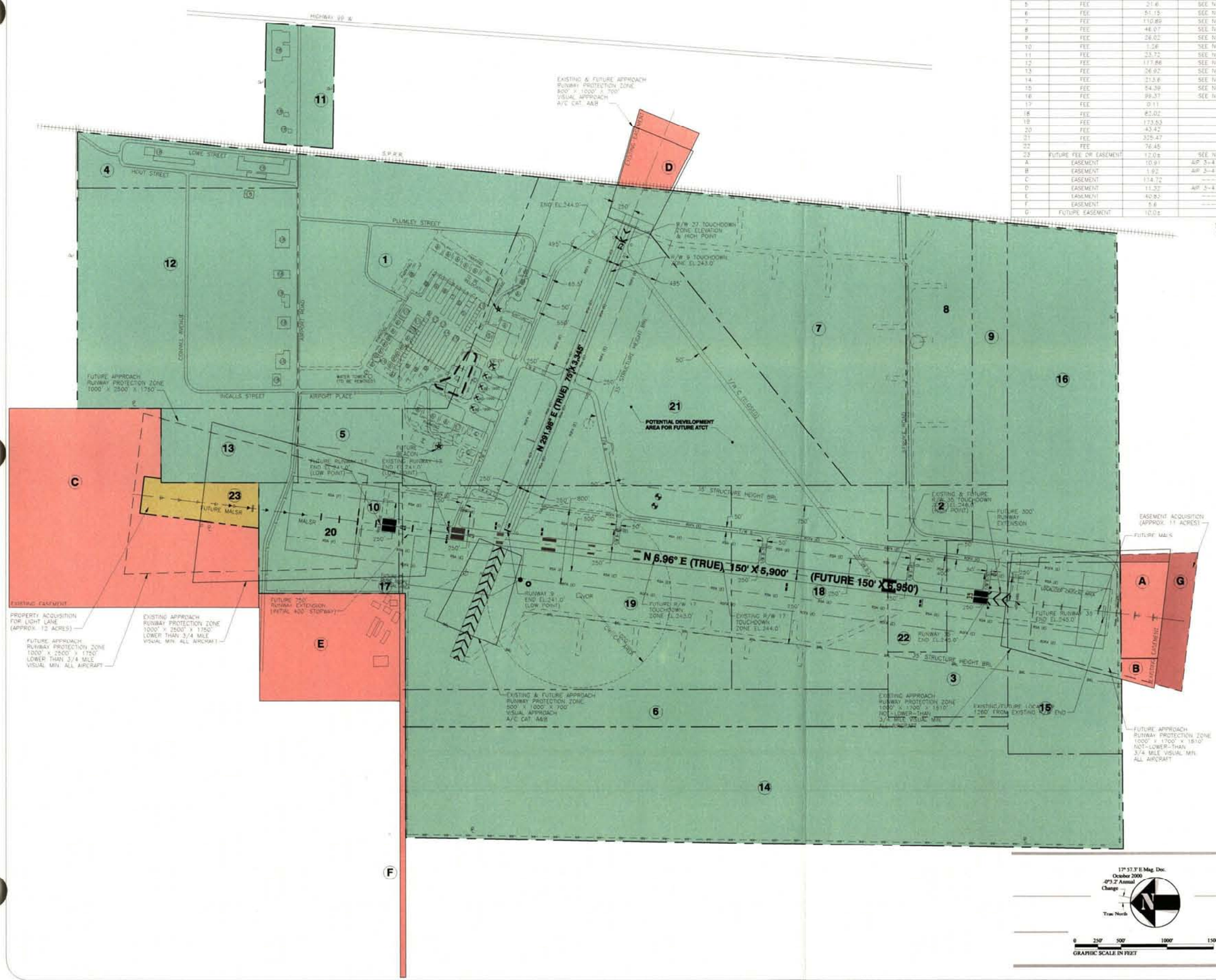
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F9
Terminal Area Plan

