Northwest Florida Regional Airport
Airport Master Plan Update

March 2010

NORTHWEST FLORIDA
FLY VPS
REGIONAL AIRPORT
A SERVICE OF OKALOOSA COUNTY

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NORTHWEST FLORIDA REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

PREPARED FOR:

PREPARED BY:

MARCH 2010

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES

GOALS AND OBJECTIVES

Northwest Florida Regional Airport

1

1.1 GENERAL

This chapter provides general direction to the study with respect to the development of concepts and plans for the Northwest Florida Regional Airport (VPS or Airport). The general approach is to consider alternative airport development plans. The proposed alternatives will address landside/airside facilities, commercial development, and the Airport's role in Okaloosa County. Additionally, the master plan update for VPS will have a specific approach that will provide planning and development guidance to satisfy aviation demand and stimulate the local economy. Ultimately, the master plan update will serve as a general guideline for development of VPS.

Some of the key issues, in no specific order, are as follows:

- Current and anticipated increases in commercial aviation activity
- The need to expand conditions of the Airport terminal and surrounding buildings, equipment, and facilities to meet the forecast aviation demand
- Ground transportation facilities and services (limousines, taxis, shuttles, etc.)
- General automobile parking requirements
- Incorporate the interests of the public, Airport users, and government agencies in the planning process

The master plan will provide information and guidance to manage and develop facilities to meet the forecast growth for the next 20 years.

1.2 GOALS

The master plan update for VPS will provide the Okaloosa County Airport Administration (OCAA) with planning guidance to help ensure that Airport facilities will be adequate to meet both short- and long-term demand for aviation services. In that respect, the intent of the document is to serve as a management guide for the implementation of necessary improvements to meet the expected growth in aviation demand over a planning period of 20 years, ending in 2027.

The Florida Department of Transportation (FDOT), Federal Aviation Administration (FAA) and OCAA share the funding for the Northwest Florida Regional Airport Master Plan Update. Coordination of this study between these agencies will be accomplished in stages during the preparation of this master plan. In addition, public input will be obtained through public meetings before the OCAA at key milestones in the planning project.

This master plan study will be prepared in accordance with FAA Advisory Circulars AC 150/5070-6B, *Airport Master Plans*, AC 150/5300-13, *Airport Design*, FDOT Guidebook for Airport Master Planning and other related federal and state standards. In addition, guidance will be incorporated from the FDOT Aviation Office, the OCAA, and other concerned local government agencies.

The master plan provides an effective written and graphical representation of the ultimate development of the Airport and of anticipated land uses on and adjacent to the Airport, while establishing a schedule of priorities and phasing for the various improvements proposed. The master plan will provide information and guidance to manage and develop facilities to meet the forecast growth and stimulate business investment in the local economy over the next 20 years. Realistic master planning is a continuing and evolutionary process, typically due to the long lead times usually required

for major airport projects. Though many changes are likely to take place before facilities are designed, approved, and built to completion, a comprehensive master plan and approved Airport layout plan (ALP) is essential for an airport to qualify for and receive federal and/or state assistance, and will prove as an invaluable guide for management decisions and marketing of the Airport to potential tenants.

In order to address a number of internal and external factors that could affect VPS, a list of goals and objectives have been identified in order to guide the study effort. These goals and objectives are listed below in no particular order.

1.2.1 Goal No. 1

Provide planning and development guidance to satisfy anticipated aviation demand and stimulate Airport development and the local economy.

Objectives:

- Provide adequate airside and landside facilities to meet anticipated demand, while meeting all FAA requirements.
- Effectively market commercial operators and facilities.
- Develop updated Airport plans that illustrate the vision and ultimate development goals of the Airport.

1.2.2 Goal No. 2

Provide an Airport that is safe and reliable.

Objectives:

- Protect FAA mandated safety areas and other clear zones.
- Ensure that airside and landside operations and facilities meet all applicable security standards.
- Develop facilities to meet the demands of the current and future critical aircraft.

1.2.3 Goal No. 3

Develop the Airport and its vicinity to minimize negative environmental impacts.

Objectives:

- Identify the major environmental issues of concern.
- Minimize potential environmental impacts, and provide special attention to minimizing and/or avoiding residential relocation, air and water pollution, and wetland impacts.
- Provide a facility that minimizes adverse effects on other environmental concerns.
- Develop an efficient Airport layout to provide ease of air and ground access.

1.2.4 Goal No. 4

Develop an Airport that supports local and regional economic goals while accommodating new opportunities or shifts in development patterns.

Objectives:

- Achieve a level of service and user convenience such that the Airport continues to be a positive factor in regional economic development decisions.

- Develop the terminal area systems so that the Airport may be an attractive location for additional commercial service operators, air cargo, and other aviation related businesses.
- Identify financial resources available for funding projects identified and recommended, as well as identify the priority of project implementation for integration into the time phased Joint Automated Capital Improvement Program (JACIP).
- Develop an ALP that easily integrates with existing and proposed transportation infrastructure, to encourage economic growth.

1.2.5 Goal No. 5

Ensure adequate and convenient ground access to the Airport.

Objectives:

- Provide safe access and easy-to-follow guidance signs to Airport roadways and facilities.
- Maintain close coordination with FDOT, and local transportation groups.

1.2.6 Goal No. 6

Develop an Airport that is consistent with federal, state, regional, and local plans.

Objectives:

- Develop the Airport in accordance with local land use and transportation plans.

The previous goals and objectives reflect policy goals to be reached through the master planning process. These goals include the ultimate development of facilities to serve the existing and future aviation needs of the region, and provisions for the type of development that will yield the most public benefit of the investment represented by the Airport. Finally, these goals must be manageable within existing limitations of funds and design principles.

1.3 TASKS

Some of the key tasks involved in the master planning process include: evaluating existing and anticipated aviation activity, existing and future facilities, environmental constraints, and the Airport's overall participation in the national and state aviation system plan. An important component of the Airport master plan process is a public forum for the development of the study. The master plan for VPS will include the following steps:

- **Data Collection and Evaluation** – Inventory of existing airport facilities.
- **Aviation Demand Forecasts**– Reviewing previous forecasts and preparing updated forecasts that will provide short, intermediate, and long range projections of aviation demand.
- **Development Alternatives** – Identify development alternatives and select a final development concept utilizing a strategic/business plan approach.
- **Environmental Overview** – Identify potential environmental factors that could affect the feasibility of the development concept for the Airport.
- **Construction Phasing Plans** – The schedule of improvements, including costs for the short term, intermediate and long term time frames of the airport development.

- **Cost Estimate and Capital Improvement Program** – Development of project cost estimates, a capital improvement program will be developed for the Airport to include all short term projects.
- **Terminal Area Plan and Airport Property Map** – A general overview of existing and proposed access and potential multi-modal networks to and from the Airport.
- **Public Involvement** – Public information processing to obtain input for the master planning process.

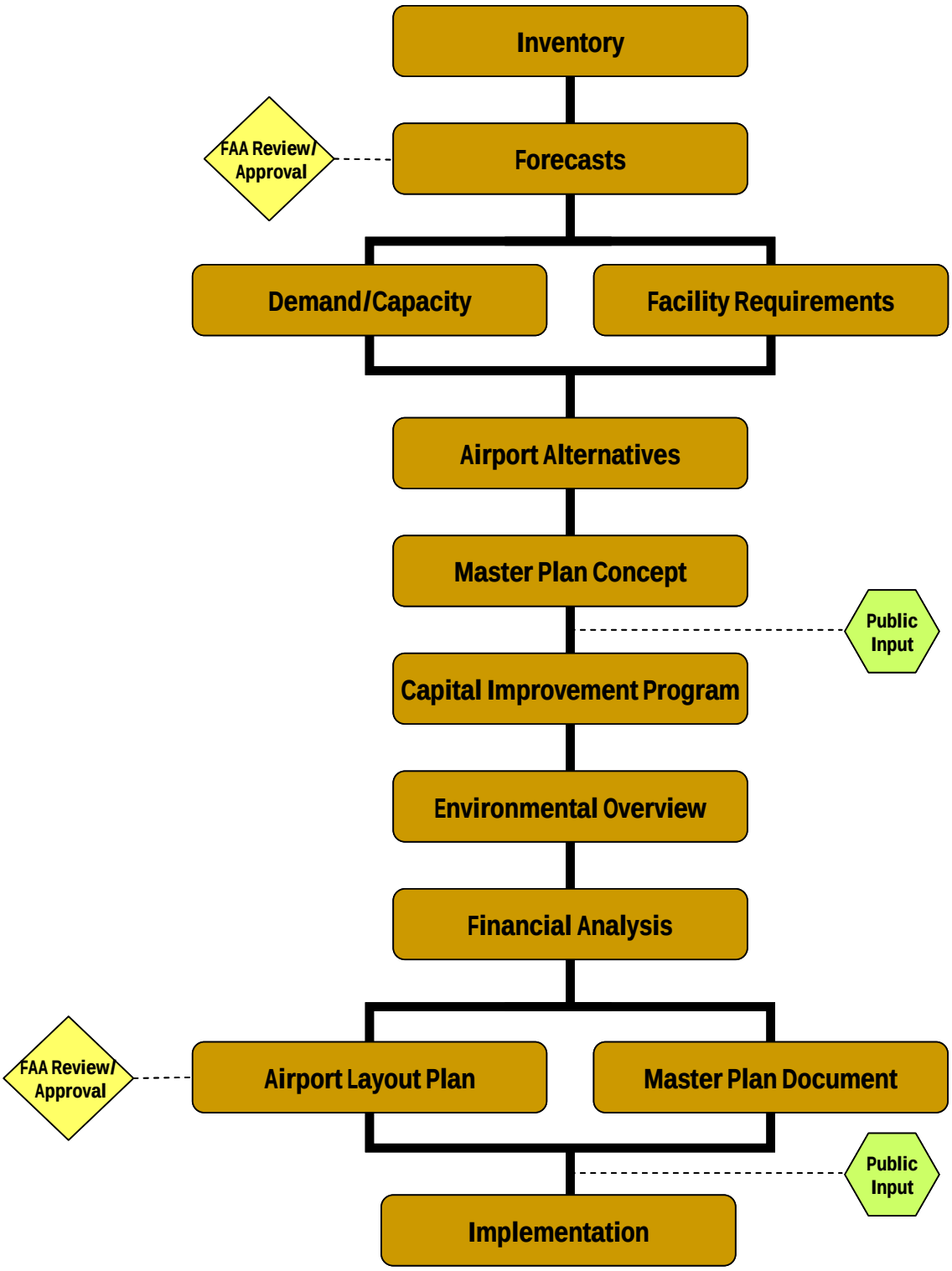
A graphic representation of this process is depicted in **Figure 1-1**.

1.4 PRIOR PLANNING DOCUMENTATION

In the development of this master plan update, prior studies and reports regarding VPS developed within the past nine years will be identified, updated, and used as supporting material. These studies are as follows:

- **Northwest Florida Regional Airport Master Plan Update, 1998 –** prepared by PBS&J – issued in 1998.
- **Northwest Florida Regional Airport Layout Plans Update, 1998** – prepared by PBS&J – issued in 1998.
- **Northwest Florida Regional Airport Digital Data Development & 3DAAP TERPS Development, 2001** – prepared by PBS&J – issued in May 2001.

Figure 1-1. Steps in the Master Planning Process



INVENTORY OF EXISTING FACILITIES

Northwest Florida Regional Airport

2

2.1 GENERAL OVERVIEW

A complete and accurate inventory of airport facilities is an essential part of an effective master plan as it provides the background information necessary for the remaining portions of the study. The inventory task for the Northwest Florida Regional Airport (VPS) was accomplished through observations of the existing airport facilities, information from Eglin Air Force Base and data compiled from existing airport records, including:

- Eglin Air Force Base Environmental Baseline Survey, November 2005
- Eglin Air Force Base Final Environmental Assessment, June 2006
- Record drawings from recent construction projects

This section provides a general description of the airport facilities. It also describes data relevant to the airport's history, geographic locale, climate, and operational role in the aviation environment.

2.2 AIRPORT HISTORY

Civilian aviation activity commenced in 1957, when the U.S. Air Force (USAF) supplied Building-89 as the "Okaloosa County Air Terminal" on Eglin Air Force Base (AFB). In an effort to provide Department of Defense (DoD) contractors and USAF family members' access to the Eglin community, scheduled commercial service was provided by the Airport's sole civilian operator, Southern Airways, which conducted two (2) flights per day. Passengers entered the Base's east side through the TAC gate, in Valparaiso, Fl, hence the Airport's three-letter designator, "VPS". More than ten (10) years later (1968) Southern Airways was operating four (4) daily DC-9 flights, and Air New Orleans conducted two (2) daily flights to/from New Orleans, LA.

March 13, 1975 marked the opening day of the "Okaloosa Air Terminal" which was 32,000 square feet, and cost $1.7 million to construct. In its first year, the Terminal served 185,000 passengers, all on one of Southern Airway's twelve (12) daily departures.

The Airport was since renamed "Northwest Florida Regional Airport", and in November, 2004 the Airport completed its largest civilian expansion project to date; the current 110,000 square foot passenger terminal, **(Figure 2-1)** aircraft parking apron expansion, second parallel connector taxiway, and additional public auto parking. Approximately 800,000 passengers were served by the new terminal in its inaugural year. The main terminal complex and acts as the buffer between civil land use and two (2) of the

Figure 2-1. Current Northwest Florida Regional Passenger Terminal

Source: http://www.flyvps.com/

Nation's longest and widest runways 12,000-foot by 300-foot and 10,000-foot by 300-foot, equipped with the latest technology in precision instrument landing systems and ground approach control radar systems.

2.3 AIRPORT DESCRIPTION

VPS is a joint-use airport located on Eglin Air Force Base in Okaloosa County, Florida. VPS accommodates a mix of military **(Figure 2-2)** and commercial aircraft operations. With nearly 5,000,000 square yards of pavement, Eglin Air Force Base (AFB) is located on State Road 85, approximately one mile southwest of Valparaiso and midway between the city of Fort Walton Beach and the city of Niceville. **Figures 2-3** and **2-4** illustrate the location and vicinity map of the surrounding communities and depicts the general location of the VPS public terminal facility within the Eglin AFB property.

Figure 2-2. Eglin-based Components of the AAC

Source: http://www.acc.af.mil/photos.

The airfield at Eglin is owned and operated by the U.S. Department of Defense (DOD) and currently accommodates the Air Armament Center (AAC), a product center of the Air Force Material Command. Eglin-based components of the AAC include the 46th Test Wing and the 96th Air Base Wing. The 33rd Fighter Wing is a major tenant of Eglin Air Force Base, and was re-designated under Air Education and Training Command in October, 2009. Their previous fleet consisted of a large contingent of F-15C and F-15D Eagles. However, their re-designation established the Wing's responsibility of F-35 "Lightning II" Joint Strike Fighter (JSF) pilot and maintenance training for the Marine Corp, Navy, and Air Force. Initially, 59 aircraft and three flying squadrons, one for each service/aircraft variant are to be established at Eglin AFB.

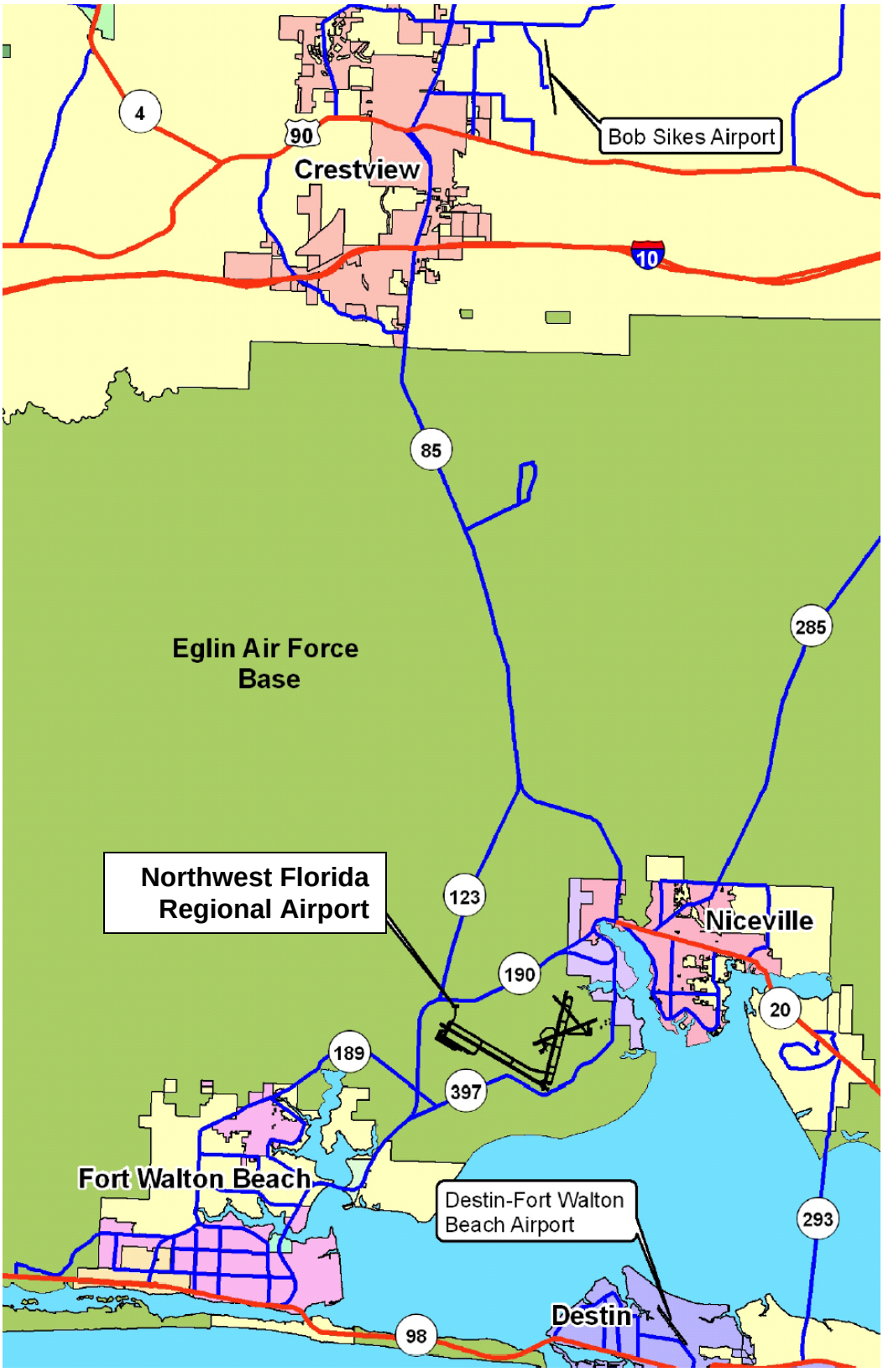
The airfield is also home to the annual Eglin Air Show, where the U.S. Air Force Thunderbirds and the West Coast F-15 aerial demonstration teams join other military and civilian aerial demonstration teams for this two-day event each spring.

VPS consists of a public-use commercial service terminal with associated airside and landside facilities, located on the western side of the airfield, north of the Runway 12 threshold. The airport offers the only commercial airline service in the county and provides scheduled passenger service for a large percentage of the population and visitors in the northwest Florida area. The public-use facilities are owned and operated by Okaloosa County. VPS was selected as the recipient of the Florida Department of Transportation's "Outstanding Commercial Service Airport of the Year" award in 2005.

Figure 2-3. Location Map

Source: AVCON, Inc., 2007.

Figure 2-4. Vicinity Map of Surrounding Communities



Source: AVCON, Inc., 2007.

2.3.1 Local Environment

Commonly referred to as "the world's most beautiful beaches," the Gulf Coast area located in Okaloosa County is famous for the sugar-white sands and warm, emerald-green waters. Along with the beaches, numerous golf courses, tennis courts, marinas, diving centers and other facilities make the northwest Florida region a center for outdoor activities, particularly during a six-month period beginning each March. The area offers a moderately warm climate with subtropical weather most of the year. Average high temperatures range from approximately 60^{o} Fahrenheit (F) in the winter to approximately 91^{o}F in the summer.

Major industries in the local area include tourism and military defense-related services, such as defense weapon system development and testing. Eglin Air Force Base is the largest employer in the region and provides thousands of military and civilian jobs for the region and the surrounding communities, including Niceville, Fort Walton Beach, Shalimar, Destin and Crestview. Defense related employment is a major driver of the local economy, with Eglin Air Force Base responsible for more than 8,500 military jobs and a growing number of civilian jobs, currently estimated at approximately 4,500. The Economic Development Council for Okaloosa County estimates the base's economic impact on the county at nearly $5 billion annually. VPS is also responsible for a significant local economic impact for the region, supporting more than $305 million of indirect economic activity per year and more than 4,600 area jobs.

