



## A Inventory of Existing Conditions

**INTRODUCTION.** The Astoria Regional Airport, owned and operated by the Port of Astoria, is a general aviation airport located in Warrenton, Oregon. The Airport is adjacent to the Oregon Coast Highway (US 101) and the Youngs Bay area at the mouth of the Columbia River. The natural characteristics of the area around the Airport are impressive, including forested hillsides, the pacific coastline, and the immense Columbia River. It should also be noted that the Airport is located within ten minutes of the City of Astoria, 20 minutes of the City of Seaside, and only 40 minutes of Cannon Beach and the Long Beach Peninsula.

While airport planning documents related to the layout of airport facilities have been kept up-to-date, an overall master planning study of airport facilities has not been completed since 1993. During this time, aviation issues on the local, regional, and national levels have changed. This Airport Master Plan Update is intended to provide a comprehensive evaluation of the Airport, and result in a well-conceived, long-term facilities and operational plan for accommodating the anticipated future aviation demand. The future requirements will be evaluated not only from the standpoint of aviation needs, but also in consideration of the relationship of airport facilities to the surrounding land uses and the community as a whole. This planning document will focus on a complete and comprehensive aviation facility, with the overall goal being facilities development that can accommodate future demand that is not significantly constrained by its environs.

This initial *Inventory* chapter will examine three basic elements of the Airport, which are physical facilities (runway, taxiways, aircraft parking aprons, hangars, ground access, etc.); the relationship to the airport/airspace system; and the airport environs. Subsequent chapters will detail existing aviation activity occurring at the Airport, the Airport's forecasts of aviation activity, and will evaluate the existing facility's ability to safely and efficiently meet the demands of the projected aviation activity. Alternatives will be analyzed that provide necessary facilities to meet that projected demand and the preferred future development will be recommended. Further, an implementation schedule will be provided, along with cost estimates for proposed projects, and a program for funding of proposed improvements.

The Airport provides convenient air transportation facilities for business and recreational commuters, in addition to serving as a center for aviation training and pleasure flying for area residents. The Airport also supports US Coast Guard and military missions by accommodating both fixed wing and helicopter activity, and has a military fuel contract. The Airport and its associated aviation-related businesses and facilities represent a vital and significant economic asset to the region. The Airport's relative location within the region is illustrated in Figure A1, *AIRPORT LOCATION MAP*.

### Airport Role and Facilities

The Airport is owned and operated by the Port of Astoria. The Airport is classified as a general aviation airport by the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). As illustrated in Figure A2, *AIRPORT VICINITY MAP*, Astoria Regional Airport is located in northwest Oregon.

- **Airport Reference Point (ARP)<sup>1</sup>:**
  - Latitude 46° 09' 28.7000"N
  - Longitude 123° 52' 43.3000"W
- **FAA Location Identifier: AST**
- **National Plan of Integrated Airport Systems (NPIAS) Classification:**
- **GENERAL AVIATION**
- **Acreage: 870 acres**
- **Elevation: 14.9 feet above mean sea level<sup>2</sup>**
- **Mean Maximum Temperature of the Hottest Month: 68.8°F (July)**