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE 1" = 200' — F.14



PROPERTY INFORMATION

PARCEL	INTERESTS	ACREAGE	PROJECT	USE	RECORDING INFO.	DATE	GRANTOR
1	FEE	122.48	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 41	1/23/48	UNITED STATES OF AMERICA
2	FEE	12.02	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 41	1/23/48	UNITED STATES OF AMERICA
3	FEE	44.78	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 41	1/23/48	UNITED STATES OF AMERICA
4	FEE	27.0	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 42	1/23/48	UNITED STATES OF AMERICA
5	FEE	21.6	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 42	1/23/48	UNITED STATES OF AMERICA
6	FEE	51.15	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 42	1/23/48	UNITED STATES OF AMERICA
7	FEE	110.89	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 42	1/23/48	UNITED STATES OF AMERICA
8	FEE	46.07	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 42	1/23/48	UNITED STATES OF AMERICA
9	FEE	26.02	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 43	1/23/48	UNITED STATES OF AMERICA
10	FEE	1.06	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 121, PAGES 46	1/23/48	UNITED STATES OF AMERICA
11	FEE	23.72	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 125, PAGE 239	7/1/48	UNITED STATES OF AMERICA
12	FEE	117.86	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 125, PAGE 239	7/1/48	UNITED STATES OF AMERICA
13	FEE	26.97	SEE NOTE 1	RUNWAY PROTECTION ZONE	BOOK 125, PAGES 240	7/1/48	UNITED STATES OF AMERICA
14	FEE	213.6	SEE NOTE 1	RUNWAY PROTECTION ZONE	BOOK 125, PAGES 240	7/1/48	UNITED STATES OF AMERICA
15	FEE	54.39	SEE NOTE 1	RUNWAY PROTECTION ZONE	BOOK 125, PAGES 240	7/1/48	UNITED STATES OF AMERICA
16	FEE	99.37	SEE NOTE 1	CURRENT AERONAUTICAL USE	BOOK 125, PAGES 240	7/1/48	UNITED STATES OF AMERICA
17	FEE	0.11		FUTURE DEVELOPMENT	BOOK 121, PAGES 46	1/23/48	UNITED STATES OF AMERICA
18	FEE	82.02		FUTURE DEVELOPMENT	BOOK 99, PAGES 626	3/19/42	J. B. WILSON
19	FEE	173.53		FUTURE DEVELOPMENT	BOOK 99, PAGES 639	3/20/42	J. S. McCREEDY
20	FEE	43.42		CURRENT AERONAUTICAL USE	BOOK 180, PAGE 260	1/26/62	C. J. WELTZIN
21	FEE	325.47		CURRENT AERONAUTICAL USE	BOOK 99, PAGE 556	3/3/42	RICHARD, MOORE AND ROBINSON
22	FEE	76.45		CURRENT AERONAUTICAL USE	BOOK 99, PAGE 558	3/3/42	P. E. EGGERS
23	FUTURE FEE OR EASEMENT	12.0±	SEE NOTE 1	FUTURE AERONAUTICAL USE			
A	EASEMENT	10.91	AIP 3-41-0014-07	AVIGATION/HAZARD	BOOK M233038, PAGE 97	6/3/97	HOWARD L & DELTA C. BAL FAMILY TRUST
B	EASEMENT	1.82	AIP 3-41-0014-07	AVIGATION/HAZARD	BOOK M233667, PAGE 97	6/3/97	VENELL FARMS, INC.
C	EASEMENT	114.72	----------	AVIGATION/HAZARD	BOOK 180, PAGE 681	3/5/62	VENELL FARMS, INC.
D	EASEMENT	11.32	AIP 3-41-0014-07	AVIGATION/HAZARD	BOOK M233782, PAGE 97	6/3/97	-LINE S. MURPHY
E	EASEMENT	40.82	----------	AVIGATION/HAZARD	BOOK 125, PAGE 814	3/22/49	C. W. ROWLAND
F	EASEMENT	5.6	----------	ACCESS ROAD	BOOK M68611, PAGE 85	7/12/85	PETER ROSENAST
G	FUTURE EASEMENT	10.0±		AVIGATION/HAZARD			

NOTE:
1. REORGANIZATION PLAN ONE OF 1947, SURPLUS PROPERTY ACT OF 1944

LINE LEGEND

- Property Line
- Parcel Line
- Easement Line
- Future Easement Line

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. Source: Exhibit A-Airport Property Map, Dave Evans & Associates, Sept. 1968
3. Horizontal geodetic datums are NAD83 and vertical geodetic datums are NAD29

17° 57.3' E Mag. Dec. October 2000 -0° 3.2' Annual Change

True North

0 250' 500' 1000' 1500'
GRAPHIC SCALE IN FEET

Corvallis Municipal Airport
Corvallis, Oregon

Figure F11
Airport Property Map

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE 1" = 500'