"With 24 miles of soft white sand beaches, great fishing, golf and shopping, Okaloosa County Florida provides a great vacation destination." – Coastal Travel Guide, 2007

With historically low cost-of-living indicators compared to the state average, Okaloosa County exhibits per capita income levels that exceed the state average. According to the U.S Census Bureau, the population of Okaloosa County in 2006 was estimated to be slightly more than 180,000. The region is expected to experience an increase in the number of residents due to recommendations made by the Department of Defense (DoD) in their 2005 Base Realignment and Closure (BRAC) process.

In 2005, the DoD recommended relocation of the Armed Forces Reserve Center Expeditionary Combat Support units and their A-10 fleet from Naval Air Station Joint Reserve Base Willow Grove (PA) to Eglin Air Force Base. DoD also recommended establishing Eglin AFB as an Initial Joint Training Site for operation and maintenance of the new Joint Strike Fighter (JSF) F-35 aircraft. The Department is scheduled to take delivery of the F-35A beginning in 2009 and the aircraft is scheduled to start arriving at Eglin AFB in 2010. This recommendation will result in the relocation of JSF instructor pilots and operations support personnel from Luke AFB (AZ), Marine Corps Air Station Miramar (CA), and Naval Air Station (NAS) Oceana (VA). The move will also relocate various maintenance and logistics support personnel from Sheppard AFB (TX) and NAS Pensacola (FL).

Other recommendations of the BRAC process will relocate other armament testing and research units from Hill AFB (UT) and from Fort Belvoir (VA) as well as the 7th Special Forces Group (Green Beret unit) from Fort Bragg (NC) to Eglin AFB by 2010. By 2012, the BRAC recommendations are expected to introduce approximately 7,000 new Eglin members (including family members) and 5,000 government and contract employees. The DoD has estimated that these BRAC realignments could introduce an additional $473.1 million in one-time construction impacts and $473.6 million in annual recurring spending due to personnel relocations into the Okaloosa county economy.

2.3.2 Airport Property

Okaloosa County currently owns and operates the existing airport terminal located on 131 acres of Eglin Air Force Base property leased by the County from the U.S. Department of the Air Force. The lease extends through the year 2031 and currently limits commercial service operations to a maximum of 80 operations per day. Capital improvement projects at VPS are funded through FAA, State of Florida and Airport Enterprise participation. These funds are derived through airport-user fees and the County does not use any general fund monies or ad valorem taxes in operating or improving the airport facilities. **Figure 2-5** illustrates the overall location of the airport property.

2.3.3 Commercial Airline Service

VPS primarily serves the three-county region consisting of Okaloosa County, Santa Rosa County, and Walton County; however, airport users from counties beyond this region routinely utilize the airport. The airport is currently serviced by eight carriers as presented in **Table 2-1**.

Table 2-1. Current Airline Service from Northwest Florida Regional Airport

Airline	Equipment	Capacity	Direct Service to:
American Eagle	Embraer 135	37 seats	Dallas/Ft. Worth (DFW)
	Embraer 145	50 seats	
Continental Express (*operated by Express Jet Airlines*)	Embraer 135	37 seats	Tampa (TPA) Houston (IAH)
	Embraer 145XR	50 seats	
Continental Express (*operated by Chautauqua Airlines*)	Embraer 145	50 seats	Houston (IAH)
Delta Airlines	MD-88	142 seats	Atlanta (ATL) Cincinnati (CVG)
Delta Connection (*operated by Atlantic Southeast Airlines or Comair*)	CRJ-200	50 seats	Atlanta (ATL) Cincinnati (CVG)
	CRJ-700	70 seats	
Northwest Airlines	DC-9-30 DC-9-40 DC-9-50	100-122 seats	Memphis (MEM)
US Airways	CRJ-200	50 seats	Charlotte (CLT)

Sources: Northwest Florida Regional Airport Administration, March 2007; FlightAware.com, May 2007.

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REVISIONS	
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CLIENT: OKALOOSA COUNTY

PROJECT:

AIRPORT MASTER PLAN UPDATE

NORTHWEST FLORIDA REGIONAL AIRPORT

DRAWING TITLE:

AIRPORT PROPERTY MAP

PBS&J
5300 W. Cypress St.
Suite 200
Tampa, FL 33607
Tel. (813) 282-7275
Fax. (813) 637-9895
www.pbsj.com
Engineering - Planning - Architecture

AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A NICEVILLE, FL. 32578 FAX: (850) 678-0040 n OFFICE: (850) 678-0050 WWW.AVCONINC.COM

FIGURE 2-5

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DESIGN: DJD
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DATE: JULY 2007

SHEET ____ OF ____

Commercial traffic at VPS has increased at a relatively high rate over the past 16 years. The Airport has experienced an average annual growth rate of approximately 5.2 percent since 1990. Much of the growth is a result of the significant growth in industry, particularly with military/defense contracting services, and from the increasing popularity of the region's vacation destinations. The busiest months for the Airport are typically May and July, primarily due to the large influx of visitors on the respective holidays in these summer months. The least active month is typically January when the tourism industry is at its lowest activity for the year. **Table 2-2** illustrates the passenger levels and annual growth rates since 1990.

Table 2-2. Historical Passenger Levels since 1990

Year	Enplanements	Deplanements	Total	% Increase
1990	162,211	162,886	325,097	N/A
1991	156,435	157,305	313,740	-3.5%
1992	180,825	184,120	364,945	16.3%
1993	182,269	185,139	367,408	0.7%
1994	191,621	190,868	382,489	4.1%
1995	195,811	187,168	382,979	0.1%
1996	226,123	217,827	443,950	15.9%
1997	277,921	272,456	550,377	24.0%
1998	292,263	288,744	581,007	5.6%
1999	364,071	362,433	726,504	25.0%
2000	411,596	405,279	816,875	12.4%
2001	388,275	386,153	774,428	-5.2%
2002	342,183	338,277	680,460	-12.1%
2003	359,219	351,850	711,069	4.5%
2004	395,012	387,850	782,862	10.1%
2005	404,783	398,848	803,631	2.7%
2006	365,045	366,111	731,156	-9.0%

Sources: Northwest Florida Regional Airport Administration and 1998 Master Plan Update.

The busiest months for the Airport are typically May and July, due to the large influx of visitors on the holidays in these summer months.

The total passenger levels at the Airport have fluctuated significantly and recent passenger growth has slowed. One possible explanation is a recent reduction in the number of available seats or "lift capacity" departing from the airport. USAir discontinued service to the airport in January, 2005, however re-established service in April, 2009. Comair discontinued service in January, 2005, though they have since re-established service operating as a subsidiary of Delta. Chautauqua discontinued service in April, 2006. Although new service has been initiated with Gulfstream Airlines, Freedom Airlines and American Eagle since 2005, the impacts of these new flights may not yet be fully realized.

2.4 AIRSIDE FACILITIES

The airside facilities associated with VPS are generally limited to those facilities within the airport perimeter fence and include the facilities located on the leased property as well as the joint-use airfield facilities maintained by Eglin Air Force Base. The existing facilities are depicted in Figure 2-5. The County has operational agreements with Eglin

Air Force Base that govern the joint-use aspects of the airfield, the Aircraft Rescue and Firefighting (ARFF) services, and Air Traffic Control (ATC)/Ground Control services.

2.4.1 Runways and Taxiways

Commercial service operations at VPS utilize the runways and taxiways maintained by personnel at Eglin Air Force Base. The existing runway system includes two active runways; Runway 12-30 and Runway 1-19 (see **Figure 2-6**). Runway 12-30 serves as the primary runway, measuring 12,005 feet by 300 feet, and its surface consists of asphalt and concrete. The first 1,000 feet on both ends of Runway 12-30 is concrete and the remainder is asphalt. Runway 1-19 measures 10,012 feet by 300 feet and its surface consists of asphalt. The weight bearing capacity of the runways are presented in **Table 2-3**. Runway 12-30 and Runway 1-19 are each equipped with a high-intensity runway edge lighting (HIRL) system and include precision instrument pavement markings.

Table 2-3. Existing Runways

	Runway 1-19	Runway 12-30
Length (feet):	10,012	12,005
Width (feet):	300	300
Surface:	Asphalt	Asphalt/Concrete
Weight Bearing Capacity (pounds)		
Single Wheel	150,000	150,000
Double Wheel	200,000	200,000
Double Tandem	500,000	500,000
Dual Double Tandem	800,000	800,000
Runway Edge Lights:	High-Intensity	High-Intensity
Pavement Markings:	Precision	Precision

	Runway 1	Runway 19	Runway 12	Runway 30
Latitude:	30° 28' 22.7" N	30° 29' 59.7" N	30° 29' 19.7" N	30° 28' 20.7" N
Longitude:	86° 31' 04.8' W	86° 30' 40.8" W	86° 33' 07.83" W	86° 31' 08.8" W
Elevation (feet MSL):	51.0	61.0	85.0	51.0

Source: FAA Form 5010, Updated May 10, 2007.

Commercial service operations on the airfield are currently limited to 80 operations per day. This includes a recent increase resulting from growth in commercial air service. Additional increases in commercial air service may be authorized in the future, but will require formal authorization from Eglin Air Force Base.

Dual access taxiways to Runway 12-30 from VPS terminal facility are centrally located on the south side of the aircraft parking apron and measure approximately 1,600 feet in length and 75 feet in width. The weight bearing capacity of these taxiways is estimated at 110,000 pounds single-wheel, 200,000 pounds dual-wheel, 500,000 pounds double-tandem wheel, and 800,000 pounds dual-double-tandem-wheel loading. Both taxiways are equipped with medium-intensity taxiway edge lighting (MITL) systems.

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CLIENT: OKALOOSA COUNTY

PROJECT:

AIRPORT MASTER PLAN UPDATE

OKALOOSA REGIONAL AIRPORT

DRAWING TITLE:

AIRPORT DIAGRAM MAP

PBS&J
5300 W. Cypress St.
Suite 200
Tampa, Fl 33607
Tel. (813) 282-7275
Fax. (813) 637-9895
www.pbsj.com
Engineering - Planning - Architecture

AVCON, INC.
Engineers & Planners
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FIGURE 2-6

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2.4.2 Airfield Lighting and Signage

Airfield lighting and signage is maintained by Eglin AFB and supports the Defense Department's military mission as well as authorized commercial operations. **Figure 2-7** illustrates examples of various lighting and signage fixtures located throughout the airfield. In support of these operations, a joint effort is maintained between Eglin AFB and Okaloosa County to ensure that the lighting and signage meets commercial airline operation standards established by the FAA.

Figure 2-7. Airfield Lighting and Signage

Access Road-Taxiway

Airfield Signage (Taxiway D1)

Taxiway Edge Light

Source: AVCON Inc., July 2007

2.4.3 Navigational Aids

Because it accommodates a variety of high-performance military aircraft and commercial airline operations, the airfield offers significant operational capabilities. Runway 19 is equipped with a Category I Instrument Landing System with Distance Measuring Equipment (ILS/DME) providing pilots with precision approach capability. The approach utilizes a Middle Marker Beacon.

All four runway ends are equipped with high-intensity approach lighting systems (ALSF-1 with centerline sequenced flashers; Category I). The ALSF for each runway end extends 2,400 feet in length, with the exception of Runway 19 which offers a non-standard ALSF-1 measuring 1,500 feet in length. All four runway ends are also equipped with 4-Light PAPI systems left of the runway to serve as a visual approach aid for landing aircraft. Examples of these facilities are presented in **Figure 2-8**.

Figure 2-8. Navigational Aids

High intensity ALSF-1

4-Light PAPI System

Source: AVCON Inc., July 2007.

Figure 2-9. Terminal Apron

Source: AVCON Inc., June 2007

2.4.4 Terminal Apron

The Terminal Apron, located directly south of the main terminal, is a concrete pavement with an average Portland Cement Concrete (PCC) thickness of 12 inches and the apron measures

approximately 60,000 square yards. The bearing capacities of the apron by wheel gear type are listed in **Table 2-4**. The apron has three parking positions for heavy aircraft as well as a designated fire lane for fire fighting vehicle access.

To accommodate a planned 120 feet terminal expansion, an apron extension project is currently underway to extend the Terminal Apron by 125 feet with approximately 9,200 square yards of concrete. The new apron will have a slightly increased depth (14 inches PCC) than the existing apron (12 inches PCC) due to the types and frequency of aircraft operations it will accommodate.

Table 2-4. Terminal Apron Bearing Capacity

Surface	Concrete
Weight Bearing Capacity (lbs)	
Single Wheel:	110,000
Double Wheel:	200,000
Double Tandem:	350,000
Edge Lights:	MITL
Pavement Markings:	per FAA Standards

Source: AVCON Inc., 2007.

2.4.5 Fueling Facilities

The County maintains a centralized fuel storage facility west of the terminal facility along the west edge of the apron pavement. The storage facility includes a shelter structure to prevent rainfall from collecting within the secondary containment structures used for the tanks. The fuel storage tanks within the storage facility are steel above-ground tanks and are used to fuel commercial aircraft, airport maintenance equipment, and other County equipment. The above-ground storage tanks (ASTs) at the fuel storage facility include:

- 20,000 gal AST Jet A Aviation Fuel
- 20,000 gal AST Jet A Aviation Fuel
- 20,000 gal AST Jet A Aviation Fuel
- 10,000 gal AST Diesel Fuel
- 3,000 gal AST Unleaded Gasoline
- 500 gal AST Vehicular Diesel Fuel

In 2009 an additional fuel storage facility was constructed east of the new cargo building, which consists of the following tanks:

- 20,000 gal AST Jet A Aviation Fuel
- 20,000 gal AST Jet A Aviation Fuel
- 20,000 gal AST Jet A Aviation Fuel
- 20,000 gal AST Jet A Aviation Fuel
- 25,000 gal AST Unleaded Gasoline
- 25,000 gal AST Unleaded Gasoline

Fueling operations for commercial aircraft are performed by independent operators contracted by Okaloosa County.

In addition to the main fuel storage tanks, several additional tanks are located adjacent to the existing rental car service facilities on the landside portion of the property west of the terminal building. One of the tanks is a steel above-ground storage tank (AST); two

others are double-walled fiberglass underground storage tanks (USTs) with interstitial monitoring systems. Additional tanks associated with the rental car service facilities include the following:

- 3,000 gal AST Unleaded Gasoline Hertz/Budget
- 3,500 gal UST Unleaded Gasoline Avis
- 4,000 gal UST Unleaded Gasoline National

The Airport's fuel facilities will be relocated as part of the East Side Development project that is scheduled for construction in October 2007.

2.4.6 Air Traffic Control Tower

Air Traffic Control (ATCT) tower services are provided by Eglin Air Force Base through an agreement with Okaloosa County for managing commercial operations associated with VPS. Eglin AFB currently has two towers, one primary tower **(Figure 2-10)** and one backup tower. Both towers have an unobstructed view of operations on the airfield and coordinate control of all air operations, including all approach, departure, and ground control activities.

Figure 2-10. Air Traffic Control Tower

Source: AVCON Inc., July 2007.

2.4.7 ARFF Stations

To satisfy FAR Part 139 requirements, VPS currently has in place a support agreement with Eglin Air Force Base for direct emergency response support. To satisfy this agreement, Eglin AFB has two ARFF stations that are within FAR Part 139 response guidelines, depicted in **Figure 2-11**. Station 1 is located east of Runway 1-19 in Building 1331. The building size is 13,630 square feet and was constructed in 1962. Station 2 is located directly across Runway 12-30, south of VPS, in Building 107. The building size is 5,226 square feet and was constructed in 1956. The response equipment currently located in Station 1 and Station 2 is presented in **Table 2-5** and **Table 2-6**, respectively.

Figure 2-11. ARFF Stations

Station 1 **Station 2**

Source: AVCON Inc., July 2007.

Table 2-5. ARFF Station #1 Emergency Response Equipment

Manufacturer	Year	AFFF	Water (gpm)	Discharge Rate (gpm)	Installed Dry Chem. (lbs PKP)	Portable Extinguishing Agents
Teledyne	1995	500	3,300	2,000	500	1- 55 lb. Class D
Oshkosh	2002	420	3,000	1,950	500	1- 55 lb. Class D
Oshkosh	1987	150	1,000	1,500	500	n/a
Oshkosh	1986	130	1,000	1,500	500	1-20 lb. PKP
Oshkosh	1985	130	1,000	1,500	500	1-20 lb. ABC
KME	1995	50	750	1,000	n/a	1-2.5 gal. Water, 1-25 lb. BC
KME	1994	n/a	150	1,250	n/a	2-20 lb. BC, 1-10 lb. ABC, 1-2.5 gal. Water
International	1994	n/a	1,250	1,250	n/a	n/a

Source: 1996 CES/CEFP, Eglin AFB, FL, Assistant Fire Chief, June 2007.

Table 2-6. ARFF Station #2 Emergency Response Equipment

Manufacturer	Year	AFFF	Water (gpm)	Discharge Rate (gpm)	Installed Dry Chem. (lbs PKP)	Portable Extinguishing Agents
Oshkosh	1987	130	1,000	1,500	500	n/a
Oshkosh	1987	130	1,000	1,500	500	n/a
Oshkosh	1987	130	1,000	1,500	500	n/a
KME	1991	50	750	1,250	n/a	1-2.5 gal. Water, 1-10 lb. ABC
KME	1989	n/a	2,000	500	n/a	n/a
Pierce	1996	n/a	n/a	n/a	n/a	1-2.5 gal. Water, 1-10 lb. ABC, 1-10 lb. BC
GMC	1989	n/a	n/a	n/a	n/a	1-2.5 gal. Water, 1-10 lb. ABC

Source: 1996 CES/CEFP, Eglin AFB, FL, Assistant Fire Chief, June 2007.

2.5 TERMINAL FACILITIES

Figure 2-12. Terminal Corridor

Source: AVCON Inc., June 2007.

The terminal facility is a two-level building measuring more than 107,000 square feet and serving the commercial air service needs of the region through daily non-stop flights to seven destinations, including Atlanta, Cincinnati, Houston, Memphis, St. Louis, Tampa and Orlando. Direct service to Chicago began in September 2007. These flights are considered essential scheduled commercial service for the region as they pertain to joint-use operations at Eglin Air Force Base.

The $27.9 million terminal facility was opened for service on November 5, 2004 with final completion of the project, including a new terminal entrance and demolition of the former 38,100 square feet terminal building, in July 2005. The new terminal includes dedicated areas for ticketing and baggage claim as well as upper and lower courses with gates for aircraft boarding.

2.5.1 Gates

Beyond the security checkpoint, the lower concourse offers three separate aircraft boarding gates for ground level boarding generally associated with smaller regional aircraft. In addition, the concourse offers waiting areas equipped with chairs and concessionaire facilities. Currently, the 1st level gates are leased as follows:

1st Level:

Gate A1:	American Eagle Airlines
Gate A2:	Delta Connection
Gate A3:	Delta Connection

The upper concourse (2nd level) includes three individual boarding gates equipped with passenger loading bridges for narrow-body commercial aircraft, as well as restaurant and concession facilities. Escalators, along with stairs and an elevator, provide access to the upper concourse past the security checkpoint.

2nd Level:

Gate B1:	Northwest Airlines
Gate B2:	Delta Airlines & Delta Connection
Gate B3:	Continental Express & Continental Connection

The terminal facility was designed with expansion capabilities to support additional gate development as additional demand for these gates is realized. A project to extend the concourse an additional 120 feet to add three additional gates is currently under consideration.

2.5.2 Ticketing

VPS has five ticketing counters of approximately 3,000 square feet total and check-in kiosk available for customer support. The ticket counters are manned by airline support personnel during the operational hours of the day. Kiosk check-in is available for boarding pass printing and baggage labels.

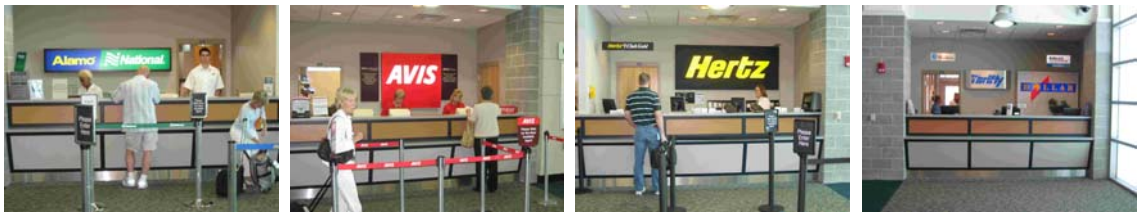
2.5.3 Baggage Claim

There are two luggage carousels (approximately 140 linear feet each) in the baggage claim area of the VPS terminal. The two carousels have a digital flight identity display suspended from the ceiling for ease in identifying the carousel containing customer baggage from inbound flights. Adjacent to and west of the carousels are the lost baggage support offices for customer assistance.