### Airside Facilities

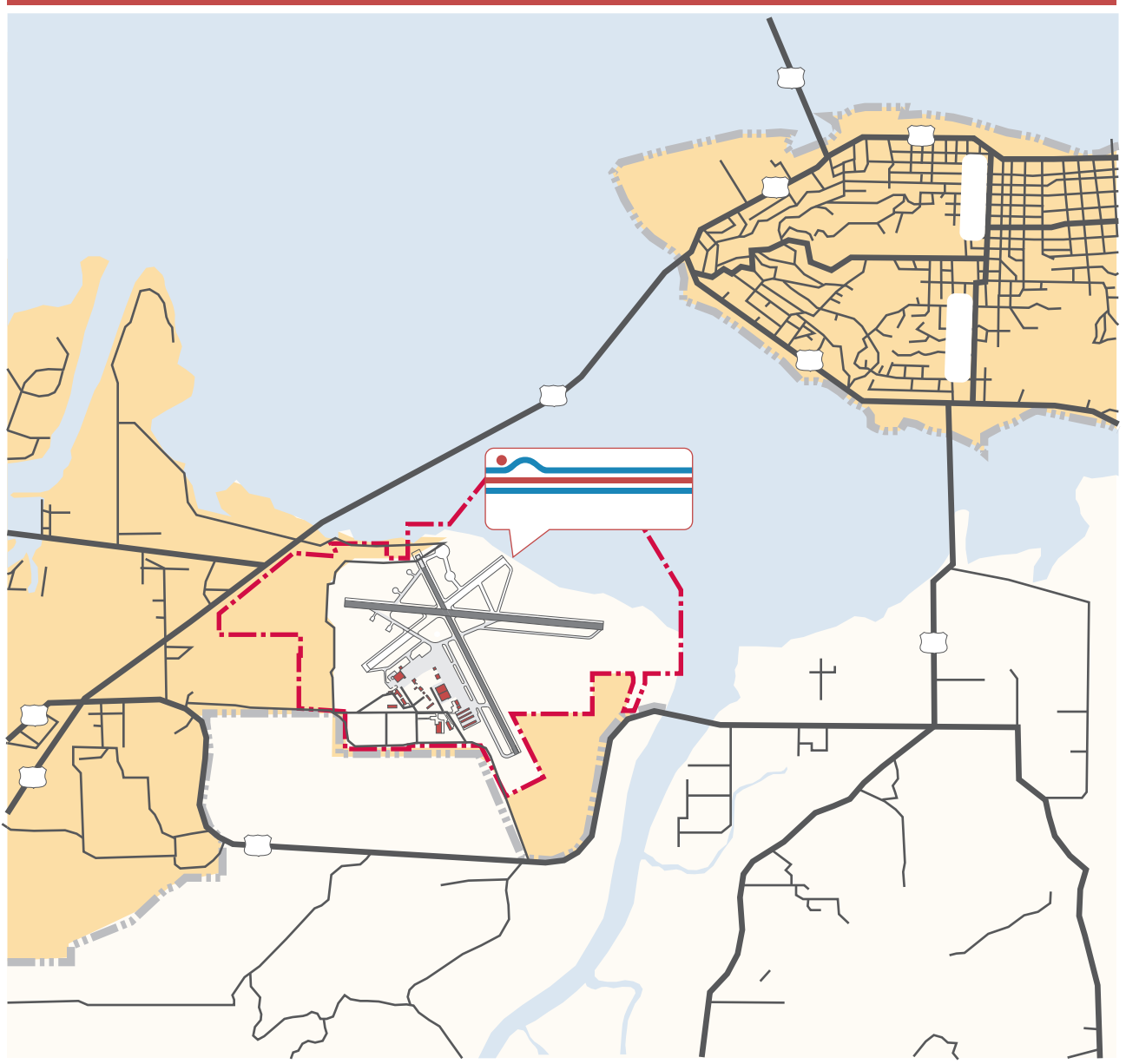
**Runways.** Astoria Regional Airport is operated with two runways, Runway 08/26 and Runway 13/31. Figure A3, entitled *EXISTING AIRPORT LAYOUT*, provides a graphic presentation of the existing airport facilities. Runway 8/26 is 5,796 feet in length and 100 feet in width, and is generally oriented in an east/west direction. Runway 8 has a displaced threshold of 300 feet to accommodate the FAA safety area standards and Runway 26 has a displaced threshold of 715 feet to achieve proper approach slope clearances over the adjacent dike.

<sup>1</sup> FAA ASIS Datasheet, 3/15/06, survey 10/30/97.