AIRPORT DATA

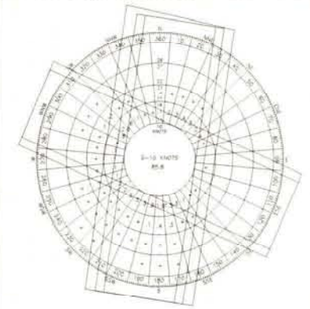
	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	246.0'	SAME
AIRPORT REFERENCE POINT (ARP)	44°30'00"N 123°17'00"W	SAME
AIRPORT REFERENCE CODE	C-II	C-II
NPIAS CATEGORY	CS	CS
MEAN MAX. TEMPERATURE (HOTTEST MONTH)	81.8°F	SAME
TAXIWAY LIGHTING	REFLECTORS	MITL
TAXIWAY MARKING	C/L	C/L
AIRPORT & TERMINAL NAVAIDS	ILS/VOR/NDB/GPS	SAME

RUNWAY DATA

ITEM	RUNWAY 17/35		RUNWAY 9/27	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2-MILE/1-MILE	1/2-MILE/3/4-MILE	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	50:1/34:1	SAME	20:1/20:1	SAME
PART 77 CATEGORY	P/R/A	P/R/D	B(V)/B(V)	SAME
RUNWAY LENGTH & WIDTH	150' X 5900'	150' X 6,950'	75' X 3,335'	SAME
EFFECTIVE GRADIENT (%)	0.07	0.07	0.09	0.09
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT	SAME
PAVEMENT STRENGTH (x 1,000 / lbs)	60SW-100D-W-150DT	SAME	51SW-65DW-100DT	SAME
RUNWAY LIGHTING	MIRL	SAME	MIRL	SAME
RUNWAY MARKING	PIR/NPI	SAME	BASIC/BASIC	SAME
VISUAL APPROACH AIDS (LIGHTING)	MALSR/VASI/REILS	MALSR/PAPI/SEALS	PAPI	PAPI
INSTRUMENT APPROACH AIDS	ILS/VOR/NDB/GPS	SAME	NONE	SAME
AIRPORT REFERENCE CODE	C-II	SAME	B-II	SAME
CRITICAL AIRCRAFT	CANADAIR CL-600	SAME	KING AIR B-200	SAME
RUNWAY SAFETY AREA	500' x 1,000'	500' x 8,950'	150' x 3,835'	SAME
RUNWAY OBJECT FREE AREA	800' x 1,000'	800' x 8,950'	500' x 3,835'	SAME
RUNWAY OBSTACLE FREE ZONE	NO OBSTACLE FREE ZONE OBJECT PENETRATIONS			
LINE-OF-SIGHT ALONG RUNWAY	CRITERIA MET	SAME	CRITERIA MET	SAME
THRESHOLD SITING SURFACE	NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS			

LOCATION MAP

ALL WEATHER WINDROSE

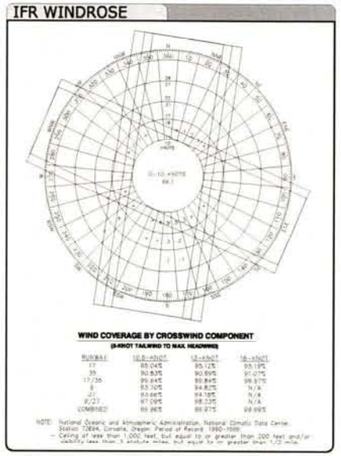


WIND COVERAGE BY CROSSWIND COMPONENT

RUNWAY	10.5-KNOT	13-KNOT	16-KNOT
17/35	97.70%	97.70%	99.84%
9/27	92.89%	96.07%	99.12%
COMBINED	95.29%	96.87%	99.49%

NOTE: National Oceanic and Atmospheric Administration, National Climatic Data Center, Station 72894, Corvallis, Oregon. Period of Record: 1960-1999.

IFR WINDROSE



WIND COVERAGE BY CROSSWIND COMPONENT
(3-KNOT TAILWIND TO MAX HEADWIND)

RUNWAY	10.5-KNOT	13-KNOT	16-KNOT
17	89.04%	95.12%	99.19%
35	90.83%	95.89%	97.07%
17/35	95.84%	99.84%	99.97%
9	93.10%	94.83%	N/A
27	91.66%	94.38%	N/A
9/27	97.19%	98.20%	N/A
COMBINED	95.26%	98.07%	99.99%

NOTE: National Oceanic and Atmospheric Administration, National Climatic Data Center, Station 72894, Corvallis, Oregon. Period of Record: 1960-1999.
– Ceiling of less than 1,000 feet, but equal to or greater than 200 feet and/or visibility less than 3 statute miles, but equal to or greater than 1/2 mile.