2.5.4 Rental Car Agencies

Rental car agencies are in the northwest section of the main terminal of the airport, adjacent to the baggage claim area. Each company leases a portion of the available 3,000 square feet of counter and office space. Rental car support personnel operate the customer support counters during the airport operational hours. In the event of a delayed

Figure 2-13. Rental Car Agencies



Source: AVCON Inc., June 2007.

scheduled flight with an active rental car reservation, a customer service representative will typically remain on duty until the flight arrives and the customer receives their rental vehicle. The current rental car tenants include Hertz, Budget, Avis, Thrifty/Dollar, and Alamo/National.

2.5.5 Concessionaires

Leasable concessionaire space is available in both the non-secured and the secured portions of the terminal. The total leasable concessionaire space is approximately 4,900 square feet. The concessionaires offer a variety of similar products including bagels,

Figure 2-14. Concessionaires

Euro Café **Hudson News** **Tropical Landing**

Source: AVCON Inc., June 2007.

coffee, snacks, or a specialty sandwich as well as newspapers, magazines, and souvenirs. Current tenants include Quiznos, Euro Café, Hudson News, and Tropical Landing.

2.5.6 Police and Security

Figure 2-15. Airport Security

Source: AVCON Inc., June 2007.

VPS places a high priority on airport security, accomplishing this task through a team effort between all parties working within the airport property. The professional security staff consists of Transportation Security Administration (TSA) and the Okaloosa County Sheriff's Office. TSA provides personnel during all operational hours and evaluates customers and baggage prior to boarding all flights. TSA's primary method to conduct baggage evaluation is through a General Electric CTX-5500 DS Automated Explosive Detection System. Alternate methods consist of various types of Explosive Trace Detection units as outlined in **Table 2-7**. The Okaloosa County Sheriff's Office provides direct security by stationing patrols within the airport property on a continuous basis. These personnel patrol the exterior property and the terminal interior evaluating suspicious activity and monitoring operations. To assist with constant perimeter monitoring, a closed circuit television monitoring and recording system is utilized which exceeds FAA and DOT published standards.

Table 2-7. Explosive Detection Units for VPS

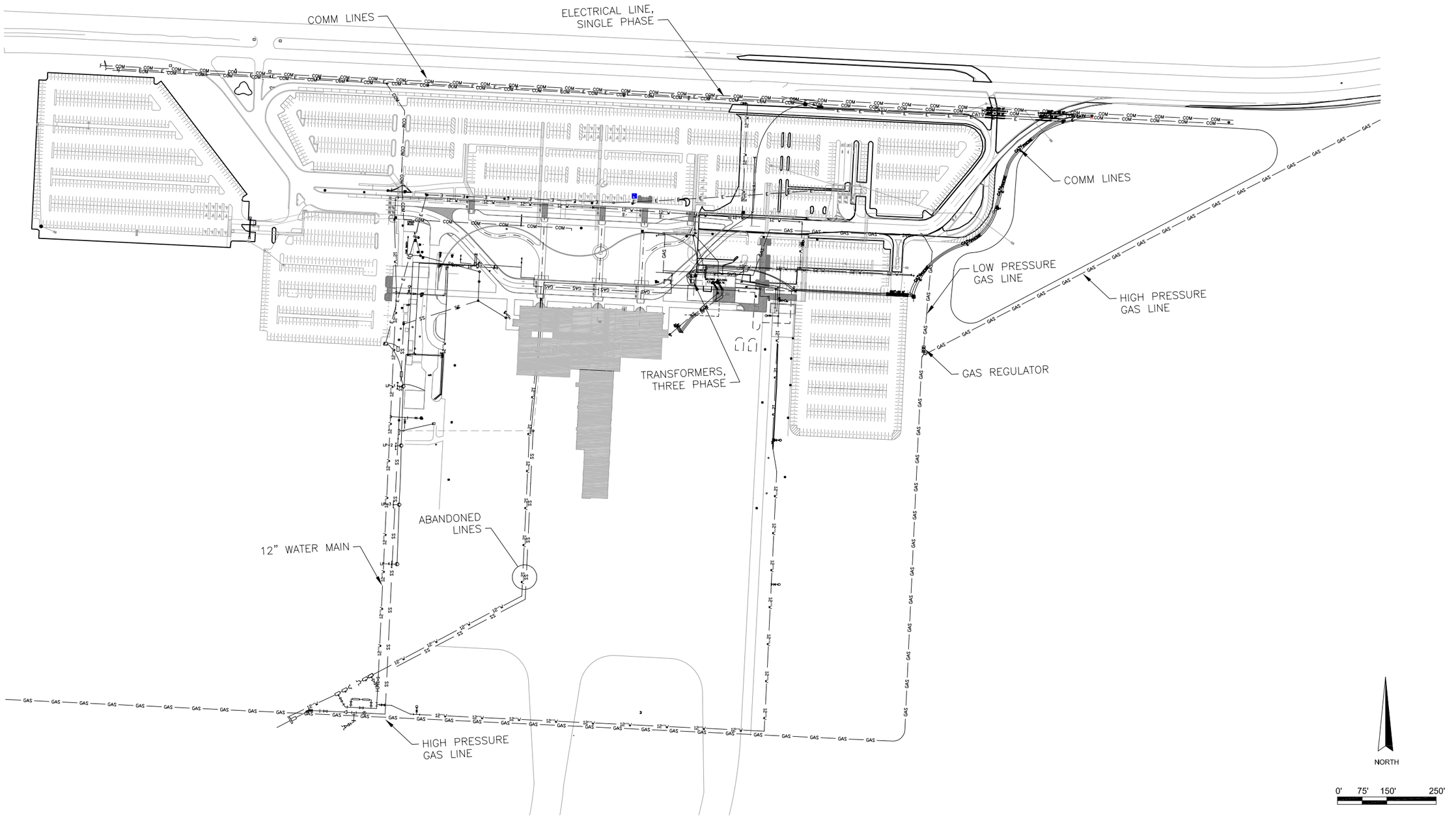
Type of Unit	Number Units in Use	Vendor	Model	Throughput (Bags per hour)
Explosive Detection System	2	General Electric	CTX-5500	200 – 270
Explosive Trace Detector	1	Beringer	Ion Scan 400B	N/A
Explosive Trace Detector	9	Ion Trac	Itemizer	N/A

Source: Northwest Florida Regional Airport Administration, September 2007; Baggage Screening Working Group Report, August 2006.

2.5.7 Utilities

Potable water service for VPS is provided by Okaloosa County Water & Sewer (OCWS) from a primary transmission line that runs adjacent to State Road 85 west of the airport (**Figure 2-16**). Wastewater from the airport facilities is collected in an existing lift station south of the fuel storage facility and pumped to the Plew Heights Treatment Facility which is located on Eglin Air Force Base property where it is treated under contract with the airport.

Gulf Power provides VPS with electrical service from a primary three-phase service located along the south portion of the State Road 85 right-of-way east of the airport property. Okaloosa County Gas District provides natural gas to the airport from a high-pressure transmission line located south of the terminal apron.



J:\AVSERV\071275.27 OKALOOSA REGIONAL AMPU\CHAPTER 2 GRAPHICS\OKALOOSA REGIONAL MPU\FIGURE 2-6\OKALOOSA REGIONAL UTILITIES.DWG 7/29/2009 8:50 AM

REVISIONS	
DATE	DESCRIPTION

CLIENT: OKALOOSA COUNTY

PROJECT:
AIRPORT MASTER PLAN UPDATE
NORTHWEST FLORIDA REGIONAL AIRPORT

DRAWING TITLE:
AIRPORT UTILITIES MAP

PBS&J
5300 W. Cypress St.
Suite 200
Tampa, FL 33607
Tel. (813) 282-7275
Fax. (813) 637-9895
www.pbsj.com
Engineering - Planning - Architecture

AVCON
AVCON, INC.
ENGINEERS & PLANNERS
320 BAYSHORE DRIVE, SUITE A NICEVILLE, FL. 32578 FAX: (850) 678-0040 n OFFICE: (850) 678-0050 WWW.AVCONINC.COM

FIGURE 2-16

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DATE: JULY 2007

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2.6 LANDSIDE FACILITIES

Landside facilities are those areas that are typically accessible to the general public and do not require security clearance. The landside facilities at VPS include surface access roads, airport terminal loop road and vehicle parking lots, the Baldwin Building, Car Wash Facility, Air Cargo Facility, and permitted storm-water treatment facilities.

2.6.1 Surface Access

Vehicular access to the airport is provided via State Road 85, a four-lane divided rural arterial, extending from U.S. 98 in Ft. Walton Beach from the south and connecting Valparaiso, Niceville, and State Road 20 to the northeast as well as Crestview, Interstate-10, and other points to the north. Near the airport, the approximate 200-feet right-of way width includes two existing 12-feet wide asphalt travel lanes in each direction with a 40-feet depressed grassed median in the center of the opposite lanes. The road segment near the airport entrance currently accommodates approximately 30,000 vehicles per day.

SR 123 is a two-lane rural arterial providing access to the airport through a T-intersection with SR 85, approximately 1,800 feet southwest of the airport entrance. A major interchange improvement funded by the Florida Department of Transportation is scheduled for the intersection of SR 123 and SR 85. The project will include a grade-separated interchange with a two-lane flyover ramp from SR 123 to SR 85 north. A traffic signal is planned at the intersection of SR 85 and the airport entrance. According to FDOT documents, the project design is complete and construction will begin as early as 2008 subject to funding availability.

2.6.2 Airport Terminal Loop Road

The public enters the airport loop road via a designated entrance off of SR 85 if approaching from the east or via a non-signalized left hand turn lane, if headed west, that merges with the loop road. The public has three options when entering the airport loop road: access to the expanded parking facilities via a three lane connector to the left, access to the terminal and/or loop road by continuing straight on the two lane main entrance road, or access to the rental car return area via a right hand turn. The main road then splits with two pass-thru lanes to the left and three arrival-departure lanes that lead to the terminal. The loop road is a two-lane asphalt roadway approximately ¾ mile in length.

Figure 2-17. Terminal Access

Main Entrance

Entrance Road Split

Terminal Curbside

Source: AVCON Inc., June 2007.

2.6.3 Vehicular Parking Facilities

As part of the recent terminal expansion program, VPS also improved and expanded the public-use parking facilities as well as the parking facilities for employees and rental cars. The majority of these improvements were completed in 2001-2002. A notable feature of the terminal program was the ability to cost-effectively meet recommendations of the TSA related to safe distances between the terminal building and parked vehicles. The new terminal building satisfies the TSA "300-foot rule" which suggests that a minimum of 300 feet be provided between the parked vehicles and the terminal structure during heightened alert periods. This separation eliminates the more cost-intensive need for police inspection of vehicles, restrictions on a significant portion of the parking facilities, or other methods.

2.6.4 Baldwin Building

The Baldwin Building has approximately 1,566 square feet of office/storage space and approximately 1,344 square feet of equipment space and is currently used by contracted airport tenants and the grounds maintenance department. The building is of concrete block construction and is also home to the Mechanical/Electrical vault. This building is located just east of the terminal building.

2.6.5 Car Wash Facilities

Figure 2-18. RAC Car Wash

Source: AVCON Inc., June 2007.

A consolidated approach is currently used for the car wash/detail bays in the rental car (RAC) service area. This service area is located west of the main terminal and is directly accessible from the airport entrance road. Future plans call for an expanded consolidated car wash facility with five larger bays to coincide with the rental car ready lot expansion on the east side of the airport property. The current car wash facilities include five covered open-air bays situated on concrete slabs. The bays are protected by a steel roof supported on steel columns. The drainage system includes a nearby inlet that transmits runoff through an oil water separator before it is discharged.

2.6.6 Air Cargo Facilities

The Air Cargo Building previously located near the ground service equipment area has been demolished and is planned to be reconstructed as part of the east side development program east of the main terminal. Thus, there are currently no specialized air cargo facilities at VPS.

2.6.7 Stormwater Treatment Facilities

The airport maintains several permitted storm-water treatment ponds within its lease boundary. A 4.7-acre dry retention pond situated on the easternmost portion of the lease area serves as the primary storm-water treatment facility for the airport facilities. This pond was constructed to serve the storm-water treatment and attenuation requirements for the recent improvements to the airport terminal, apron pavement, and parking facilities. There is also a pond on the west portion of the leasehold a pond west of the main parking lot, and another pond between the taxiways. These three along with the ones mentioned provide the storm-water system. No wet detention ponds are located on airport property.

2.7 AIRSPACE/AIR TRAFFIC OPERATIONS

The FAA has established regulatory control of how aircraft operate in the vicinity of airports during en-route flights, take-offs, and landings. The following section describes the general characteristics of the airspace at and around VPS.

2.7.1 Designated Corridors

As part of its mission, Eglin AFB manages approximately 464,000 acres in Okaloosa, Walton, and Santa Rosa Counties. A large amount of this reservation land is used for various military training exercises. Eglin AFB also covers approximately 97,963 square miles of water ranges over the Gulf of Mexico.

To facilitate safe aircraft training exercises and other air activities, much of the airspace in the region is strictly regulated by the military through the use of restricted airspace and military operations areas (MOAs). Such regulation is required due to the high frequency of operations in the region and the significant variations in the types and speed of aircraft operations.

To safely and efficiently accommodate commercial airline traffic related to VPS, Eglin has established designated airspace restrictions and specific corridors through this controlled airspace. These are referred to as the "North-South" and "East-West" corridors (**Figures 2-19 and 2-20**) and are designated by FAR Subpart F 93.83 as Special Air Traffic Rule airspace. Although not designated Class B airspace, Eglin's North-South corridor is often treated as such, and pilots are required to obtain prior approval from Eglin Radar Control Facility prior to entering this airspace.

2.7.2 Restricted Corridors

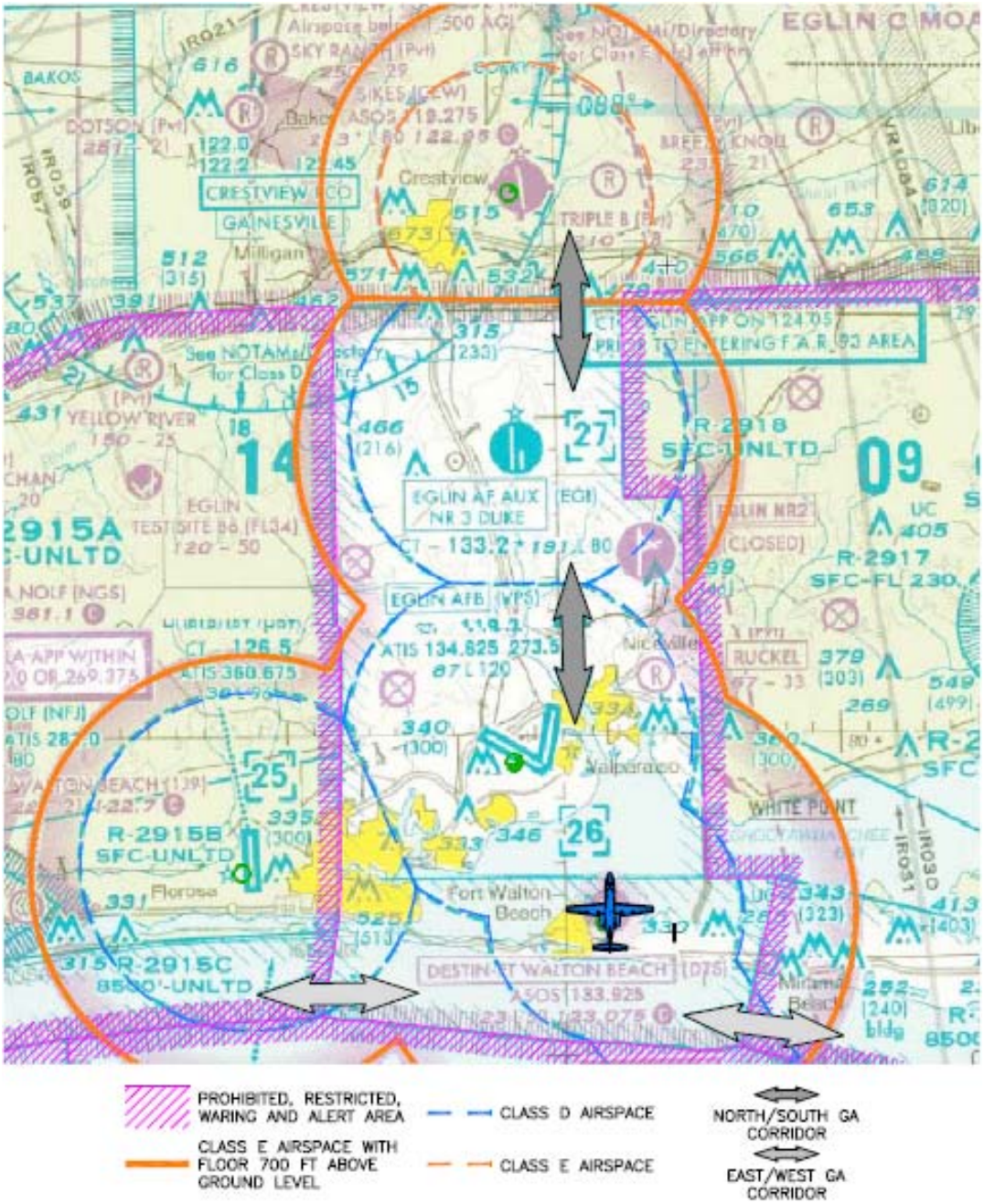
The East-West corridor runs along the coast from the surface up to, but not including, 8,500 feet MSL. This corridor lies directly below portions of the following Restricted Areas: R2915C, R2919B, and R2914B. Prior to operating within the East-West Corridor, pilots are required to establish two-way radio communications with the Eglin Radar Control Facility to receive traffic advisories. This requirement is similar to Class C airspace requirements.

MOAs are frequently used by the military for training exercises and are located throughout the region as shown in **Figure 2-21**. Although VFR flight is not prohibited in MOAs, pilots must be aware that operating within the Eglin MOAs without advisories from the Eglin Radar Control Facility is extremely dangerous and should be avoided.

Flight through Eglin Restricted Areas is not authorized without permission from the Eglin Radar Control Facility. Among the operations conducted in the Restricted Areas are dive-bombing, strafing, and missile-fire testing, often with live weapons.