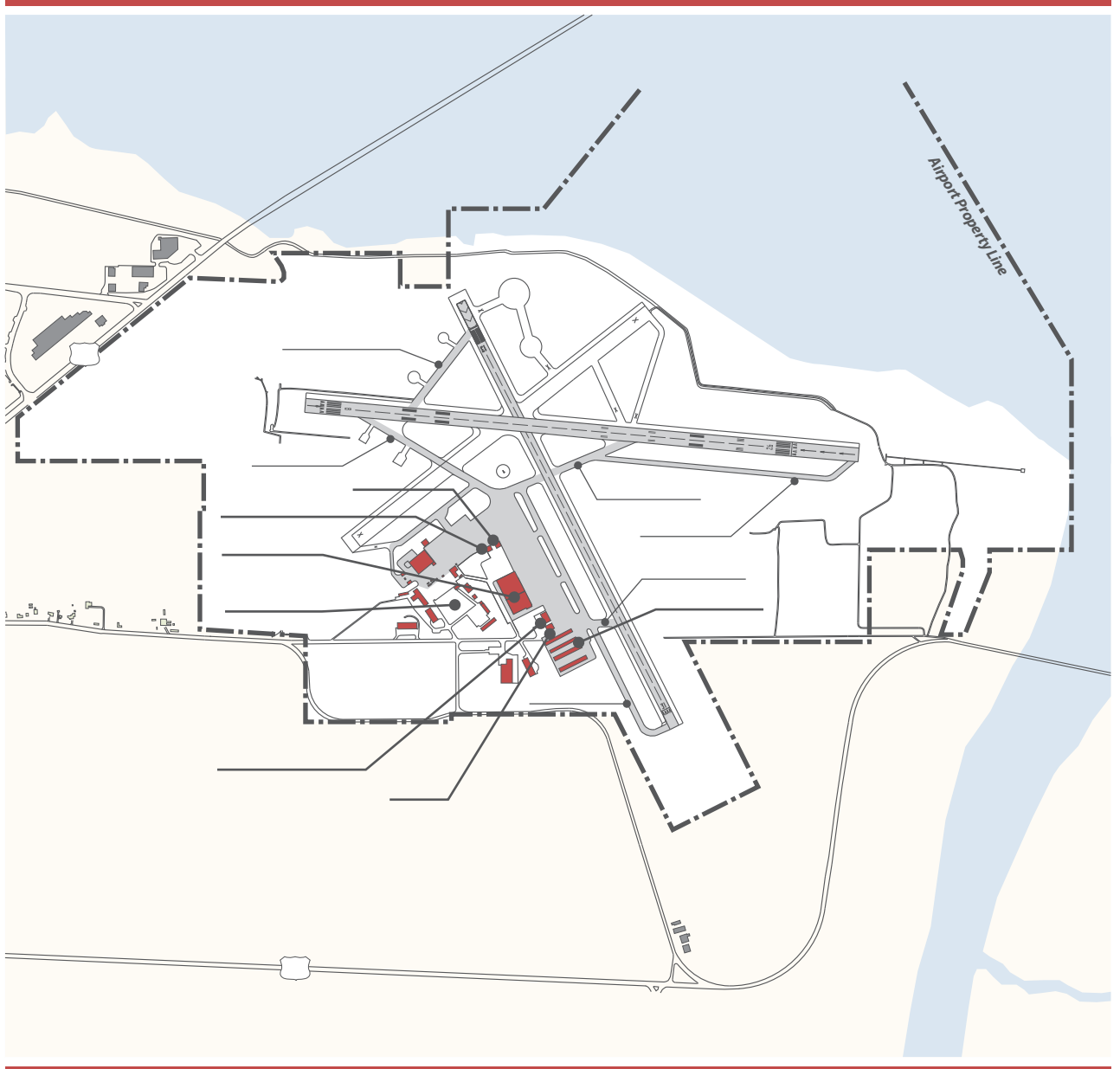
<sup>2</sup> Ibid.



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Runway 8 has a four-light Visual Approach Slope Indicator lighting system (VASI) and Runway End Identifier Lights (REILs). In support of its Instrument Landing System (ILS) approach capabilities, localizer and glide slope antenna, Runway 26 has a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR).

Runway 13/31 is 4,467 feet in length and 100 feet in width, and is generally oriented in a northwest/southeast direction. The Runway 31 threshold has been relocated 304 feet from the pavement end, and Runway 13's threshold has been relocated 200 feet from the pavement end. Both runway ends have been relocated in order to achieve FAA safety area standards. Runway 13 has a four-light VASI and REILs. Runway 31 has a four-light Precision Approach Path Indicator lighting system (PAPI). All are owned and maintained by the FAA.

Both runways are equipped with Medium Intensity Runway Lights (MIRL). Both runways are constructed of asphalt and have a gross weight bearing capacity of 60,000 pounds single wheel, 76,000 pounds dual wheel, and 119,000 pounds dual tandem wheel main landing gear configuration.

**Taxiway System.** In addition to the runways, the airside facilities at the Astoria Regional Airport consist of a taxiway system that provides access between the runway surfaces and the landside aviation use areas. Astoria Regional Airport has a semi-parallel taxiway system, serving each runway end (see previous illustration entitled *EXISTING AIRPORT LAYOUT*). The Taxiway A system serves Runway 8/26 and the Taxiway B system serves Runway 13/31. For night use, the taxiway system is equipped with Medium Intensity Taxiway Lights (MITL).