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X X	X X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
EXISTING ABANDONED AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON	★	★
LIGHTED WIND CONE & SEGMENTED CIRCLE		
RUNWAY END IDENTIFIER LIGHTS (REILS)	•	
VISUAL APPROACH SLOPE INDICATOR (VASI)		
BUILDINGS (OFF-AIRPORT)		
AWOS-3		
THRESHOLD LIGHTS		
GLIDE SLOPE ANTENNA		
AIRPORT REFERENCE POINT		
PRECISION APPROACH PATH INDICATOR (PAPI)		
HOLDLINES		
RADAR		

DECLARED DISTANCES

ITEM	RUNWAY 17/35 EXISTING	RUNWAY 17/35 FUTURE	RUNWAY 9/27 EXISTING	RUNWAY 9/27 FUTURE
TAKEOFF RUN AVAILABLE (TORA)	5,900'	6,950'	3,335'	SAME
TAKEOFF DISTANCE AVAILABLE (TODA)	5,900'	6,950'	3,335'	SAME
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	5,900'	6,950'	3,335'	SAME
LANDING DISTANCE AVAILABLE (LDA)	5,900'	6,950'	3,335'	SAME

BUILDINGS

NO.	DESCRIPTION	ELEVATION
1	HANGER/TERMINAL (TO BE REMOVED)	N.A.
2	WATER TOWER (TO BE REMOVED)	377.0'
3	HANGAR	N.A.
4	HANGAR (TO BE EXPANDED)	N.A.
5	T-HANGAR	N.A.
6	T-HANGAR	N.A.
7	T-HANGAR	N.A.
8	T-HANGAR	N.A.
9	T-HANGAR	N.A.
10	HANGAR	N.A.
11	HANGAR	N.A.
12	T-HANGAR	N.A.
13	T-HANGAR	N.A.
14	T-HANGAR	N.A.
15	T-HANGAR	N.A.
16	HUMANE SOCIETY (TO BE REMOVED)	N.A.
17	FUEL STORAGE (TO BE REMOVED)	N.A.
18	NON-AVIATION COMMERCIAL/INDUSTRIAL	N.A.
19	T-UNIT EXECUTIVE HANGAR	N.A.
20	EXECUTIVE HANGAR	N.A.
A	FUTURE HANGAR	
B	FUTURE T-HANGAR	
C	FUTURE TERMINAL	
D	FUTURE ARFF FACILITY	
E	FUTURE CARGO FACILITY	
	N.A. = NO INFORMATION AVAILABLE	

NON-STANDARD CONDITION

NO.	DESCRIPTION	EXISTING CONDITION	STANDARD CONDITION	FUTURE CONDITION	REMARKS
	NONE IDENTIFIED				

REVISIONS

NO.	DESCRIPTION	DATE

R/W COORDINATES & ELEVATIONS

	EXISTING RUNWAY 17	FUTURE RUNWAY 17	EXISTING RUNWAY 35	FUTURE RUNWAY 35	EXISTING RUNWAY 9	FUTURE RUNWAY 9	EXISTING RUNWAY 27	FUTURE RUNWAY 27
LATITUDE	44°30'12.45"N	44°30'19.83"N	44°29'14.62"N	44°30'19.83"N	44°30'07.04"N	44°30'06.14"N	44°29'53.11"N	44°29'53.82"N
LONGITUDE	123°17'27.88"N	123°17'26.63"N	123°17'37.74"N	123°17'26.63"N	123°17'30.38"N	123°17'27.26"N	123°16'42.16"N	123°16'44.59"N
ELEVATION	241.0'	241.0'	245.0'	245.0'	241.0'	241.0'	244.0'	244.0'

Phase I
Phase II
Phase III

SPONSOR SIGNATURE

SPONSOR SIGNATURE DATE

NOTES

1. This drawing reflects planning standards specific to this airport, and is not a product of detailed engineering design analysis. It is not intended to be used for construction documentation or navigation.
2. This plan was developed using the "Airport Layout Plan" for Corvallis Municipal Airport, by W&H Pacific, Portland, Oregon, 1990.

17° 57.3' E Mag. Dec. October 2000 .09'1.7' Annual Change
True North

Corvallis Municipal Airport

Corvallis, Oregon

Figure G1
Phasing Plan

Barnard Dunkelberg & Company
Tulsa, Oklahoma

FEBRUARY 2002 — SCALE AS NOTED — G.8