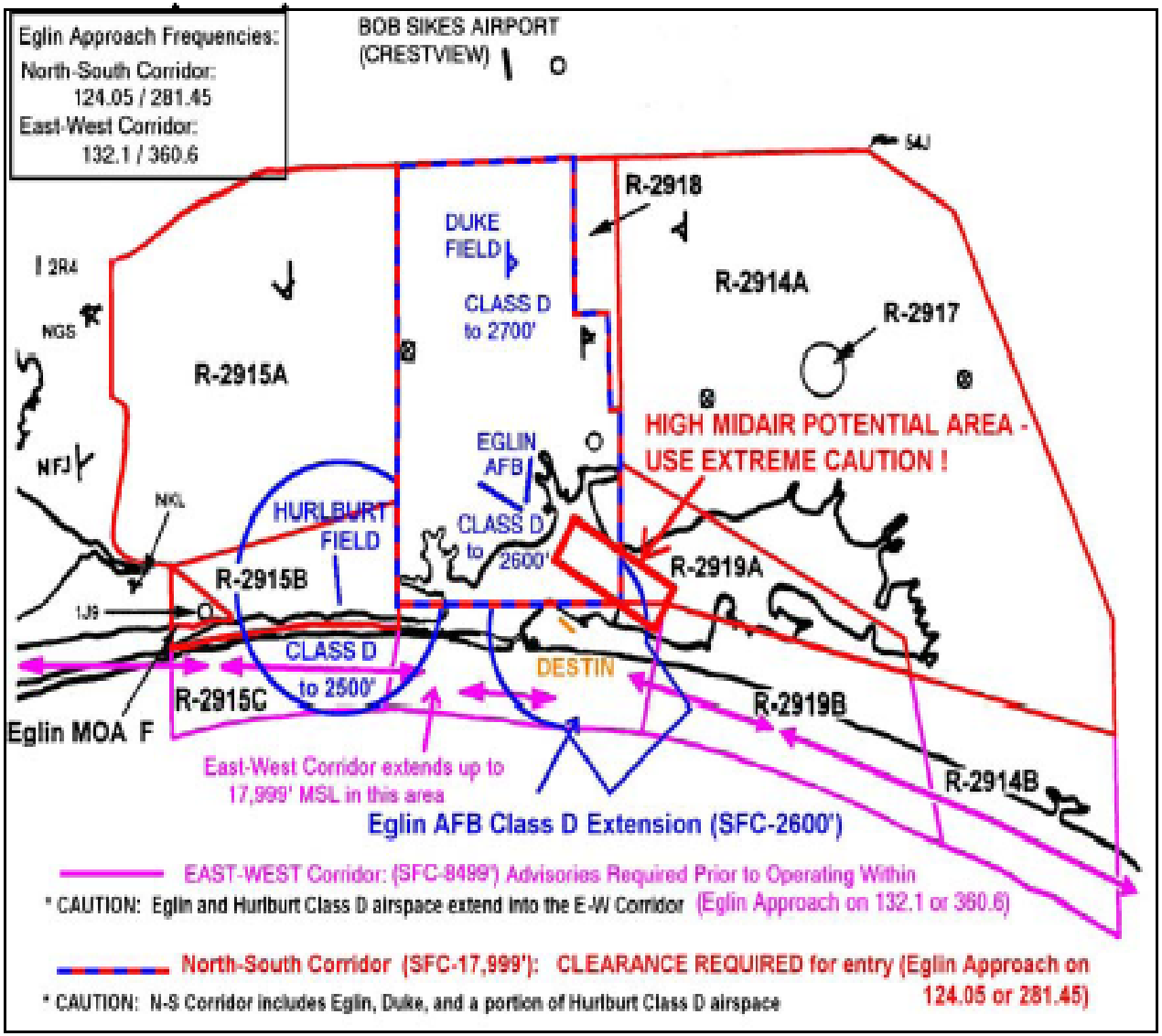
Although the local airspace represents one of the densest aircraft populations in the U.S., the current airspace management system is well organized and effectively accommodates day-to-day military and commercial airline schedules.

Figure 2-19. Airspace Corridors



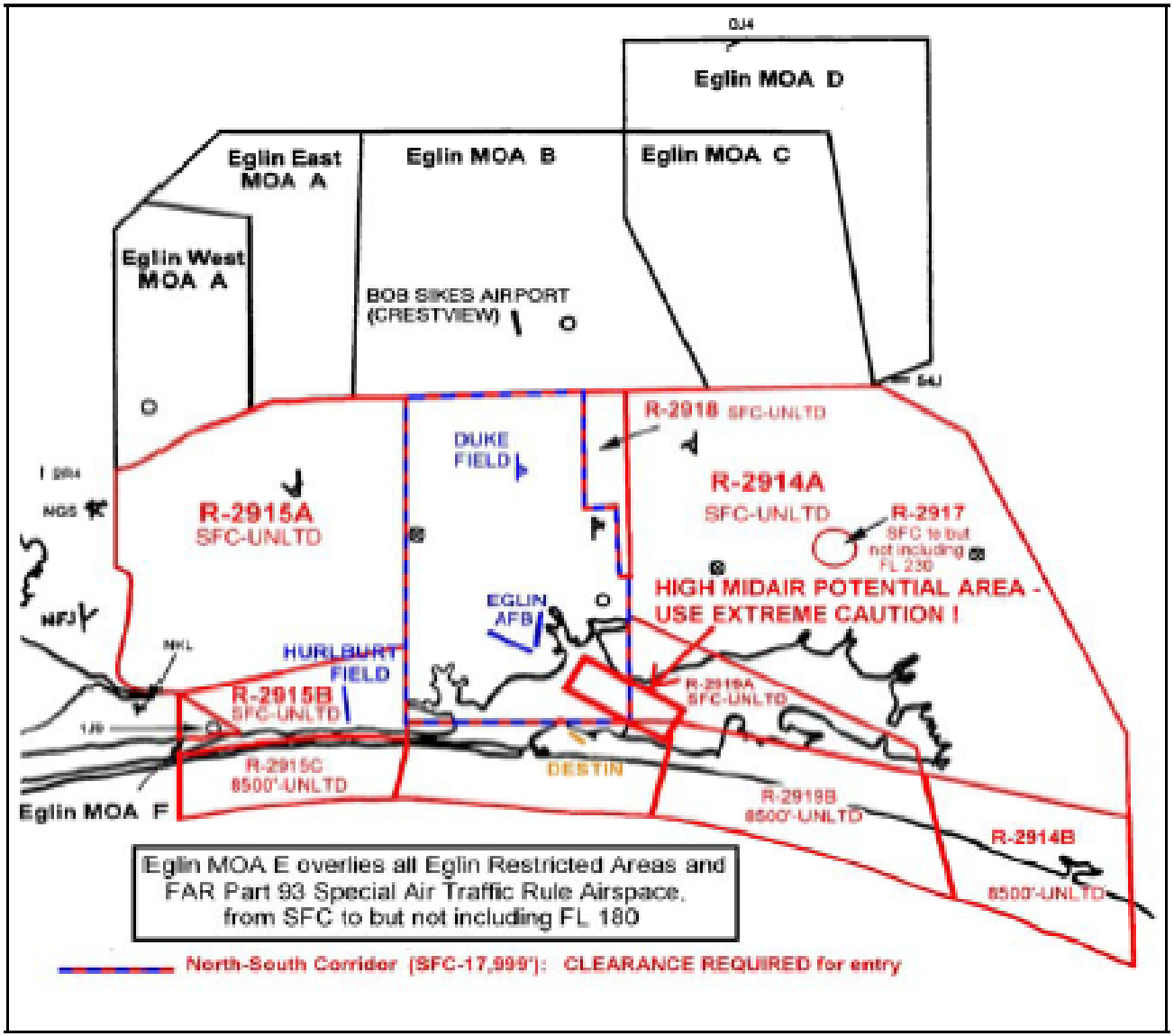
Source: Mid-Air Collision Avoidance Program Brochure, Hurlburt Field, Sept. 2003.

Figure 2-20. Eglin AFB Designated Airspace



Source: Mid-Air Collision Avoidance (MACA) Program Brochure, Hurlburt Field, Sept. 2003.

Figure 2-21. Eglin AFB Restricted Areas and Military Operations Areas



Source: Mid-Air Collision Avoidance (MACA) Program Brochure, Hurlburt Field, Sept. 2003

2.8 ADJACENT LANDUSE

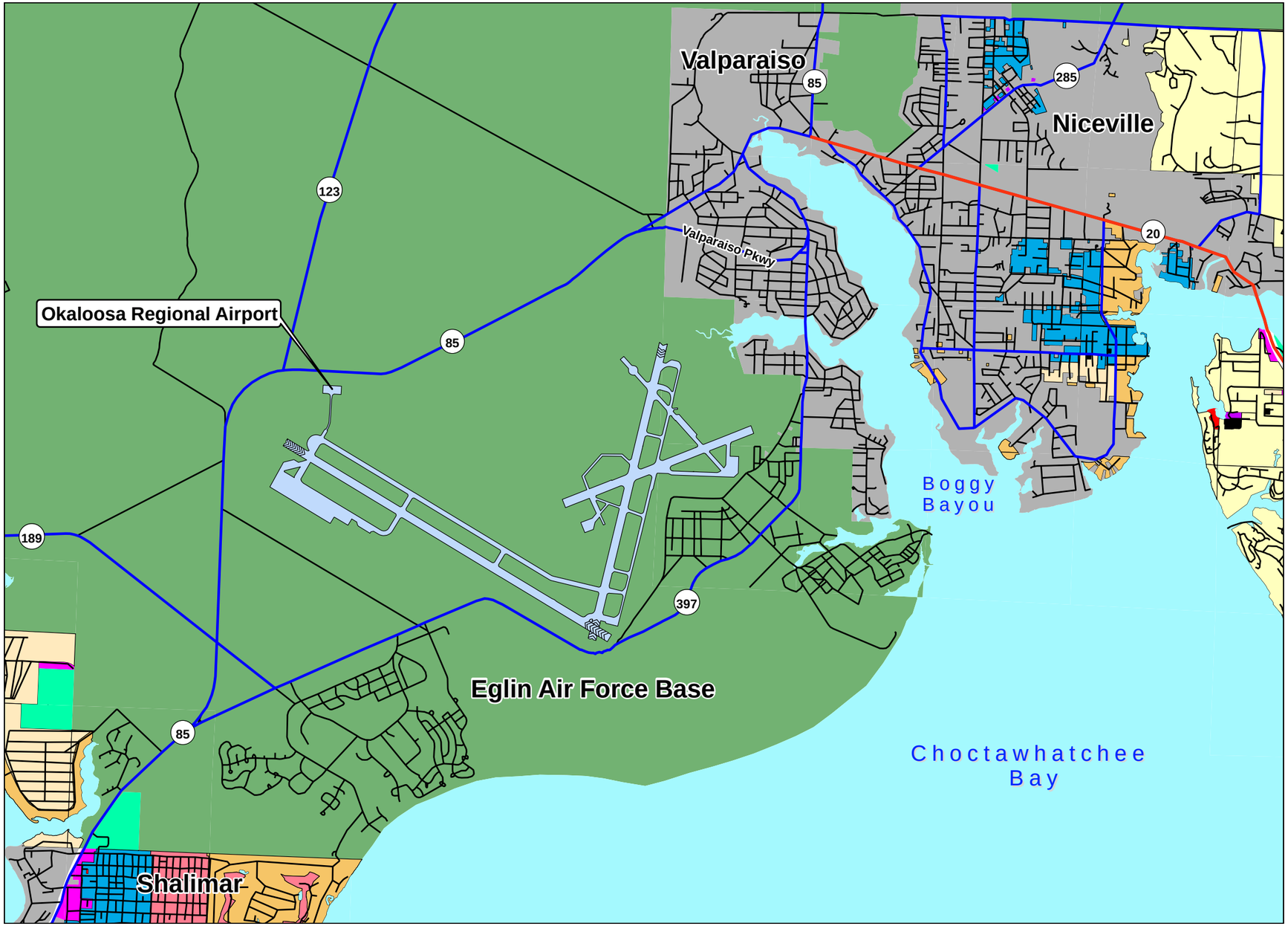
The properties in the vicinity of an airport are often affected by airport operations. Florida Statutes, Chapter 333 requires that local governing entities establish future land use and zoning regulations to ensure compatible land use around airports. These regulations consider height, noise compatibility and safety. The current Zoning Map for the areas surrounding Eglin Air Force Base is illustrated in **Figure 2-22** and the Future Land Use Map is illustrated in **Figure 2-23**. As presented on the land use map, residential development is restricted around the airport except within the Valparaiso city limits.

2.9 SUMMARY

Okaloosa County has some of Northwest Florida's most beautiful beaches, great fishing, Eglin AFB, and increasing numbers of shopping districts. With this perfect mixture of attractions, VPS will continue to accommodate leisure, business, and weekend getaway travelers. VPS operates on 131 acres of leased land from Eglin AFB and accommodates a mix of military and commercial aircraft. Eglin AFB provides most of the airway support to VPS. Currently, Eglin AFB has two towers, one primary and one backup tower. Both towers are situated in the airfield to have an unobstructed view of all airfield operations. There are two ARFF stations within FAR Part 139 response guidelines of VPS. All airfield lighting, signage, navigational aids, and the two runways, 1-19 and 12-30, are maintained by Department of Defense and accommodate commercial airline traffic in support of VPS. Although, commercial traffic on Eglin AFB is limited to 84 operations per day, any increase will require formal authorization from Eglin AFB.

The main terminal for VPS is located on State Road 85 between Fort Walton Beach and the city of Niceville. The $30.2 million dollar, 110,000-square foot, two tier terminal building was opened in November 2004. The opening of the facility allowed for the demolition of the old 38,100 square feet building in July 2005. Within the terminal there is a mixture of concessionaires that offer a variety of products from coffee, bagels, newspapers, magazines, souvenirs, and a mixture of snacks and drinks. VPS has five ticketing counters of approximately 3,000 square feet and check-in kiosks available for quick customer support. For passengers arriving to VPS, there are two baggage claim carrousels adjacent to the rental car check-in counters that give passengers quick pickup and check out access. Once outside the terminal, there are long and short term parking areas to accommodate visitors' parking needs at VPS.

Offering the only commercial airline service in the county, VPS is owned and operated by Okaloosa County and was selected as Florida Department of Transportation's "Outstanding Commercial Service Airport of the Year" for 2005. Airline services to and from VPS are provided by daily non-stop flights to six different locations, including Atlanta, Charlotte, Houston, Memphis, Tampa, and Chicago. Commercial traffic has increased at VPS since 1990 with an average annual growth rate of approximately 5.2 percent. Much of the passenger traffic through VPS occurs during the summer months with the largest flow of travelers from May through July. Historically, January is the least active month for VPS.



LEGEND

OKALOOSA COUNTY ZONING

- BUSINESS GENERAL (BG)
- BUSINESS RETAIL (BR)
- BUSINESS TOURISM (BT)
- INCORPORATED AREAS (CITY)
- EGLIN AIR FORCE BASE (EGLIN)
- PUBLIC LAND (PL)
- RESIDENTIAL GENERAL DEVELOPMENT (RGD)
- RESIDENTIAL SUBURBAN SINGLE (RSS)
- RESIDENTIAL URBAN APARTMENTS (RUA)
- RESIDENTIAL URBAN DUPLEX (RUD)
- RESIDENTIAL URBAN SINGLE (RUS)
- RESIDENTIAL URBAN SINGLE-1 (RUS-1)
- WATER

N

0 2,000 4,000 8,000 Feet

SOURCES:

OKALOOSA COUNTY GIS DIVISION, 2007

E.S.R.I. DATA AND MAPS
STREETMAP USA, 2007

AVCON, INC., 2007

REVISIONS	
DATE	DESCRIPTION

CLIENT: OKALOOSA COUNTY

PROJECT:

AIRPORT MASTER PLAN UPDATE

OKALOOSA REGIONAL AIRPORT

DRAWING TITLE:

OKALOOSA COUNTY ZONING MAP

PBS&J
5300 W. Cypress St.
Suite 200
Tampa, Fl 33607
Tel. (813) 282-7275
Fax. (813) 637-9895
www.pbsj.com
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FIGURE 2-22

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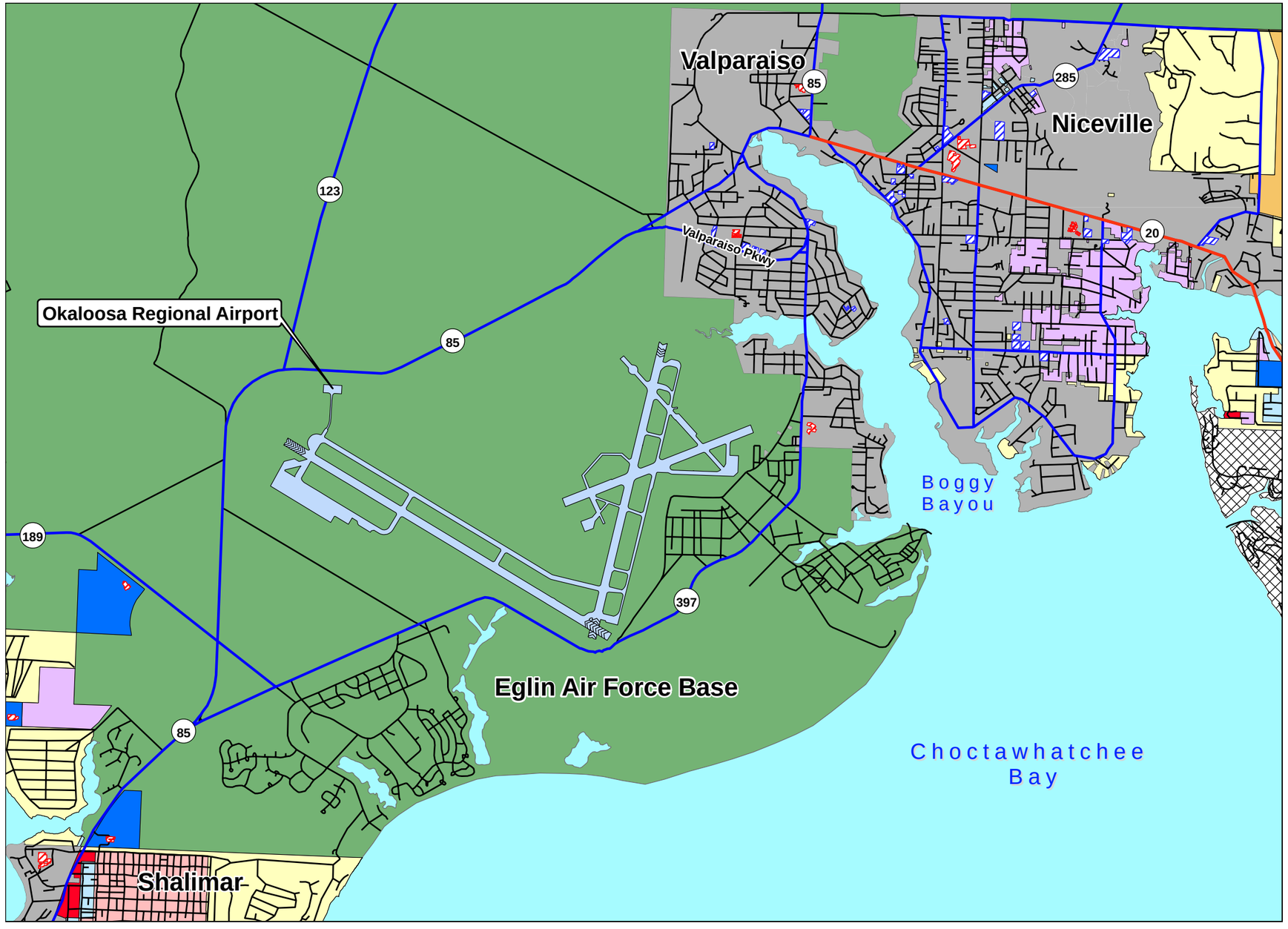

LEGEND

- CHURCH PROPERTY
- SCHOOL PROPERTY

OKALOOSA COUNTY FUTURE LAND USE

- COMMERCIAL (C)
- INCORPORATED AREAS (CITY)
- EGLIN AIR FORCE BASE (EGLIN)
- INSTITUTIONAL (INST)
- LOW DENSITY RESIDENTIAL (LDR)
- MEDIUM DENSITY RESIDENTIAL (MDR)
- MIXED USE 1 (MU-1)
- NATURAL RESOURCE DEVELOPMENT AREA (NRDA)
- SUBURBAN RESIDENTIAL (SR)
- URBAN MIXED USE (UMU)
- WATER

N

0 2,000 4,000 8,000 Feet

SOURCES:

OKALOOSA COUNTY GIS DIVISION, 2007

E.S.R.I. DATA AND MAPS
STREETMAP USA, 2007

AVCON, INC., 2007

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DATE	DESCRIPTION

CLIENT: OKALOOSA COUNTY

PROJECT:

AIRPORT MASTER PLAN
UPDATE

OKALOOSA REGIONAL
AIRPORT

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OKALOOSA COUNTY
FUTURE LAND USE

PBS&J
5300 W. Cypress St.
Suite 200
Tampa, Fl 33607
Tel. (813)
282-7275
Fax. (813)
637-9895
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FIGURE 2-23

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FORECAST OF AVIATION DEMAND

Northwest Florida Regional Airport

3

3.1 GENERAL

The demand for passenger air service is largely determined by the economic and demographic profile of a defined Air Trade Area (ATA). This area is the source of the airport's origination and destination (O&D) passengers. The O&D passengers are those who use an airport as their original part of departure or as their final destination. These travelers are typically residents, tourists and business travelers who either reside or visit the Air Trade Area. The other passenger category is that of connecting passengers who make connections at a "hub" airport for transit in route to another location. No connecting passenger activity is envisioned at the Northwest Florida Regional Airport (VPS or Airport).

The Airport's ATA consists of three counties in northwestern Florida: Okaloosa, Santa Rosa, and Walton counties. All of these counties are located in the panhandle region of Florida along the shores of the Gulf of Mexico. The City of Fort Walton Beach is the largest city within the ATA and is six miles from the Airport. While the Air Trade Area is the primary source of O&D passengers for the Airport; the adjacent counties of Escambia, Holmes, and Washington as well as Southern Alabama constitute a secondary service area.