### Landside Facilities

Landside development at the Airport includes commercial passenger terminal facilities, aircraft parking aprons, Fixed Base Operator (FBO) hangars, general aviation facilities, fuel storage facilities, and access roadways.

**Passenger Terminal Facilities.** The Airport has historically had a terminal building that was centrally located west of Runway 13/31, and south of Runway 8/26. The terminal has been utilized for scheduled and chartered airlines, when they have operated at the Airport in the past. Since there currently is no scheduled commercial air service at the Airport, the terminal building is being used for helicopter operations in support of the Columbia River Bar Pilots.

**US Coast Guard Facilities.** The US Coast Guard currently has eight significant structures on the Airport, including a large helicopter maintenance hangar and an aircraft-parking apron.

**Fixed Base Operator (FBO) and Commercial Aviation Businesses.** The Airport is currently served with two FBOs: Twiss Air Service, and Astoria Flight Center. The FBO facilities are centrally located on the west side of Runway 13/31. Twiss Air Service provides aircraft maintenance, annual inspections and repairs, flight instruction, aircraft rentals, and meeting facilities. Astoria Flight Center is operated by the Port of Astoria and provides FBO services, including fuel, aircraft support, pilot and passenger facilities, and catering.

Several other businesses dedicated to assisting pilots and guests are located on the Airport, including Lektro (an aircraft towing equipment manufacturer that occupies the two, large World War II era hangars), Runway Café (an onsite restaurant), and United Parcel Service. An Industrial Park is also located adjacent to the Airport for light to medium industrial development or air freight distribution warehouse capacity.

**General Aircraft Aprons.** The main aircraft-parking apron at Astoria Regional Airport is located west of Runway 13/31 and south of Runway 8/26. This apron consists of approximately nine acres of aircraft parking and movement space.

**Hangars and Aircraft Storage.** Aircraft storage at the Airport is accounted for through the use of tiedowns and hangars. The general aviation aircraft apron provides 40 marked aircraft tiedown locations for use by both based and transient aircraft. This total does not account for additional apron space that could be used for similar purposes, including the apron area located in front of the FBOs. Note that outdoor storage of based aircraft at the Airport is not preferred by users due to the potential for adverse weather conditions.

General aviation hangar storage units (T-hangars) are located in the area south of the FBO facilities. These facilities are primarily comprised of four T-hangar structures that account for 40 individual T-hangar units. Additionally, there are two conventional hangars that are utilized for storage and operations by the FBOs (Twiss Air and Astoria Flight Center).

It is important to recognize that hangar facilities are in high demand at Astoria Regional Airport. As such, the Port of Astoria has programmed construction of an additional ten to 20 T-hangar units in two separate structures over the next few years (2005-2009). The most recent T-hangar facility was constructed in 2002, and was at capacity within two months of being built.

**Fuel Storage Facility.** Astoria Regional Airport has fuel storage facilities of one 12,000-gallon Av Gas, above-ground, double-walled fuel tank, and one 12,000 gallon Jet A above-ground, double-walled fuel tank. These facilities are located on the general aviation aircraft apron, to the south of the cafe and to the north of the terminal building.

**Air Traffic Control Tower (ATCT).** Astoria Regional Airport does not have an Air Traffic Control Tower.

**Aircraft Rescue and Fire Fighting (ARFF) Facility.** The ARFF facility, equipment, and personnel at the Airport are provided by the US Coast Guard through a mutual assistance agreement with the Port of Astoria.

**Automated Surface Observation System (ASOS).** Astoria Regional Airport currently maintains an Automated Service Observation System (ASOS) with a frequency of 135.375 MHz. This system is designed to provide 24-hour, minute-by-minute observations and performs the basic observing functions necessary to generate an aviation routine weather report and other aviation weather information. Information can be transmitted over a discrete VHF radio frequency or the voice portion of the VOR (frequency of 114.0 MHz).

#### Existing Ground Access and Parking Facilities

**Ground Access.** Regional ground access to the Airport is provided by the Oregon Coast Highway (US Highway 101), which is adjacent to the Airport's western edge. From US 101, the Airport is accessed using SE Marlin Avenue (US 105) and SE 12<sup>th</sup> Place (Airport Road).

**Parking Facilities.** Automobile parking facilities at the Airport are provided in conjunction with the needs of a specific facility.

**Industrial Park.** The Astoria Regional Airport Industrial Park is a 45-acre site adjacent to the Airport that is available for light to medium industrial development or air freight distribution warehouse capacity.