3.2 DEMOGRAPHIC FACTORS

In developing the passenger demand forecast for the Airport, several demographic factors were examined for possible use as predictive variables for passenger air service demand: population, the median age of the population, employment, aggregate regional earnings, per capita personal income, retail sales per household, a wealth index, gross regional product, and mean household income. All of the demographic data, both historical and forecast is from Woods & Poole Economics. Woods & Poole is an independent non-partisan firm located in Washington, D.C. that specializes in long-term economic and demographic projections for counties, cities, states, and Metropolitan Statistical Areas (MSA) of the United States.

The passenger demand forecast was developed using an econometric model that employed multiple linear regressions and other appropriate statistical methods. The independent variables in the equations were the demographic factors noted above used individually and in combination and the dependent variable in the equation was the level of enplaned passenger demand for the Airport.

3.2.1 Population and Employment Factors

Population in the ATA is shown on **Table 3-1** and has growth rates similar to national averages except for the years from 2005 to 2010 when the growth rate reaches 2.3 percent per annum. The population growth within the ATA is relatively consistent over each of the three counties during the forecast period from 2007 through 2030.

Employment growth within the area is projected to grow faster than the growth in population and employment within the ATA exceeds the population level from 2007 forward indicating that many of the jobs developed in this timeframe will be filled with

labor that resides in the adjacent counties of Escambia, Holmes and Washington as well as Southern Alabama which constitute a secondary Air Service Area.

Table 3-1. Demographic Factors - Population and Employment Factors

	Year	Population	Total Employment	Median Age	Number of Households
Historical	1996	165,140	150,080	35.5	115,950
	1997	167,050	156,690	36.0	119,650
	1998	167,980	159,160	36.6	122,660
	1999	169,050	161,390	37.2	125,120
	2000	170,910	165,990	37.8	127,270
	2001	171,740	163,810	38.0	130,170
	2002	175,240	170,460	38.3	134,810
	2003	177,810	177,460	38.5	139,070
	2004	180,910	183,500	38.8	144,090
	2005	182,170	189,540	39.1	148,020
	2006	188,090	197,090	39.3	154,360
Forecast	2007	192,080	203,110	39.5	159,100
	2008	196,060	209,130	39.7	163,840
	2009	200,010	215,170	39.9	168,540
	2010	203,960	221,210	40.1	173,260
	2011	207,853	226,967	40.1	177,740
	2012	211,819	232,873	40.2	182,336
	2013	215,862	238,933	40.2	187,051
	2014	219,982	245,151	40.2	191,888
	2015	224,180	251,530	40.3	196,850
	2020	244,740	282,020	40.1	219,650
	2025	265,850	312,690	40.8	241,780
	2030	287,930	343,570	41.3	263,320
	Average Annual Compound Growth Rate				
	2000-2005	1.3%	2.7%	n/a	3.1%
	2005-2010	2.3%	3.1%	n/a	3.2%
	2010-2015	1.9%	2.6%	n/a	2.6%
	2015-2020	1.8%	2.3%	n/a	2.2%
	2020-2025	1.7%	2.1%	n/a	1.9%
	2025-2030	1.6%	1.9%	n/a	1.7%

Source: Woods & Poole Incorporated.

3.2.2 Aggregate Economic Factors

The aggregate economic factors for the Air Trade Area in constant (1996) dollars are shown in **Table 3-2**. By presenting this information in constant (also known as “real”) dollars, inflation is factored out so the real increases in earnings, income and regional output are shown. The growth in these aggregates is above those of the United States as a whole.

Table 3-2. Demographic Factors - Aggregate Economic Factors

	Year	Total Earnings in Millions of $1996	Total Personal Income in Millions of $1996	Gross Regional Product in Millions of $1996
Historical	1996	3,975	6,326	6,525
	1997	4,090	6,708	6,727
	1998	4,291	7,070	6,922
	1999	4,432	7,372	7,033
	2000	4,600	7,686	7,141
	2001	4,662	7,859	7,361
	2002	4,997	8,205	7,975
	2003	5,462	8,587	8,742
	2004	5,636	8,908	9,032
	2005	5,854	9,251	9,381
	2006	6,121	9,692	9,810
Forecast	2007	6,347	10,069	10,171
	2008	6,574	10,453	10,535
	2009	6,808	10,846	10,909
	2010	7,048	11,249	11,293
	2011	7,290	11,654	11,681
	2012	7,540	12,073	12,081
	2013	7,799	12,507	12,496
	2014	8,066	12,956	12,925
	2015	8,343	13,422	13,368
	2020	9,824	15,891	15,739
	2025	11,524	18,707	18,461
	2030	13,481	21,932	21,594
	Average Annual Compound Growth Rate			
	2000-2005	4.9%	3.8%	5.6%
	2005-2010	3.8%	4.0%	3.8%
	2010-2015	3.4%	3.6%	3.4%
	2015-2020	3.3%	3.4%	3.3%
	2020-2025	3.2%	3.3%	3.2%
	2025-2030	3.2%	3.2%	3.2%

Source: Woods & Poole Incorporated.

3.2.3 Individual Economic Factors

The individual economic factors of mean household income and per capita personal income is in **Table 3-3** are shown in constant (1996) dollars and are projected to have growth rates consistent with national averages. Figures for Retail Sales per Household were not available in constant dollars and are shown in nominal or current values and have growth rates consistent with national averages.

Table 3-3. Demographic Factors - Individual Economic Factors

	Year	Retail Sales per Household	Mean Household Income $1996	Personal Income Per Capita $1996
Historical	1996	20,218	49,191	19,182
	1997	20,498	50,349	19,725
	1998	20,828	51,870	20,485
	1999	21,779	52,941	21,034
	2000	22,317	54,513	21,686
	2001	22,169	54,751	21,865
	2002	22,065	55,329	22,197
	2003	22,252	55,969	22,533
	2004	22,729	55,545	22,452
	2005	23,272	56,230	22,791
	2006	23,343	56,576	23,017
Forecast	2007	23,470	57,090	23,306
	2008	23,596	57,623	23,600
	2009	23,730	58,194	23,905
	2010	23,867	58,789	24,219
	2011	24,014	59,441	24,541
	2012	24,162	60,101	24,867
	2013	24,312	60,768	25,198
	2014	24,462	61,442	25,533
	2015	24,613	62,124	25,872
	2020	25,555	66,318	27,733
	2025	26,675	71,345	29,813
	2030	27,972	77,267	32,102
	Average Annual Compound Growth Rate			
	2000-2005	0.8%	0.6%	1.0%
	2005-2010	0.5%	0.9%	1.2%
	2010-2015	0.6%	1.1%	1.3%
	2015-2020	0.8%	1.3%	1.4%
	2020-2025	0.9%	1.5%	1.5%
	2025-2030	1.0%	1.6%	1.5%

Source: Woods & Poole Incorporated.

3.3 FORECAST METHODOLOGY

There are two distinct parts to the passenger forecast: the short-term and the longer term. For the short term, that ranges from 2007 through 2017, the passenger forecast was developed using a series of linear regression formulas and appropriate statistical tests to determine if historical and forecasted demographic factors used individually or in combination could be used to forecast enplaned passenger levels (demand) at the Airport. For the longer term, from 2018 through 2030, the growth rates from the FAA Terminal Area Forecast (TAF) were used.

In the short term forecast, a regression model was used. A regression is a type of econometric model that uses one factor, such as income, to predict the level of another factor like enplaned passengers. In this example income is the independent or "predictor" variable and enplaned passengers are the dependent variable or the "prediction". A regression model does not imply "causality" where the independent variable causes movement in the dependent variable; the model only measures the historical co-movement of the two variables to determine if a correlation exists.

As well as meeting the requisite statistical relationship requirements, the relationship between the independent and dependent variables must be founded in economic theory. For example, there could not be a negative relationship between income and expenditure (unless the expenditure was on an "inferior" good that people buy less of as income increases). Another example would be that an NFL versus AFL football victory in the Super Bowl could not be used to predict the future direction of the stock market. Nonsensical regressions or "spurious" regressions such as those in the cited examples may have a high statistical correlation but violate the tenants of economic theory and have no value.

In the first step of the forecast development, regressions were run using each of the demographic factors as independent variables with enplaned passengers as the dependent variable. The demographic factors included:

- Population
- Median Age of Population
- Total Employment
- Total Earnings in Constant 1996 dollars
- Personal Income in Constant 1996 dollars
- Income per Capita in Constant 1996 dollars
- Income per Capita in Current dollars
- Wealth Index
- Gross Regional Product in Constant 1996 dollars
- Persons per Household
- Retail Sales per Household in Current dollars
- Mean Household Income in Constant 1996 dollars
- Mean Household Income in Current dollars
- Number of Households
- Total Retail Sales in Constant 1996 dollars

The use of Constant dollars is particularly useful in that this measurement shows what economists term "real" growth, which is growth with inflation factored out. Income variables shown in constant dollars demonstrate the real growth in consumer purchasing power. The data from Woods & Poole used 1996 as the base year so all constant dollar factors were stated in 1996 dollars. The choice of 1996 as the base year is irrelevant to the regression calculation. The choice of any year as a base year (example: 1968, 2000, 2001, etc) would mean that all values are restated in that base year and would yield identical regression results.

In this first series of regressions, the degree of the statistical relationship between the independent and dependent variables was not particularly strong, largely due to the

shock to commercial aviation system that occurred in 2001 and 2002 precipitated by the terrorist attacks of September 11, 2001. In a statistical sense, the terrorist attacks disrupted the normal relationship between demographic variables and demand for air travel. In these two years, demographics (population, employment and earnings) continued to grow with only modest impacts to economic factors in 2001 while in the same two years, commercial aviation travel reduced significantly throughout the world. To correct for this shock, a "dummy" variable was introduced which identified 2001 and 2002 as abnormal years in terms of their relationships with demographic variables while identifying the remaining years as normal. The introduction of the "dummy" variable also permitted the use of multiple independent variable (multivariate) regressions as a second forecast step, in which two or more independent variables were used as "predictors".

3.4 SELECTED FORECAST OF AVIATION ACTIVITY

The regression model selected for the forecast was the strongest in terms of its statistical reliability and the strongest in terms of income-expenditure relationships. The selected model used three independent variables: Mean Household Income in Constant 1996 dollars, Retail Sales per Household in Current dollars, and the dummy variable to identify 2001 and 2002 as "shock" years. A minor adjustment was made to the enplanement forecast produced by the regression that reduced the forecast in the years 2007 through 2009. This caused a higher rate of growth that the regression predicted for the year 2007 over the years 2007 to 2009 that better reflects the year-to-date activity in 2007. From 2010 through 2017, the unadjusted regression results were used and from 2018 forward, the growth rates from the FAA TAF enplanements forecast developed by the FAA were used. The adjusted enplaned passenger forecast produced by the regression model is shown in **Table 3-4**.

Using a calculation that derived load factors from the number of enplaned passengers divided by the number of available seats on departing aircraft at the Airport, the number of operations required to serve the forecasted level of passengers was calculated. This calculation was then cross-checked for accuracy against historical records of passengers per operation and was used for the operations forecast from 2007 through 2017. From 2018 forward, the growth rates from the FAA TAF operations forecast were used. The operations forecast is shown in **Table 3-5**.

By applying the average historical landed weights of operations, a landed weight forecast was developed and is presented in **Table 3-6.** The forecast of landed weights is based on the operations forecast shown in **Table 3-5** and assumes those operations will be realized in order to achieve the landed weights forecast levels.

Table 3-4. Enplanements Forecast

	Year	Total Enplanements	Annual Percentage Change
Historical	2000	411,593	
	2001	388,275	-5.7%
	2002	318,329	-18.0%
	2003	344,450	8.2%
	2004	378,722	9.9%
	2005	387,222	2.2%
	2006	349,306	-9.8%
Forecast	2007	370,000	5.9%
	2008	395,000	6.8%
	2009	414,750	5.0%
	2010	435,345	5.0%
	2011	442,670	1.7%
	2012	449,994	1.7%
	2013	457,319	1.6%
	2014	464,644	1.6%
	2015	471,969	1.6%
	2016	480,840	1.9%
	2017	489,712	1.8%
	2020	532,100	2.8%
	2025	611,000	2.8%
	2030	701,600	2.8%

Average Annual Compound Growth Rate	
2000-2005	-1.2%
2005-2010	2.4%
2010-2015	1.6%
2015-2020	2.4%
2020-2025	2.8%
2025-2030	2.8%

Sources: Northwest Florida Regional Airport Series 2003 Revenue Bonds Official Statement, FAA Passenger Survey reported by O&D Database Products. Forecast 2007-2017, PBS&J; 2018-2025, applied FAA TAF growth rates; 2025-2030 FAA TAF long term growth rate.

Table 3-5. Operations Forecast

	Year	Total Operations	Annual Percentage Change
Historical	2000	17,606	
	2001	16,572	-5.9%
	2002	10,990	-33.7%
	2003	16,034	45.9%
	2004	17,082	6.5%
	2005	14,746	-13.7%
	2006	14,876	0.9%
Forecast	2007	14,800	-0.5%
	2008	15,800	6.8%
	2009	16,590	5.0%
	2010	17,410	4.9%
	2011	17,710	1.7%
	2012	18,000	1.6%
	2013	18,290	1.6%
	2014	18,590	1.6%
	2015	18,880	1.6%
	2016	19,230	1.9%
	2017	19,590	1.9%
	2020	20,360	1.3%
	2025	21,742	1.3%
	2030	23,217	1.3%

Average Annual Compound Growth Rate	
2000-2005	-3.5%
2005-2010	3.4%
2010-2015	1.6%
2015-2020	1.5%
2020-2025	1.3%
2025-2030	1.3%

Sources: Northwest Florida Regional Airport Series 2003 Revenue Bonds Official Statement, FAA Passenger Survey reported by O&D Database Products. Forecast 2007-2017, PBS&J; 2018-2025 applied FAA TAF growth rates; 2025-2030 FAA TAF long term growth rate.

Table 3-6. Landed Weight Forecast

	Year	Total Landed Weight	Annual Percentage Change
Historical	2000	476,789,682	
	2001	478,399,656	0.3%
	2002	421,845,539	-11.8%
	2003	462,868,699	9.7%
	2004	493,122,310	6.5%
	2005	425,686,781	-13.7%
	2006	429,439,614	0.9%
Forecast	2007	427,245,600	-0.5%
	2008	456,113,600	6.8%
	2009	478,919,300	5.0%
	2010	502,591,000	4.9%
	2011	511,251,400	1.7%
	2012	519,623,100	1.6%
	2013	527,994,800	1.6%
	2014	536,655,200	1.6%
	2015	545,026,900	1.6%
	2016	555,130,700	1.9%
	2017	565,523,100	1.9%
	2020	587,866,464	1.3%
	2025	627,638,600	1.3%
	2030	670,226,000	1.3%

Average Annual Compound Growth Rate

2000-2005	-2.2%
2005-2010	3.4%
2010-2015	1.6%
2015-2020	1.5%
2020-2025	1.3%
2025-2030	1.3%

Sources: Northwest Florida Regional Airport Series 2003 Revenue Bonds Official Statement, FAA Passenger Survey reported by O&D Database Products.

As a point of reference, the forecasts developed in this report were compared with those completed in the *Northwest Florida Regional Airport Series 2003 Revenue Bonds Offering Statement (2003 Bond Prospectus)*. For comparison, the forecast levels of enplaned passengers, operations and landed weights for the year 2012 (the final year of the 2003 Bond Prospectus) were compared to the 2012 levels in this forecast.

In terms of enplaned passengers, this report forecast 449,990 compared with a forecast of 449,000 in the 2003 Bond Prospectus, a difference of approximately 1,000 enplaned passengers or 0.22 percent. For operations in the year 2012, this report forecast 18,000 compared with a forecast of 18,500 in the 2003 Bond Prospectus, a decrease of 500

operations or 2.7 percent which corresponds with the trend since 2003 in higher industry load factors.

For the forecast of landed weight in the year 2012, this report forecast 519,623,100 pounds compared with a forecast of 603,660,179 pounds in the 2003 Bond Prospectus. Some of the variance of 84,037,079 pounds (approximately 50.0 percent of the variance) is attributable to the reduction in the operations forecast of 500 operations. The remaining discrepancy in the landed weight forecast exists because historical average landed weights per arrival show wide variations. With this wide variation in the historical average landed weights per arrival, this report used the median (midpoint) landed weight rather than the mean (average) as the median is statistically more robust when conditions of variation may not follow those of a normal probability distribution. Using the median landed weight rather than the mean landed weight results in a lower estimated landed weight per arrival.

3.5 AIRCRAFT FLEET MIX

Over the past year the Airport has been serviced by; American Eagle, Continental, ASA / Delta Connection, Delta, Gulfstream International and Northwest. Several types of aircraft were used including; the 66 passenger ATR, the 19 passenger Beech 1900, the 50 and 70 passenger CRJ 200 and 700, the 37 and 50 passenger ERJ 135 and 145, the 142 passenger MD-88, and 100 to 122 passenger DC-9 30, 40 and 50 aircraft.

The current aircraft fleet mix was analyzed to determine the percent of total operations each aircraft type performed. This ratio of operations to aircraft type was then applied to the selected operations forecast to establish an initial fleet mix forecast for VPS. This initial projection was then adjusted as necessary to account for anticipated future changes in the aircraft fleet; such as the replacement of the MD88 service with 737 aircraft. The resulting aircraft fleet mix projection is presented in **Table 3-7**.

Table 3-7. Aircraft Fleet Mix Forecast

Aircaft Type	Historic Operations	Percent of Total Operations	Forecast Operations 2010	2015	2020	2025	2030
ATR 72 *	149	1%	0	0	0	0	0
Beech 1900	1,636	11%	1,915	2,077	2,240	2,392	2,554
B737-800**	0	0%	1,219	1,322	1,425	1,522	1,625
CRJ 200	2,306	16%	2,699	2,926	3,156	3,370	3,599
CRJ 700	2,083	14%	2,612	2,832	3,054	3,261	3,483
DC9-30	1,041	7%	1,219	1,322	1,425	1,522	1,625
DC9-40	149	1%	174	189	204	217	232
DC9-50	744	5%	871	944	1,018	1,087	1,161
ERJ 135	1,041	7%	1,219	1,322	1,425	1,522	1,625
ERJ 145	4,686	32%	5,484	5,947	6,413	6,849	7,313
MD88 **	1,041	7%	0	0	0	0	0
Total Operations	**14,876**	**100%**	**17,410**	**18,880**	**20,360**	**21,742**	**23,217**

** ATR replaced in early 2007 with CRJ 700*

*** B737 expected to enter the fleet in November 2007 as replacement for MD88 flight and increase in outer years.*

Sources: O&D Database Products, Flightaware.com and PBS&J, 2007.

3.6 PEAKING CHARACTERISTICS

The forecast aggregate annual activity levels presented previously provide an indication of the Airport's overall activity but the peak period of activity has a more important role in the design of airport facilities. Terminal facilities are planned to accommodate the peak hour demand experienced during the average day of the peak month. At the Airport, the peak month accounts for 9.9 percent of annual passenger activity. Dividing peak month activity by 30 days yields the average daily activity during the peak month. There are two peaks in passenger activity: one of which occurs between 7:30 am and 9:30 am and one which occurs between 11:00 am and noon. Each of these peaks accounts for 22.7 percent of daily flights and together they account for 45.4 percent of daily activity in terms of both the number of flights and the seats available. The actual peak hour of activity is the period from 11:00 am until noon.

Using the passenger forecast (the enplaned passenger forecast multiplied by two to account for enplaning and deplaning passengers), the peak hour number of passengers is calculated by multiplying the peak hour number of flights percentage by the average daily passenger level during the peak month. The results are shown in **Table 3-8.**

Table 3-8. Peak Passenger Volume Calculations

Year	Total Annual Passengers	% of Total Annual Passengers in Peak Month	Total Annual Passengers in Peak Month	Passengers on an Average day, Peak Month (/30)	% of Total Flights Occurring in Peak Hour	Peak Hour Enplanements/ Deplanements
2006	698,612	9.9%	69,378	2,313	22.7%	526
2007	740,000	9.9%	73,488	2,450	22.7%	557
2008	790,000	9.9%	78,453	2,615	22.7%	594
2009	829,500	9.9%	82,376	2,746	22.7%	624
2010	870,690	9.9%	86,466	2,882	22.7%	655
2011	885,340	9.9%	87,921	2,931	22.7%	666
2012	899,988	9.9%	89,376	2,979	22.7%	677
2013	914,638	9.9%	90,831	3,028	22.7%	688
2014	929,288	9.9%	92,286	3,076	22.7%	699
2015	943,938	9.9%	93,741	3,125	22.7%	710
2020	1,064,200	9.9%	105,684	3,523	22.7%	801
2025	1,222,000	9.9%	121,354	4,045	22.7%	919

Sources: FAA Passenger Survey information reported by O&D Database Products. Forecast by PBS&J.

3.7 FUEL FLOWAGE

Future fuel requirements are a significant concern for airport operators. Since overall aircraft operations are forecast to increase it is expected that fuel sales and flowage will increase at a similar pace. Thus, a correlation of historic fuel sales to historic operations was established in order to determine the projected fuel flowage, which may be used to determine the fuel storage capacity required at VPS.

This analysis evaluated the available historic fuel flowage data provided by Airport management and Flightline Okaloosa for calendar year 2006 and 2007. Based on this data, projections of fuel flowage were developed using a ratio of gallons of fuel pumped per recorded aircraft operation. This ratio was calculated by identifying the average number of total gallons per operation over the historical period and then applying that average to the selected operations forecast for VPS. This results in a forecast of fuel flowage that is tied to the forecast increase in aircraft activity. The forecast of fuel flowage is presented in **Table 3-9**.

Table 3-9. Forecast of Fuel Flowage

Year	Historic Fuel Flowage (JET A)	Historic Annual Operations	Gallons / Operation
2006	4,154,128	14,876	279
2007*	3,385,226	12,318	275
Avg. Historic Gallons per Operation:			**277**
Year	**Projected Fuel Flowage (JET A)**	**Forecast Operations**	**Avg. Gallons / Operation**
2010	4,823,177	17,410	277
2015	5,230,419	18,880	277
2020	5,640,430	20,360	277
2025	6,023,293	21,742	277
2030	6,431,919	23,217	277

** Fuel and operations data only provided through 9/30/07.*

Source: Flightline Okaloosa & PBS&J, 2007.

3.8 FORECAST COMPARISON

The FAA develops aggregate forecasts of enplaned passengers and total operations as part of the Terminal Area Forecast (TAF) for each region of the country and apportions them based on historical activity levels of activity. Thus, specific forecasts for individual airports are likely to vary from the FAA TAF. **Table 3-10** compares the forecast of total enplanements developed and presented in this chapter with the most recent forecast of the FAA TAF. All passengers are domestic passengers, as no international flights serve the Airport. Both forecasts assume that approximately 62 percent of passengers are flown by air carriers and 38 percent by commuter air operators.

As indicated in **Table 3-10**, the passenger forecast developed within this report is slightly less than that of the FAA TAF in the years from 2007 through 2017. In the years from 2018 through 2025, the growth rate in the FAA TAF enplanements forecast was used so the variance is proportional. As the FAA TAF only extends to 2025, there is no number for 2030 in the FAA TAF forecast. To calculate the 2030 number of enplanements, the long term growth rate of the FAA TAF was applied.

The differences between the operations forecast developed in this report and that of the FAA TAF is shown in **Table 3-11**. As with the enplanements forecast, growth rates from the FAA TAF operations forecast were used for the years from 2018 through 2025 with the growth rate in the FAA TAF operations forecast applied to obtain the forecast for 2030.

Table 3-10. Passenger Forecast Comparison

	Year	Forecast	TAF Forecast	Percentage Difference (Over/(Under) TAF)
Forecast	2007	370,000	406,076	-8.9%
	2008	395,000	417,457	-5.4%
	2009	414,750	429,157	-3.4%
	2010	435,345	441,184	-1.3%
	2011	442,670	453,548	-2.4%
	2012	449,994	466,258	-3.5%
	2013	457,319	479,326	-4.6%
	2014	464,644	492,760	-5.7%
	2015	471,969	506,570	-6.8%
	2016	480,840	520,767	-7.7%
	2017	489,712	535,362	-8.5%
	2020	532,100	581,649	-8.5%
	2025	611,000	667,854	-8.5%
	2030	701,600	n/a	
	Average Annual Compound Growth Rate			
	2007-2010	5.6%	2.8%	
	2010-2015	1.6%	2.8%	
	2015-2020	2.4%	2.8%	
	2020-2025	2.8%	2.8%	
	2025-2030	2.8%	n/a	

Source: FAA TAF February, 2007.

Table 3-11. Operations Forecast Comparison

	Year	Forecast	TAF Forecast Commercial Operations	Percentage Difference (Over/(Under) TAF)
Forecast	2007	14,800	17,804	-16.9%
	2008	15,800	18,142	-12.9%
	2009	16,590	18,488	-10.3%
	2010	17,410	18,839	-7.6%
	2011	17,710	19,198	-7.8%
	2012	18,000	19,563	-8.0%
	2013	18,290	19,936	-8.3%
	2014	18,590	20,316	-8.5%
	2015	18,880	20,704	-8.8%
	2016	19,230	21,099	-8.9%
	2017	19,590	21,501	-8.9%
	2020	20,360	22,752	-10.5%
	2025	21,742	25,002	-13.0%
	2030	23,217	n/a	
Average Annual Compound Growth Rate				
	2007-2010	5.6%	1.9%	
	2010-2015	1.6%	1.9%	
	2015-2020	1.5%	1.9%	
	2020-2025	1.3%	1.9%	
	2025-2030	1.3%	n/a	

Source: FAA TAF February, 2007.

DESIGN CRITERIA

Northwest Florida Regional Airport

4

Airport improvements are planned and developed according to the established Airport Reference Code (ARC) for publicly owned/operated airports, and then for each particular runway. However, Northwest Florida Regional Airport (VPS or Airport) is situated on a United States Air Force Base (USAFB), and is only responsible for its leased area. Therefore, FAA design criteria discussed in this chapter will be limited to applicable FAA standards and recommendations within the VPS lease hold area. These areas primarily include the taxilanes and apron area. This chapter will discuss the critical aircraft for VPS as well as the design criteria which control airside development at VPS.

4.1 AIRPORT REFERENCE CODE AND CRITICAL AIRCRAFT DETERMINATION

As was alluded to in previous chapters, the Airport is classified as ARC "C-III". An airport's ARC is determined by the critical aircraft (aircraft with the longest wingspan and the highest approach speed) that consistently makes substantial use of the Airport. FAA Order 5090.3B, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS),* defines "substantial use" as 500 or more annual aircraft operations or scheduled commercial service (an operation is classified as either an arrival or departure). The classification of an ARC is based on a combination of aircraft approach speed, wingspan, and tail height, as depicted in **Table 4-1**. The first character of the ARC (A, B, C, D, or E) represents the aircraft's approach speed. The second character of the ARC (I, II, III, IV, V, or VI), otherwise known as the Airplane Design Group (ADG), represents the aircraft's wingspan and tail height. Each character of the ARC is independent, and thus may represent a composite of one or more critical aircraft. **Table 4-2** presents some examples of typical aircraft and their ARC.

Table 4-1. Airport Reference Code

Aircraft Approach Category	Approach Speed	
A	Below 91 knots	
B	91 knots up to 121 knots	
C	121 knots up to 141 knots	
D	141 knots up to 166 knots	
E	166 knots or above	
Airplane Design Group	**Wingspan**	**Tail Height**
I	Below 49 feet	Less than 20 feet
II	49 feet up to but not including 79 feet	20 feet up to but not including 30 feet
III	79 feet up to but not including 118 feet	30 feet up to but not including 45 feet
IV	118 feet up to but not including 171 feet	45 feet up to but not including 60 feet
V	171 feet up to but not including 214 feet	60 feet up to but not including 80 feet

Source: FAA AC 150/5300-13, Airport Design.

Table 4-2. Representative Aircraft of ARC B-II, C-II, C-III, and D-IV

ARC B-II	ARC C-II
Small Aircraft ≤ 12,500 lbs. Raytheon King Air C90 Raytheon Super King Air Cessna 441 **Large Aircraft > 12,500 lbs.** Cessna Citation II/III Dassault Falcon 50/900 Grumman Gulfstream I	**Large Aircraft > 12,500 lbs.** Canadair CL-600 Grumman Gulfstream III Rockwell Sabre 80
ARC C-III	**ARC D-IV**
Large Aircraft > 60,000 lbs. Boeing 737 Airbus A-320 DC-9 MD-80	**Large Aircraft > 60,000 lbs.** Boeing 707 DC-10 MD-11

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

Runway design standards are based on a combination of aircraft approach speeds and aircraft wingspan and tail heights. Taxiway, taxilane, and apron design standards are based on an aircraft's wingspan and tail height

4.1.1 Critical Aircraft

The current critical aircraft for VPS is the Boeing 737, which is an ARC C-III. This aircraft represents the most demanding aircraft to utilize VPS facilities in sufficient numbers to impact planning and design efforts. Both taxilanes and the apron, which constitutes the VPS airside areas, have been designed to ARC C-III requirements. The Forecast of Aviation Demand clearly establishes that the Airport is expected to experience more than 500 annual operations by ARC C-III aircraft. In the long-term (within the 20-year planning horizon), it is anticipated that aircraft requiring C-III design standards will frequent the airport in sufficient numbers to maintain that classification. Therefore, any of the Airport's future facilities should be planned and designed to accommodate this level of service, and the maintenance of existing facilities should continue to adhere to C-III standards.

An ARC upgrade to D-IV is not an unreasonable expectation within the 20-year planning horizon, should operations by larger and heavier aircraft increase. As such, standards for both C-III and D-IV requirements are discussed, although no recommendation to change the ARC is made at this time.

4.2 FACILITY DESIGN CRITERIA

Airport improvements are planned and developed according to the established ARC for the Airport. At VPS only the apron and taxilanes must conform to ARC design requirements. **Table 4-3** presents design criteria for ARC C-III and D-IV, and **Table 4-4** depicts the minimum separation standards for ARC C-III and D-IV.

Table 4-3. Geometrical Standards

Geometrical Design Standards	ARC C-III	ARC D-IV
Taxiway Width	50 feet	75 feet
Taxiway Shoulder Width	20 feet	25 feet
Taxiway Safety Area Width	118 feet	171 feet
Taxiway Object Free Area Width	186 feet	259 feet
Taxilane Object Free Area Width	162 feet	225 feet

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

Table 4-4. Minimum Separation Standards

Separation Standards	ARC C-III	ARC D-IV
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	152 feet	215 feet
Taxiway Centerline to Fixed or Movable Object	93 feet	129.5 feet
Taxilane Centerline to Parallel Taxiway/Taxilane Centerline	140 feet	198 feet
Taxilane Centerline to Fixed or Movable Object	81 feet	112.5 feet

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

4.3 EXISTING FACILITIES COMPLIANCE TO CURRENT DESIGN STANDARDS

The VPS 1998 Master Plan and Airport Layout Plan (ALP) set documents a C-III ARC as the design standard for VPS, and projected the need to upgrade to an ultimate D-V ARC. The existing facility is compliant with all applicable C-III design standards. However the aviation forecasts found in Chapter 3 reflect that improving the facilities to meet D-V standards within the planning period may be an unrealistic growth strategy for the Airport.

4.3.1 Taxiways

The existing taxiway system at VPS that requires FAA design standard compliance is comprised of only two connector taxiways. Both taxiways link the VPS terminal area to the Eglin Air Force Base airfield. Both taxiways are 75 feet wide and have a centerline to centerline separation ranging from roughly 440 feet where they connect to the apron and 366 feet where they connect to the full parallel taxiway. Considering the taxiway standards for an ARC C-III airport are 50 feet wide, with parallel taxiway separations of at least 152 feet, the existing taxiways at VPS exceed the design standards currently in place. Furthermore, the taxiway's facilities meet the requirements set forth for ARC D-IV airports (See Tables 4-3 and 4-4). Therefore, if the Airport realizes the need to adjust its ARC to D-IV in the future, the taxiway connectors should not require any improvements to allow for larger aircraft.

4.3.2 Apron

The positioning of the existing terminal apron at VPS meets and exceeds the required FAA separation standards for Group III and IV aircraft. The current separation between the apron area and the Runway is approximately 2,000 feet which exceeds the

applicable design standard of 500 feet. The apron area is located roughly 1,300 feet away from the nearest full parallel taxiway which also exceeds the design standards for compliance with both ARC C-III and D-IV. Thus, no changes with respect to the apron area are necessary to upgrade from Group III to Group IV. With respect to the apron's utilization, consideration should be given to the pavement strength of large aircraft parking positions, and how those larger parked aircraft may possibly impact the taxilane object free areas once VPS begins to encounter increased operation by larger and heavier aircraft.

4.4 SUMMARY

This chapter concludes that the current airside facilities at VPS meet and often exceed the FAA's ARC C-III planning and design criteria. The following two chapters discuss in greater detail the specific capacities of VPS's civil use facilities, and compare them to the identified required facilities needed to meet the Airport's projected demand.

DEMAND/CAPACITY ANALYSIS AND FACILITY REQUIREMENTS

5

Northwest Florida Regional Airport

Based on the aviation forecasts developed in Chapter 3, this chapter compares the projected aviation demand to the existing capacity of the facilities at Northwest Florida Regional Airport (VPS or Airport). This comparison is then used to determine future facility requirements over the 20-year planning period. The facility improvements are directly related to the forecasted aviation activity and will allow the Airport and surrounding community to be adequately prepared to accommodate the potential demand over the 20-year planning period.

5.1 AIRSPACE CAPACITY

Airspace capacity at an airport can be impacted when the flight paths of air traffic at nearby airports, or local navigational aids (NAVAIDS), interact to affect operations at the airport. Additionally, obstructions near or in the approaches to an airport that require aircraft to alter flight paths to avoid the obstructions can limit the number of aircraft processed, and adversely affect airspace capacity. Thus, a review of the obstructions, airports, and associated approach procedures that surround VPS was completed to determine airspace capacity. **Figure 5-1** illustrates the overall airspace surrounding VPS, as depicted in Federal Aviation Administration (FAA) New Orleans Sectional Aeronautical Chart.

The region surrounding VPS is occupied by a number of general aviation (GA) and military use airports. Following is a list of airports surrounding VPS including their relative proximity and bearing from VPS:

- Destin-Ft. Walton Beach Airport (DTS); 6 nautical miles (nm) southeast, 151°
- Hurlburt Field Airport (HRT); 9nm west, 249°
- Eglin Air Force Auxiliary Base NR 3 – Duke Field (EGI); 10nm north, 1°
- Eglin Test Site B6 Airport (FL34); 15nm northwest, 308°
- Bob Sikes Airport (CEW); 18nm north, 1°
- Holley Naval Outlying Field (NKL); 19nm west, 260°
- Choctaw Naval Outlying Field (NFJ); 23nm west, 273°
- Santa Rosa Naval Outlying Field (NGS); 23nm west, 290°
- DeFuniak Springs Airport (54J); 24nm northeast, 52°
- Peter Prince Field Airport (2R4); 26nm west, northwest, 291°

No FAA designated commercial service airports are located within the immediate vicinity (30nm) of VPS. Pensacola Gulf Coast Regional Airport (PNS) and Panama City Bay County International Airport (PFN) are the nearest commercial service airports to VPS, located 34nm west and 47nm east of VPS respectively. The impacts of the commercial service facility to VPS are limited due to distance between both facilities. The potential for negative impacts is also reduced because both facilities specialize in different operational services.

Figure 5-1. VPS Airspace

Source: FAA, New Orleans Sectional Aeronautical Chart, 2009.

Limitations on the airspace and general use of instrument approach procedures exist at VPS due to its close proximity to surrounding airports, the large number of general aviation operations that traverse the area, and also due to the airfield residing within both Restricted and Military Operations Areas (MOA). Additionally, the instrument landing system (ILS) approach, missed approach, and overall traffic patterns at EGI utilize airspace near VPS, and arriving and departing aircraft must be coordinated through air traffic control (ATC). These limitations and potential conflicts have been considered when evaluating the Airport's overall capacity during visual flight rules (VFR) and/or instrument flight rules (IFR). Currently, ILS precision approach procedures exist at VPS. The ILS instrument approaches provide precision vertical guidance to pilots on approach to land on Runways 1-19 and 12-30.

5.2 AIRSIDE CAPACITY AND FACILITY REQUIREMENTS

The major components of the airfield system to be considered when determining capacity include runway orientation and configuration, runway length, and runway exit locations. Additionally, the capacity of a given system is affected by operational characteristics such as fleet mix, climatology, and ATC procedures. Each of these components has been examined as part of the airside capacity analysis.

5.2.1 Airfield Capacity

A demand and capacity analysis of airfield or airside systems and facilities, such as the Airport's runways and taxiways, results in calculated hourly capacities for VFR and IFR conditions. Additionally, an annual service volume (ASV), which identifies the total number of aircraft operations that may be accommodated at the Airport without excessive delay, is also calculated. The FAA defines total airport capacity as a reasonable estimate of an airport's annual capacity, which accounts for the differences in runway use, aircraft mix, weather conditions, etc. that would be encountered during one year. The parameters, assumptions, and calculations required for this analysis are included in the following sections.

Aircraft Mix Index

The FAA has developed a classification system for aircraft, based on size, weight, and performance. **Table 5-1** illustrates this classification as it is presented in FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*. This classification is used to develop an aircraft mix, which is the relative percentage of operations conducted by each of the four classes of aircraft (A, B, C, and D). The aircraft mix is used to calculate a "mix index," which is used in airfield capacity studies. The FAA defines the mix index as a mathematical expression, representing the percent of Class C aircraft, plus three times the percent of Class D aircraft; written as % (C+3D).

Table 5-1. FAA Aircraft Classifications

Aircraft Class	Max. Cert. Takeoff Weight (lb)	Number of Engines	Wake Turbulence Classification
A	12,500 or less	Single	Small (S)
B		Multi	
C	12,500 – 300,000	Multi	Large (L)
D	Over 300,000	Multi	Heavy (H)

Source: FAA AC 150/5060-5, Airport Capacity and Delay.

The current facilities at VPS can accommodate aircraft within the A, B, C and D classes; however VPS is a joint use field with private ownership via the United States Air Force (USAF) and access to the airfield is therefore restricted. The restriction imposed to allow civilian aircraft is limited to several commercial operations. A review of base-year (2006) operations by each class of civilian aircraft at VPS determined that 100 percent were conducted from class C aircraft. Therefore since the percentage of class D aircraft is zero, the base year mix index at VPS, for purposes of airfield capacity calculations, is %(100+0);100 percent. Based on the forecast data presented in Chapter 3, the mix index was estimated for forecast years of 2011, 2016, 2021, and 2026. **Table 5-2** presents the projected mix index over the planning period.

Table 5-2. Aircraft Mix Index Projection

Year	Total Annual Operations	Aircraft Mix Index (%)
2007	14,800	100
2015	18,880	100
2020	20,650	100
2025	22,670	100
2030	24,890	100

Sources: FAA AC 150/5060-5, Airport Capacity and Delay and PBS&J, 2008.

No change in VPS airport ownership or access regulations to allow GA operations are anticipated, therefore forecasts of aircraft mix indexes remain constant.

Percent Arrivals

The percent of arrivals is the ratio of arrivals to total operations. It is logical to assume that the total annual arrivals will equal total departures, and that average daily arrivals will equal average daily departures. Therefore, the percent of arrivals for VPS were estimated to be approximately 50 percent, which was used in the capacity calculations for the Airport.

Percent Touch and Go

The touch-and-go percentage is the ratio of landings with an immediate takeoff; two total operations. This type of operation is typically associated with flight training. The number of touch-and-go operations normally decreases as air carrier operations increase, the demand for service and number of total operations approach runway capacity, and/or weather conditions deteriorate. Typically, touch-and-go operations are assumed to be between zero and 50 percent of total operations; however no touch-and-go operations exist at VPS due to the facility's use restriction and subsequently the touch-and-go percentage is zero.

Taxiway Factors

Taxiway entrance and exit locations are an important factor in determining the capacity of an airport's runway system. Runway capacities are highest when full-length, parallel taxiways, ample runway entrance and exit taxiways, and no active runway crossings are available. FAA AC 150/5060-5, *Airport Capacity and Delay* identifies the criteria for determining taxiway exit factors at an airport. The criteria for exit factors are generally based on the mix index and the distance the taxiways are from the runway threshold and other taxiways. Because VPS is a joint use facility and several operational restrictions govern the airfield, no taxiway exits were evaluated.

5.2.1.1 Airfield Capacity Calculations

The airfield capacity calculations in this section were performed using the parameters and assumptions discussed in the previous sections. The calculations also utilize data from the preferred aviation demand forecast, as presented in Chapter 3, for portions of the capacity projections. The following sections outline the hourly capacities in VFR and IFR conditions, as well as the annual service volume for VPS.