## Airspace System/Navigation and Communication Aids

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

### Air Traffic Service Areas and Aviation Communications

Within the continental United States, some 22 geographic areas are under Air Traffic Control (ATC) jurisdiction. Air traffic controllers in Air Route Traffic Control Centers (ARTCC) provide air traffic services within each area. Astoria Regional Airport is contained within the Seattle ARTCC service area, which includes the airspace in most of Washington and Oregon, and portions of Idaho, California, and Montana. The Airport is equipped with a Common Traffic Advisory Frequency (CTAF) on frequency 122.8 MHz.

### Airspace and NAVAIDS Analysis

Navigational aids (NAVAIDS) are instruments providing navigation readings to pilots in appropriately equipped aircraft. The primary navigational aid available for use by pilots near Astoria Regional Airport is the Astoria VOR-DME (frequency 114.0 MHz). A VOR-DME system is a Very High Frequency Omnidirectional Range Station (VOR) with Distance Measuring Equipment (DME) transmitting very high frequency signals, 360° in azimuth oriented from magnetic north. It is used to measure, in nautical miles, the slant range distance of an aircraft from the facility.

Other NAVAIDS within the vicinity of Astoria Regional Airport include a non-directional beacon (NDB), which is a general-purpose low- or medium-frequency radio beacon that aircraft equipped with a loop antenna can home in on or determine its bearing relative to the sending facility. The Karpen NDB (255 PEN), is located 12.2 nautical miles (NM) east of the Airport.

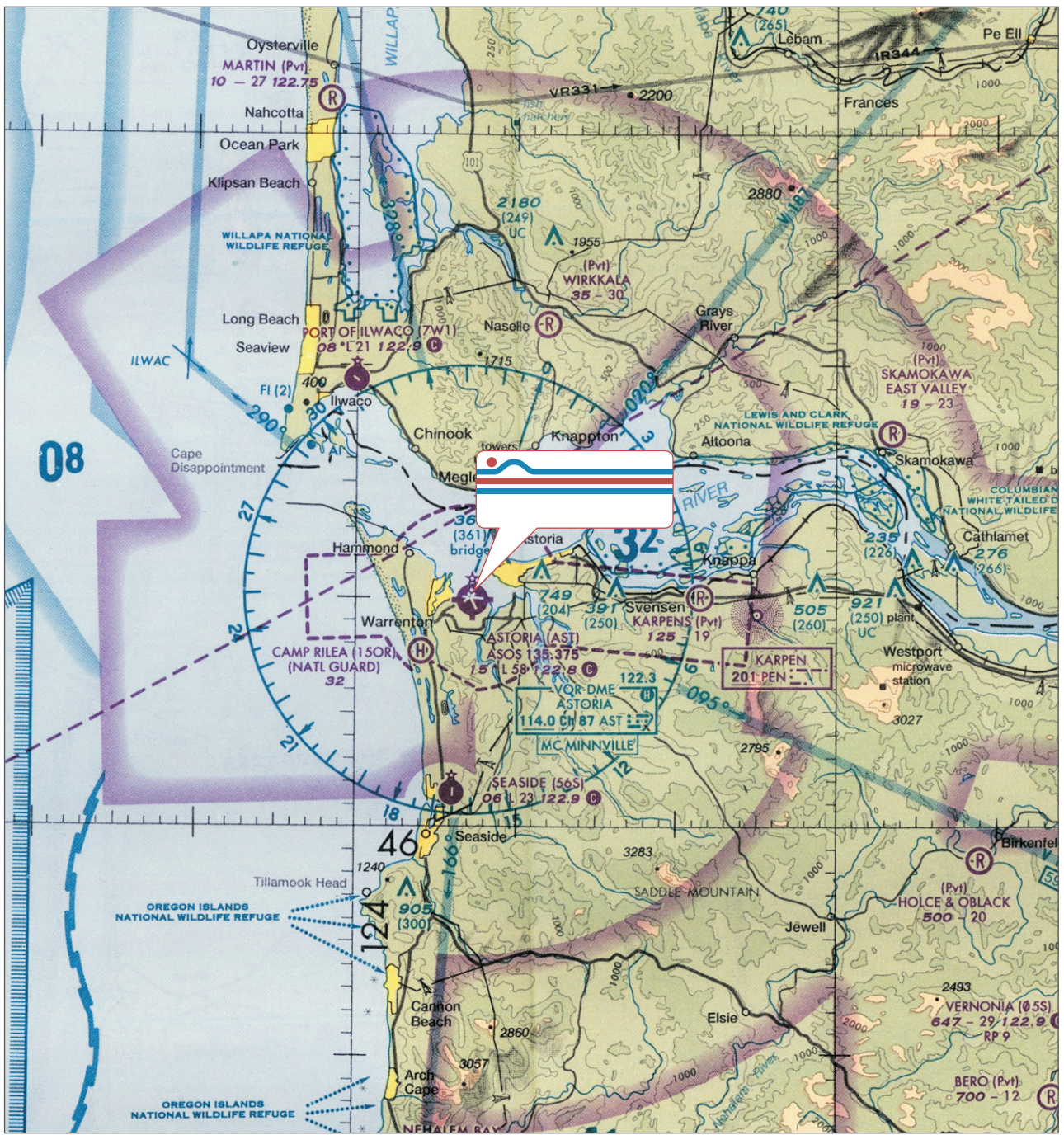
Local airspace surrounding Astoria Regional Airport is designated as Class E airspace. The configuration of each Class E airspace area is tailored to individual airports. Generally, Class E airspace consists of the immediate controlled airspace at airports without control towers and is intended to provide a transition area from terminal or en-route environments. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. This airspace is also configured to accommodate any existing instrument procedures. Within Class E airspace, radio communications and transponder are not required to operate under Visual Flight Rules (VFR) conditions, unless the Airport has an air traffic control tower; however, Instrument Flight Rules (IFR) flights must be capable of communicating with