Hourly VFR Capacity

The hourly VFR capacity for Runways 12-30 and 1-19 was calculated based on the guidance and procedures in FAA AC 150/5060-5, *Airport Capacity and Delay*. The hourly VFR capacity for 12-30 and 1-19 was calculated to be 62 and 72 operations per hour, respectively. The following equation and calculations present the step-by-step method that was utilized to calculate the hourly VFR capacity, based on the guidance provided in FAA AC 150/5060-5.

Hourly VFR Equation

Hourly Capacity Base (C*) x Touch & Go Factor (T) x Exit Factor (E) = Hourly Capacity

Runway 12-30

C* x T x E = Hourly Capacity

77 x 1.00 x 0.8 = 61.6 or 62

Runway 1-19

C* x T x E = Hourly Capacity

77 x 1.00 x 0.94 = 72.38 or 72

The VFR hourly capacity will be used in the annual service volume calculations for VPS.

Hourly IFR Capacity

Similar to the VFR hourly capacity discussed previously, IFR hourly capacity was calculated for Runway 12-30 and 1-19. The hourly IFR capacity for Runway 12-30 and 1-19 was calculated to be 54 and 58 operations per hour, respectively. The hourly IFR capacity equation and calculations, based on the existing ILS and GPS approach, are shown below.

Hourly IFR Equation

Hourly Capacity Base (C*) x Touch & Go Factor (T) x Exit Factor (E) = Hourly Capacity

Runway 12-30

C* x T x E = Hourly Capacity

59 x 1.00 x 0.91 = 53.69 or 54

Runway 1-19

C* x T x E = Hourly Capacity

59 x 1.00 x 0.98 = 57.82 or 58

Annual Service Volume – Allowable Operation Volume (AOV)

The ASV is the maximum number of annual operations that can occur at the Airport before an assumed maximum operational delay value is encountered. The ASV is

calculated based on the existing runway configuration, aircraft mix, and the parameters and assumptions identified herein, and incorporates the hourly VFR and IFR capacities calculated previously. The ASV for VPS is based on several criteria as the facility is owned by the USAF while portions of it are leased to VPS. Because of the nature of operations and the restrictions that exist at the Airport, a total maximum daily operations limit on civilian aircraft was enforced. The maximum daily operations limit directly correlates to the AOV, which serves as the ASV for civilian aircraft use at VPS. The AOV is designated by the airport facility owner. The total maximum daily operations limit is 80, which is equivalent to an AOV of 29,200.

Additionally, the current aviation demand in number of aircraft operations for the base year 2007 at the Airport, as presented in Chapter 3 of this document, is 14,800 operations. This equals approximately 51 percent of the present AOV. According to the FAA, the following guidelines should be used to determine necessary steps as demand reaches designated levels of airfield capacity. The following FAA regulations will be incorporated into the planning for the facilities leased for civilian use by VPS.

- 60 percent of ASV (AOV): Threshold at which planning for capacity improvements should begin.
- 80 percent of ASV (AOV): Threshold at which planning for improvements should be complete and construction should begin.
- 100 percent of ASV (AOV): Airport has reached the total number of annual operations (demand) that can be accommodated, and capacity-enhancing improvements should be made to avoid extensive delays.

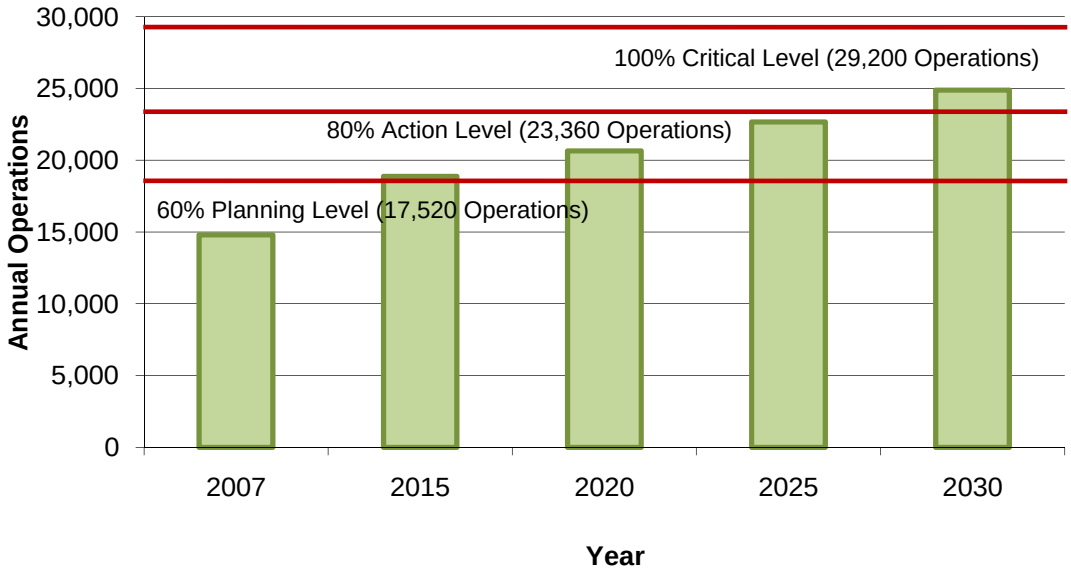
Table 5-3 and **Figure 5-2** illustrate the civilian aviation demand forecast for VPS, and its relation to the Airport's AOV.

Table 5-3. Annual Service Volume vs. Annual Demand

Year	Aircraft Mix Index	Annual Operations	Allowable Operations Volume (AOV)	Percent of AOV
2007	100%	14,800	29,200	51%
2015	100%	18,880	29,200	65%
2020	100%	20,650	29,200	71%
2025	100%	22,670	29,200	78%
2030	100%	24,890	29,200	85%

Sources: FAA AC 150/5060-5, Airport Capacity and Delay and PBS&J, 2008.

Figure 5-2. Annual Service Volume vs. Annual Demand



Source: PBS&J, 2008.

Planning in the form of negotiations with the USAF for capacity improvements should begin before year 2015. By 2015 the airfield's capacity will have exceeded 60 percent and by 2025 the facility will be approaching the 80 percent threshold. Therefore all negotiations with the airport owners should be completed and all efforts to accommodate civilian users should be pending in order to avoid unnecessary and extensive delays. Such capacity-enhancing improvements typically include, but are not limited to, runway extensions, additional runway instrumentation, and/or taxiway improvements. However an alternative as simple as the USAF increasing the AOV may be a viable solution. A detailed review of capacity enhancing facility requirements that can be utilized by the airport leaser are discussed below.

5.2.2 Runway and Taxiway System Requirements

As stated earlier within this report, VPS is a joint use facility owned by the USAF, with a certain section leased for civilian use. The agreement between USAF and their leaser prohibit the analysis of the runway and taxiway system at VPS as leasing rights for the runways and taxiways are not extended for civilian usage.

5.3 AIRCRAFT APRONS AND PAVEMENT STRUCTURE

The existing aircraft apron and pavement at VPS totals approximately 150,000 square yards, used for aircraft run-up, aircraft parking, loading, circulation and aircraft movement, and terminal frontage. Additionally there are three parking positions for heavy aircraft located within the terminal apron as well as four parking positions for regional jets. The aircraft apron and pavement area are located in the north-west quadrant of the Airfield.

Terminal apron improvements to accommodate increased activity by larger aircraft, and to prepare for a future terminal addition, were recently completed. Expansion of the apron included an addition of 125 feet with approximately 9,200 square yards of concrete.

5.4 COMMERCIAL TERMINAL BUILDING

Terminal Space Program calculations were conducted in Spring 2008 by Gresham, Smith and Partners (GS&P) to determine the spatial requirements of the terminal facilities throughout the planning period (present to 2025). Those calculations were based upon the air traffic and passengers forecasts presented previously in Chapter 3 of this Master Plan. The GS&P Terminal Facility Requirements matrix is included as **Appendix A**, and is referenced throughout this section.

The existing domestic terminal building at VPS was recently completed, and has a total of approximately 110,700 square feet (sq. ft). The GS&P Terminal Space Program calculations reflects gross terminal space needed for 2010, 2015, 2020, and 2025 based on the forecast presented in Chapter 3. These calculations are based upon the aggregate of spatial requirements for each type of area within the terminal building. **Table 5-4** below depicts the gross terminal square footage for the planning period as calculated by GS&P.

Table 5-4. Commercial Terminal Area Requirements

	2010	2015	2020	2025
GS&P Gross Terminal Size (sq. ft.)	110,000	113,493	120,091	129,393
Planned Terminal Size [1] (sq. ft.)	110,700	134,700	134,700	134,700
Surplus/(Deficiency) (sq. ft.)	**700**	**21,207**	**14,609**	**5,307**

[1] Adjusted to reflect the existing Terminal Area not included in the GS&P Terminal Space Program (approx 24,000 sq. ft.).
Sources: PBS&J, 2008; GS&P, 2008; Airport Administration.

As seen from Table 5-4, the planned terminal is sized to facilitate expected levels of traffic throughout the planning period with exception to a relatively minor deficiency projected to occur by 2025. A small terminal expansion is expected to be completed during the first few years of this planning period which will increase the total size of the terminal by roughly 17,150 sq. ft. primarily by expanding the ticketing and baggage claim areas.

The following sections will discuss the individual areas of the terminal building, which include:

- Ticket Lobby and Counters
- Airline Office and Operations
- Public Waiting Lobby
- Public Corridors and Passenger Circulation
- Security Screening Stations
- Inbound Baggage and Baggage Claim
- Concessions, Restrooms
- Airport Authority and Management Facilities
- Terminal Circulation
- Mechanical
- Maintenance

Each independent area within the terminal has been acknowledged and spatial requirements calculated by GS&P. The following sections summarize the Terminal Area Space Program Requirements completed by GS&P.

5.4.1 Ticket Lobby and Counters

As the primary occupants of the terminal building, the commercial service operators

have specialized requirements for space and facilities within the terminal area. Counters for the sale of tickets, passenger processing, and check-in of baggage should be located near the entrance, clearly visible, and readily accessible from the terminal curb and lobby areas.

The need for, and amount of, ticket counter space, varies from one airline to another, and generally from one terminal to another. However, the principal variables that determine the spatial requirements for a given number of passengers, are the same, and are as follows:

- Average per passenger processing time
- Maximum ticket counter queue time desired
- Number of staffed ticket agent positions

The vast majority of VPS' passengers purchase their tickets in advance, as they do at most airports in the United States (U.S.), and only need their baggage to be checked in before proceeding to their appropriate gate. Still, occasional passengers will need to purchase tickets at the ticket counter, which will require a longer processing time. The GS&P analysis takes this trend into account and has planned for not only ticket counter agent positions, but also for Automated Ticket Machines (ATMs). **Table 5-5** depicts spatial requirements for the ticket counters and ticketing lobby areas, as well as the existing square footage of that area and its relation to the identified requirements.

5.4.2 Airline Office and Operations

Each airline carrier's operation requires space for administrative and operational functions. Typically, airline ticket office (ATO) space, with access to the ticketing and baggage areas, is provided behind the ticket counter. The ATO space is primarily used by ticket agents as a work space, and additional space is often provided for an employee lounge, training room, and station manager's office. Sometimes a multi-purpose room is used for all of these functions.

Currently, there is a total of approximately 5,000 square feet of airline office and operations space in the terminal building. However, the terminal expansion project is expected to add two more ticket counters and an additional 2,500 square feet of airline office and operational space.

Table 5-5. Ticket Lobby and Ticket Counter Space Allocation

Item	2010	2015	2020	2025
Ticket Counter Agent Positions Required	5	6	6	7
Ticket Counter ATM Positions Required	16	17	19	22
Ticket Counter (Linear Feet) Required	152	164	185	213
Ticket Counter Area (sq. ft.) Required	1,732	1,869	2,109	2,427
Ticket Counter Queuing Area (sq. ft.) Required	4,099	4,426	4,994	5,745
Ticket Lobby (sq. ft.) Required	6,840	7,380	8,325	9,585
Ticket Lobby and Counter Area Required (sq. ft.)	12,671	13,675	15,428	17,757
Existing Ticketing & Lobby Area (sq. ft.)	12,419	18,628	18,628	18,628
Surplus/(Deficiency) (sq. ft.)	**(252)**	**4,953**	**3,200**	**871**

Sources: PBS&J, 2008; GS&P, 2008.

Specifics of airline offices will vary among carriers, depending on the type and intensity of service provided. GS&P used the metric of 35 feet per linear foot of ticket counter when calculating ATO space. **Table 5-6** shows the required ATO space across the

planning period, as prepared by GS&P and compared to existing and expected ATO space.

Table 5-6. Airline Ticket Office Space Allocation

Item	2010	2015	2020	2025
Linear Feet of Ticket Counter	152	164	185	213
Depth of Counter Office Area (feet)	35	35	35	35
ATO Area Required (sq. ft.)	5,320	5,740	6,475	7,455
Existing ATO Space (sq. ft.)	4,991	7,487	7,487	7,487
Surplus/(Deficiency) (sq. ft.)	**(329)**	**1,747**	**1,012**	**32**

Sources: GS&P, 2008; PBS&J, 2008.

5.4.3 Passenger Holdrooms and Circulation

Public corridors are provided for passenger circulation between aircraft boarding gates, lobbies, and other areas within the terminal building. As described by the FAA, the effective corridor design width is the total width less obstacles (e.g. telephones, waste receptacles, benches, columns, displays, etc.), with a minimum clearance of approximately two feet on either side. The clearance is provided due to typical passenger patterns in which a person normally maintains a two-foot clearance between walls and other obstacles. Furthermore, seating areas near aircraft gates called holdrooms are provided to allow adequate queuing space near an aircraft gate to allow for deplaning passengers to exit, and enplaning passengers to await their boarding call.

Based on the passenger traffic forecast presented in Chapter 3, as well as mix index and load factor assumptions, GS&P calculated the holdroom and circulation space required to accommodate three additional gates aimed at supporting simultaneous operations of two Boeing 737-800s and one 757-200. The spatial requirements for holdrooms and circulation space are shown in **Table 5-7.**

5.4.4 Security Screening Stations

Commercial operations using aircraft required to meet Federal Aviation Regulation (FAR) Part 121 criteria, are instructed by Section 121.538 of Title 49 - Transportation CFR Part 1544 – Aircraft Operator Security to screen all passengers prior to their entrance to sterile areas; those areas containing only individuals that have been cleared through security. A variety of screening systems are acceptable, depending on a terminal's layout.

Table 5-7. Passenger Holdroom and Circulation Space Allocation

Item	2010	2015	2020	2025
Additional Holdroom Space Required (sq. ft.)	9,038	9,038	9,038	9,038
Additional Circulation Space Required (sq. ft.)	9,720	9,720	9,720	9,720
Total Additional Required Holdroom and Circulation Space (sq. ft.)	**18,758**	**18,758**	**18,758**	**18,758**
Existing Holdroom and Circulation Space	**9,706**	**18,758**	**18,758**	**18,758**
Surplus/(Deficiency) (sq. ft.)	**(9,052)**	**0**	**0**	**0**

Sources: GS&P, 2008; PBS&J, 2008.

The GS&P Space Program Calculations for VPS assumes only two security stations throughout the majority of the planning period, and a third security station by 2025. GS&P planned for 1,000 square feet per security station and an additional 120 square feet as a search area. **Table 5-8** below shows security screening station size requirements as prepared by GS&P.

Table 5-8. Security Screening Station Space Allocation

Item	2010	2015	2020	2025
Number of Security Stations	2	2	2	3
Square Footage Required per Station	1000	1000	1000	1000
Search Area (sq. ft.)	120	120	120	120
Total Area Required for Security Stations (sq. ft.)	2,120	2,120	2,120	3,120
Existing Area for Security Stations (sq. ft.)	2,530	2,530	2,530	2,530
Surplus/(Deficiency) (sq. ft.)	**410**	**410**	**410**	**(590)**

Sources: GS&P, 2008; PBS&J, 2008.

5.4.5 Inbound Baggage and Baggage Claim

The baggage claim facility consists of two types of areas, public and non-public. The public space (baggage claiming area) is that in which passengers and visitors have access to checked baggage displayed for identification and claiming. The non-public space is that used by airline personnel to off-load bags from carts and containers onto claim devices or systems that transfer the baggage to the public areas. The non-public portion of the baggage claim facility should be easily accessible from the aircraft apron area, so that inbound baggage can be delivered directly and quickly by luggage carts. The baggage claim area should be retained at the end of the deplaning passenger flow pattern, and in close proximity to the terminal curb.

The GS&P calculations for inbound baggage and public baggage claim areas take numerous factors into account including; primary and secondary screening facilities and TSA support areas for the inbound baggage system, and percent of passengers claiming bags, bags per passenger, and lineal feet per bag for the public baggage area. This information can be reviewed in more detail in the Appendix A of this report. **Table 5-9** presents the total area required for both inbound and public baggage areas.

Table 5-9. Inbound Baggage and Baggage Claim Space Allocation

Item	2010	2015	2020	2025
Total Area Required for In-line Baggage Screening (sq. ft.)	15,125	15,125	15,125	15,125
Existing Area for In-line Baggage Screening	8,786	13,179	13,179	13,179
Surplus/(Deficiency) (sq. ft.)	(6,339)	(5,194)	(7,575)	(10,629)
Total Area Required for Baggage Claim (sq. ft.)	16,976	18,373	20,754	23,808
Existing Area for Baggage Claim (sq. ft)	5,569	17,069	17,069	17,069
Surplus/(Deficiency) (sq. ft.)	**(11,407)**	**(1,304)**	**(3,685)**	**(6,739)**

Sources: GS&P, 2008; PBS&J, 2008.

5.4.6 Concessions

A wide variety of concessions are typically located within an airport terminal building. Those currently at VPS include three restaurants, a gift shop, a lounge, and car rentals. The Airport has a high enough level of activity to support these concessions, which are assumed to be operating at a profit. These next few sections will highlight the space

requirements for concessions as calculated by GS&P and compare that to current space allocations.

Food and Beverage

The three "quick service" restaurants that are located at VPS are Euro Café, Quizno's and Tropical Landing. These facilities along with a news and gift shop equate to a combined area of approximately 4,900 square feet.

GS&P analyzed food and beverage area needs for VPS based on forecast enplanement numbers from Chapter 3, and implemented assumptions including percent of passengers using food concessions and patron dwell time. Furthermore, GS&P split the required restaurant and lounge space for both airside and landside areas of the terminal. **Table 5-10** presents the total space requirements for restaurants and lounge space for both airside and landside as prepared by GS&P. A detailed overview of calculations can be found in the appendix.

Table 5-10. Food and Beverage Space Allocation

Item	2010	2015	2020	2025
Total Area Food & Beverage Landside (sq. ft.)	8,073	8,738	9,869	11,322
Existing Area Food & Beverage Landside (sq. ft.)	4,898	4,898	4,898	4,898
Surplus/(Deficiency) (sq. ft.)	**(3,084)**	**(3,749)**	**(4,880)**	**(6,333)**

Sources: GS&P, 2008; PBS&J, 2008.

Car Rental Agencies

There are currently five car rental groups (Avis, Hertz, Budget, National/Alamo, and Thrifty/Dollar) located in the northwest section of the main terminal. These rental car companies occupy a total of approximately 2,996 square feet of counter and office space inside the terminal building.

News/Gift Shop

Hudson News currently occupies three news and gift shops located in the terminal building. Their total news/gift concession area is approximately 2,900 square feet. Any additional news and gift shops should be located in highly visible areas in or near the main passenger/visitor circulation areas, such as next to the main lobby waiting area, or along the enplaning corridors.

GS&P calculated the News and Gift area requirements based upon 15 percent of the required food and beverage space for the landside areas, and 45 percent of the required food and beverage area for airside areas. Using those assumptions GS&P calculated landside news and gift space to be 2,712 square feet in 2010. **Table 5-11** below reflects the requirements throughout the planning period.

Table 5-11. News/Gift Concessionaries Space Allocation

Item	2010	2015	2020	2025
Total Area Required News/Gift Shop (sq. ft.)	2,712	2,935	3,315	3,803
Existing Area News/Gift Shop (sq. ft.)	2,861	2,861	2,861	2,861
Surplus/(Deficiency) (sq. ft.)	**149**	**(74)**	**(454)**	**(942)**

Sources: GS&P, 2008; PBS&J, 2008.