regional ATC (Center) and be Mode C Transponder equipped (capable of reporting altitude). Currently, there are four published instrument approach procedures at the Airport. These are listed in the following table entitled *INSTRUMENT APPROACH PROCEDURES*. The following illustration entitled *AIRSPACE/NAVAIDS SUMMARY* depicts the local airspace.

Table A1  
**INSTRUMENT APPROACH PROCEDURES**

<b>Approach Type</b>	<b>Runway Designation</b>	<b>Ceiling Minimums</b>	<b>Visibility Minimums</b>
ILS	26	292 feet	$\frac{3}{4}$ mile
VOR	8	660 feet	1 mile
GPS	8	600 feet	1 mile
COPTER LOC/DME 257°	---	500 feet	$\frac{1}{2}$ mile

**Source:** US Terminal Procedures. --- Data not available.



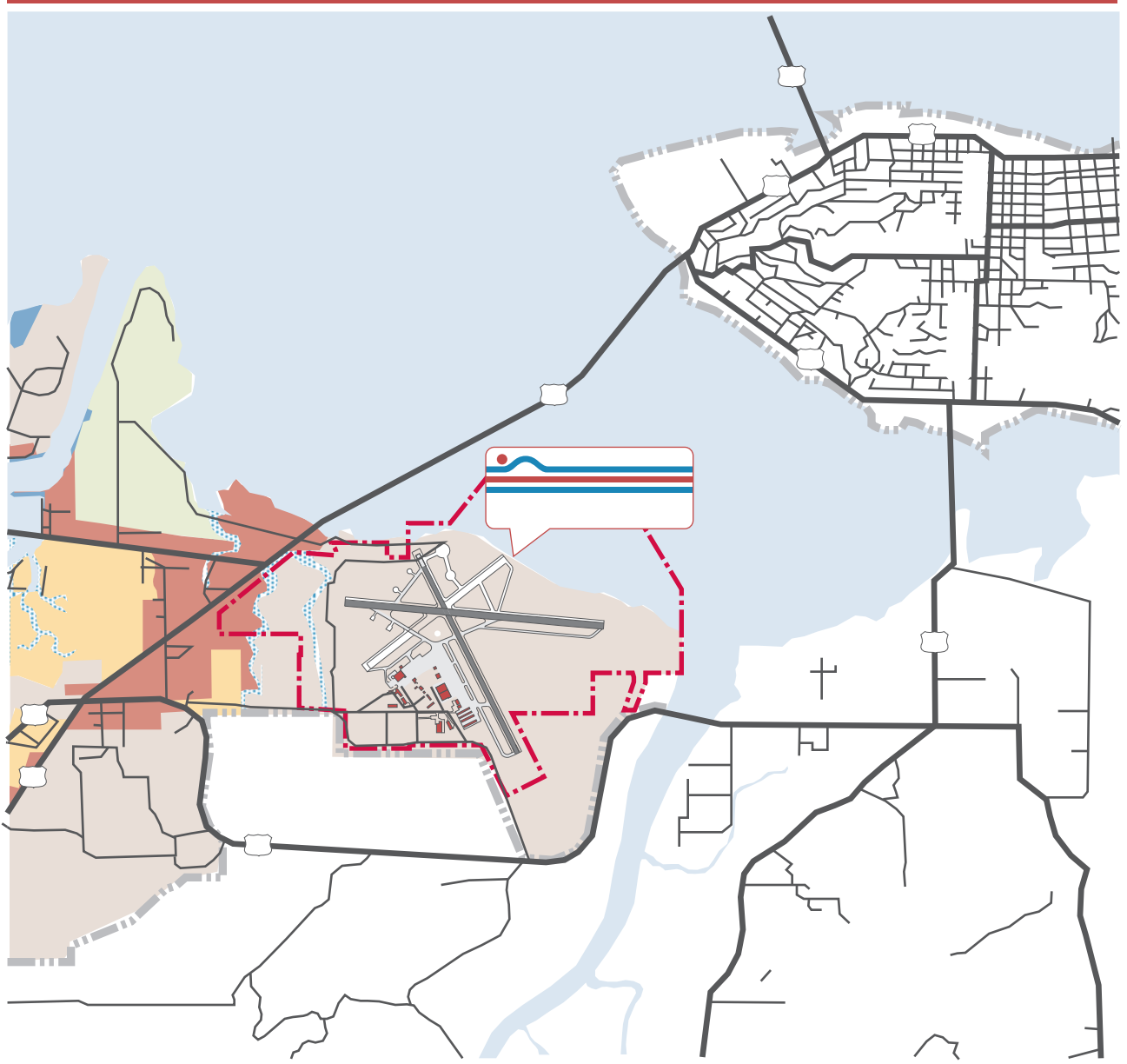
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## Airport Environs

The Astoria Regional Airport is located within the limits of the City of Warrenton, Oregon. Because the operation of an airport influences surrounding land uses, and adjacent land uses have an influence on the operation of an airport, it is critical that any airport planning study gain an understanding of existing and proposed land use types in the area near that airport. The following text and illustrations describe existing land use, existing zoning, and future land use within the airport environs.

### Zoning

As part of the State of Oregon's growth management law, the City of Warrenton 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 by setting 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. Astoria Regional Airport, designated as a general industrial use, is located inside both Warrenton's city limits, and its Urban Growth Boundary. The shoreline areas north and east of airport property are designated with aquatic natural zoning. The land west of the Airport is designated primarily for commercial uses, along with some residential and industrial zoning. South of the Airport, the majority of the land is outside of the City of Warrenton and is rural in nature. To a great degree existing zoning patterns match existing land use patterns. Existing zoning within the vicinity of the Airport is shown in the following illustration entitled *GENERALIZED EXISTING ZONING*.



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## Financial Inventory

The primary goal of this task is to gather materials that summarize the financial management of the Airport. In addition, it is important to develop an understanding of the financial structure, constraints, requirements, and opportunities for airport activities as related to the development of a Capital Improvement Program (CIP). The documents that have been gathered and reviewed for this financial inventory will be used to formulate a reasonable and financially sound CIP with which to fund projects identified in the master planning process.

With this goal in mind, the Airport's budget statements have been gathered for fiscal years 2000 through 2004. In addition, Federal and state capital improvement grant information is being compiled, including current funding policies. The Airport's current five-year Capital Improvement Program will also be reviewed.

The Airport is operated as one of the cost centers of the Port of Astoria. It generally operates as a financially independent entity from other port functions; however, the Port does provide general fund support when needed. As identified in the budget documentation, major sources of revenue for the Airport include lease income, fuel sales, and grants. Major expenditures include outside repairs and services, operating materials and supplies, resale fuel, utilities, capital expense, and interest.

## Summary

The goal of this chapter is to provide general background information pertaining to the Airport, its aviation-operating environment, its physical surroundings, and its financial situation. The *Inventory* chapter is vital from the standpoint that it will be used as a reference in the analysis and design process that is required to prepare the Airport's future Development Plan.

The next step in the planning process is to formulate forecasts for the quantity and type of future aviation activity expected to occur at the Airport during the forthcoming 20 years.