5.4.7 Restrooms

Public restrooms must be sized for anticipated peak-hour building occupancies, in accordance with codes applicable to the local, state, and federal (i.e., Americans with Disabilities Act [ADA]) requirements. Space allowances used for airports vary. Currently, the women's and men's restrooms areas each total approximately 1,700 square feet. Restroom facilities should be at locations convenient to the departure area, ticket lobby, restaurant facilities, and baggage claim areas. At most terminal buildings, the main restroom facilities can be grouped in one centralized location; typically the main restrooms are located in the public lobby area. Secondary restroom facilities are located beyond the security screening area in the departure area. Additionally, private toilet facilities are sometimes provided in conjunction with operational and administrative facilities in non-public-use areas. Standard planning requirements for public restrooms recommend 1,500 to 1,800 square feet per 500 peak-hour passenger. **Table 5-12** shows the required space for public restrooms throughout the planning period.

Table 5-12. Restroom Space Allocation

Item	2007	2015	2020	2025
Peak Hour Passengers	557	710	801	919
Minimum Restroom Requirements (3 sq. ft./ PH Pax)	1,671	2,130	2,403	2,757
Existing Space (sq. ft.)	1,712	1,712	1,712	1,712
Surplus/(Deficiency) (sq. ft.)	**41**	**(418)**	**(691)**	**(1,045)**

Sources: FAA AC 150/5360-13 and PBS&J, 2008.

5.4.8 Airport Authority and Management Facilities

Airport management facilities vary a great deal according to the size of the staff and type of operations performed. Therefore, the requirements must be matched to individual airports. Currently, VPS occupies offices on the second level of the terminal building. The total space dedicated to Airport administration is currently 6,421 square feet, and conference room space totals 1,942 square feet.

GS&P assumed that 4,901 square feet and 1,942 square feet would be adequate throughout the planning period for airport administration/operations and meeting/conference rooms respectively. However, the possibility to include additional administrative space in the first floor of the terminal building is currently being explored by the Airport.

5.4.9 Transportation Security Administration Area

The Transportation Security Administration is a component of the Department of Homeland Security, and was created in response to the September 11, 2001 terrorist attacks. One charge of TSA is to provide aviation security, which it does through the use of Transportation Security Officers or screeners. It is the intent of VPS to provide adequate office and administration space for TSA within the VPS terminal building.

GS&P developed spatial requirements for the TSA administration area at VPS based on the aggregate of space needed for each component of the TSA administration area. Some areas include offices, file room, secured storage, etc. A more detailed view of GS&P's calculations can be found in the appendix of this report. It was calculated that VPS should provide 2,251 square feet of space for use by TSA.

Currently 1,105 sq. ft. of space exists for use by TSA as office space and administration purposes. When considering GS&P's calculated TSA administration space requirement,

1,146 square feet of additional space should be provided to meet the requirement.

5.5 GROUND ACCESS AND TERMINAL ROADS

Ground access to VPS is available via State Road 85 roughly half way between Valparaiso and Niceville to the northeast and Shalimar and Fort Walton Beach to the southwest. The one way terminal road spurs off of State Road 85 west of the terminal building and after allowing access to the various parking lots in addition to providing curb space for the terminal, the road exits back onto State Road 85 on the east side of the property. As peak hour passenger enplanements continue to rise, additional terminal curb front cueing space may need to be added to accommodate increased vehicles being used to pick up and drop off passengers.

5.6 AUTOMOBILE PARKING

Airport terminal public parking lots typically provide for short-term, long-term, and remote parking. Short-term lots are for parking durations of less than three hours, and are located nearest the terminal. Because of the convenience of shorter walking distances for passengers afforded by the short-term lots, a premium parking fee may be charged. Short-term lots typically account for 15 to 30 percent of total parking lot capacity. Long-term lots are located further from the terminal building and are for parking durations that exceed three hours. Typically, a lesser fee than that associated with the short-term lot is charged due to reduced convenience to their users; including greater walking distances and longer parking durations. Long-term lots typically consist of 70 to 85 percent of a commercial service airport's parking capacity.

Based on the planning factor of 1,400 parking spaces per one million annual passengers, at 44 square yards per vehicle, public parking (short and long-term) requirements for the Airport were determined. **Table 5-13** shows the public parking requirements at VPS over the planning period.

Table 5-13. Public Parking Requirements

Item	2007	2015	2020	2025
Total Annual Passengers	370,000	471,969	532,100	611,000
Total Parking Spaces Required	518	661	745	855
Area Required (sq. yd.)	22,792	29,084	32,780	37,620
Existing Parking Spaces	1,276	1,849	1,849	1,849
Existing Area (sq. yd.)	56,144	81,356	81,356	81,356
Surplus/Deficiency (sq. yd.)	33,352	52,272	48,576	43,736

Sources: Airport Staff and PBS&J, 2008.

5.7 AIRCRAFT FUEL STORAGE

Fuel storage at VPS is located on the western side of the Airport, just south of the commercial terminal building. This area, otherwise known as the "fuel farm", consists of three 20,000-gallon above-ground storage fuel tanks. All three fuel storage tanks contain Jet-A aviation fuel. However, a new fuel storage facility for VPS is currently under construction, and is expected to replace the existing facility by 2009. The expanded facility, when opened, will have four 20,000 gallon Jet-A tanks and space allotted to allow for future expansion.

Okaloosa County fueling services for all commercial aircraft are handled by independent contractors. Fuel flowage projections estimate that approximately 123,691 gallons of Jet-

A fuel will be sold weekly by 2030. Additionally based on the aircraft activity forecast presented in Chapter 3, fuel facilities for the remaining tenants will require additional capacity at approximately the same growth rate as the forecast demand.

The required capacity enhancements necessary to accommodate this demand are presented in **Table 5-14** and have been determined based upon the facilities required to store the average one-week demand of fuel. It should be noted that as operations requiring Jet-A fuel increase at VPS, fuel storage requirements may need to be reviewed to ensure an adequate level of Jet-A capacity is provided.

Table 5-14. Fuel Storage Requirements

Year	Average Week Fuel Demand (JET A gallons)	Capacity (Gallons)[1]	Fuel Tanks Required[2]	Fuel Trucks Required	Total Fuel Farm Area (sq./ft.) [(3)]
2010	92,753	102,028	5	1	8,000
2015	100,585	110,644	5	2	8,000
2020	108,470	119,317	6	2	9,600
2025	115,833	127,416	6	2	9,600
2030	123,691	136,060	6	2	9,600

Notes: (1) Based on 110% capacity of forecast demand
(2) Based on 20,000 gallon storage tanks
(3) Based on average area of 1,600 sq./ft per tank for safety and operational areas
Source: PBS&J, 2008.

5.8 AIRFIELD LIGHTING, SIGNAGE AND PAVEMENT MARKINGS

5.8.1 Airfield Lighting

The existing runway lighting at VPS consists of the following systems:

- 4 - Light Precision Approach Path Indicator (PAPI) Runway 12-30
- Approach Lighting/Sequenced Flashing Lights Category1 (ALSF) Runway 12-30
- 4 - Light Precision Approach Path Indicator (PAPI) Runway 1-19
- Approach Lighting/Sequenced Flashing Lights Category1 (ALSF) Runway 1-19

With exception to the edge lighting serving the VPS's taxiway connectors and apron, the airfield lighting is maintained by Eglin Air Force Base; as a result any required future improvements to the airfield lighting systems at VPS should be conducted through the USAF.

5.8.2 Airfield Signage

With exception to the signage on the two connector taxiways linking the Airfield to the commercial service apron, the signage for VPS is maintained by Eglin Air Force Base; therefore, all required signage for the Airport will be conducted through the USAF personnel. It should be noted that based on inventory data, the existing airfield signage at VPS is adequate for the current facilities. However, signage improvements should be considered in conjunction with all future airfield projects. Projects that normally require signage updates include: new runway construction, runway extensions, taxiway extensions, and/or construction and terminal apron expansion. Signage, in accordance with FAA guidelines, should be incorporated into the design and construction of each project.

5.8.3 Pavement Markings

The runway markings at VPS should be appropriately relocated to coincide with

completion of any proposed runway extensions, taxiway extensions, and any necessary improvements to the apron area. However, with the exception of the apron area all airport improvement projects will be controlled by the USAF.

5.9 AIRPORT SECURITY AND FENCING

VPS resides within an active military base; subsequently security surrounding the civilian airport is extremely important. The Okaloosa County Sheriff's Office and the Transportation Security Administration are responsible for the daily security of the Airport. VPS leases the property on which it operates; therefore, all future property fencing issues should be consulted with the property owner, Eglin Air Force Base.

As additional safety measures, any future property leased by the Airport should be fenced and properly secured. Any additional buildings or parking areas constructed within the Airport property should have adequate security lighting, and a perimeter road inside the property line should be developed to provide maintenance and security access to the fence line. Also, the use of additional security cameras at key locations (i.e., remote gate locations, hangars, and corporate buildings, etc.) may be implemented.

5.10 NON-AVIATION USE

The parcel of land that VPS leases is owned by Eglin Air Force Base. No subletting of the civilian airport area for non-aviation uses is anticipated due to the area's constant high security alert.

5.11 SUMMARY

This section has identified the general facility requirements necessary to meet the 20+-year forecast of aviation demand. Prior to the actual physical layout of these facilities, specific refinements must be accomplished to enable the Airport to develop in a coherent and logical manner. The facility requirements are based upon the forecast of aviation activity. A summary of the general facility requirements and forecasted deficiencies has been compiled in **Table 5-15**.

Table 5-15. Summary Table

Item	Existing (2007)	Planning Stage Requirements		
		2015	2020	2025
Total Operations as % of ASV/AOV	51%	65%	71%	78%
Gross Terminal Building Spatial Requirements	110,700	134,700	134,700	134,700
Ticket Lobby and Ticket Counters Spatial Requirements	12,671	13,675	15,428	17,757
Airline Ticket Offices Spatial Requirements	5,320	5,740	6,475	7,455
Passenger Holding and Circulation Additional Requirements	18,758	18,758	18,758	18,758
Security Screening Spatial Requirements	2,120	2,120	2,120	3,120
In-Line Baggage Spatial Requirements	15,125	15,125	15,125	15,125
Baggage Claim Area Spatial Requirements	16,976	18,373	20,754	23,808
Food & Beverage Spatial Requirements	8,073	8,738	9,869	11,322
News and Gift Shop Spatial Requirements	2,712	2,935	3,315	3,803
Restroom Facility Spatial Requirements	1,671	2,130	2,403	2,757
Public Parking Spatial Requirements	22,792	29,084	32,780	37,620
Aircraft Fueling Facility Spatial Requirements	8,000	8,000	9,600	9,600

Sources: GS&P and PBS&J, 2008.

AIRPORT DEVELOPMENT PLAN

Northwest Florida Regional Airport

6

6.1 GENERAL

The primary objective of this chapter is to evaluate existing airport development initiatives and identify land use protections for future development at Northwest Florida Regional Airport (VPS or Airport) that will meet the Airport's aviation needs over the planning period. Following the completion of aviation demand forecasts and demand/capacity and facility requirements analyses, various development concepts for VPS were evaluated. Alternatives were developed for the VPS lease hold area only, which includes the aircraft parking apron, terminal buildings, and limited adjacent properties; the majority of the Airfield is owned by the United States Air Force (USAF) which leases roughly 131 acres to VPS. Considering that the Airport is currently under construction with previously planned development, the first section of this chapter discusses the existing development concept of VPS as well as some prior planning efforts that have been guiding the current development.

The primary objective of this chapter is to evaluate existing airport development initiatives and identify land use protections for future development at Northwest Florida Regional Airport (VPS) that will meet the Airport's aviation needs over the planning period.

Analyzing current development and previous planning work outlines the foundation for the Airport's future development strategy. This chapter also discusses the recommended future development concepts identified to have the greatest potential for implementation while meeting the projected demand and development goals.

6.2 DEVELOPMENT CONSIDERATIONS

Prior to determining the ultimate development concept, the various airside, landside, and general airport requirements were identified. The evaluation criteria for each requirement and subsequent alternative may vary with each particular functional area. In general, the core criteria used in the initial alternatives review and evaluation process can be grouped into four general categories. These include:

1. **Operational** – Any selected development concept should be capable of meeting the Airport's facility needs as they have been identified for the planning period. The preferred development plan should resolve any existing and/or projected deficiencies as they relate to Federal Aviation Administration (FAA) design and safety criteria.

   Further consideration should be given to ground access routes, existing airfield operational factors such as aircraft delay and fleet mix, parking location and availability and ensuring the concept's ability to meet fluctuating demand levels and activity types.

2. **Environmental** – Airport growth and expansion has the potential to impact the Airport's environs. The selected plan should seek to minimize environmental impacts in the areas outside the Airport's boundaries. The development concept should also recognize sensitive environmental features that may be impacted by the alternatives evaluated herein.

   In addition, natural features that may enhance or detract from the desired architectural or community image should be considered. Also, environmental areas, such as wetlands, floodplains, rock formations, etc., that may drive spatial organization, ground access and/or facility locations must be evaluated.

3. **Cost** – Some alternatives may result in excessive costs as a result of expansive construction, acquisition, or other development requirements. In order for a

development plan to best serve the Airport and the community it must satisfy development needs at reasonable costs.

Such costs include the actual cost of construction as well as the continuing costs for operation and maintenance of the facilities and infrastructure. Cost control methods, such as project phasing and shared or expandable facilities, that can be used to help reduce costs and achieve similar development results should be considered and incorporated when possible to reduce the financial burden of implementation and operation.

4. **Feasibility** – The selected alternative should be capable of being implemented. Therefore, the development plan must be acceptable to the FAA, Florida Department of Transportation (FDOT), city and county government, and the community served by the Airport. The development concept should proceed along a path that supports the area's long-term economic development and diversification objectives.

   The development concept should augment local government's efforts to enhance existing business activity and stimulate growth in new industry sectors. The Airport development plan should provide a lucrative asset for the County in marketing the area to prospective business operations. Finally, the development concept must provide the Okaloosa County Airports System with a master strategic development plan that will guide the growth of the Airport for the foreseeable future and provide the tools to ensure its financial stability.

The following sections of this chapter will use the previously described criteria in evaluating those alternatives which best meet the Airport's long-term aviation needs and strategic development goals. Development alternatives are presented in the following separate but interrelated functional areas of the Airport:

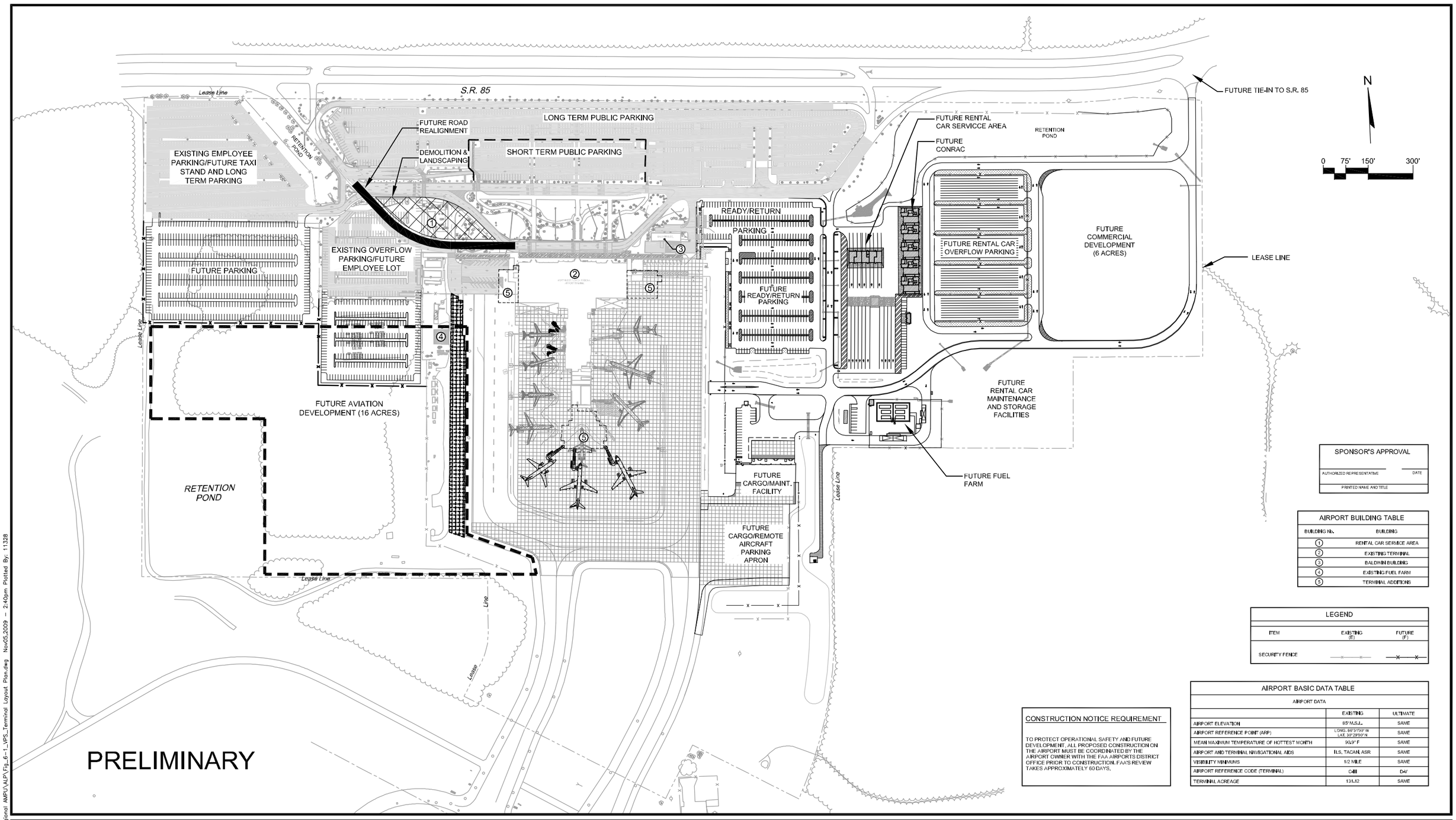
- Existing Conditions
- Aviation Development Areas
- Non-Aviation Development Areas
- Land Use Concepts

It should be noted that any evaluation of alternatives could also include a "no action" alternative. However, a "no action" alternative may not meet the forecast requirements of the Airport or the long-term development goals of the OCAS. Further, such an alternative could effectively reduce the quality of services being provided to the general public and likely negatively impact the areas ability to attract additional economic growth. A "no action" alternative in any of the functional areas identified would limit future development at VPS to the existing airside and landside configuration and those projects necessary to meet forecasted demand.

6.3 EXISTING CONDITION BASE MAP

The first step in evaluating the potential for additional aviation development at VPS is a review of the existing site conditions. This includes an analysis of the existing physical features of the area, including topography, vegetation, and known sensitive environmental conditions.

In its entirety, all existing natural and/or man-made constraints, existing and planned adjacent land uses, existing and potential site enhancements, and the overall level of building potential (including existing structures), were identified. Specific aspects of this evaluation that were deemed significant to the level of conceptual aviation planning were then compiled into an existing conditions base map depicted as **Figure 6-1**.



PRELIMINARY

SPONSOR'S APPROVAL

AUTHORIZED REPRESENTATIVE	DATE
PRINTED NAME AND TITLE	

AIRPORT BUILDING TABLE

BUILDING No.	BUILDING
1	RENTAL CAR SERVICE AREA
2	EXISTING TERMINAL
3	BALDWIN BUILDING
4	EXISTING FUEL FARM
5	TERMINAL ADDITIONS

LEGEND

ITEM	EXISTING (E)	FUTURE (F)
SECURITY FENCE	x x	x x

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

AIRPORT BASIC DATA TABLE

AIRPORT DATA	EXISTING	ULTIMATE
AIRPORT ELEVATION	85' M.S.L.	SAME
AIRPORT REFERENCE POINT (ARP)	LONG. 86°31'09" W LAT. 30°23'59" N	SAME
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH	93.9° F	SAME
AIRPORT AND TERMINAL NAVIGATIONAL AIDS	ILS, TACAN, ASR	SAME
VISIBILITY MINIMUMS	1/2 MILE	SAME
AIRPORT REFERENCE CODE (TERMINAL)	C-III	D-IV
TERMINAL ACREAGE	131.12	SAME

REVISIONS	
DATE	DESCRIPTION

CLIENT: OKALOOSA COUNTY

PROJECT: NORTHWEST FLORIDA REGIONAL AIRPORT TERMINAL PLAN UPDATE

SHEET TITLE: TERMINAL LAYOUT PLAN FUTURE FACILITIES

DRAFT

PBS&J® NATIONAL AVIATION
482 South Keller Road
Orlando, Florida 32810-6101
TEL. (407) 647-7275
FAX. (407) 740-8710
www.pbsj.com

JOB NO.:	007127527
DRAWN:	OV
DESIGN:	OV
CHECKED:	JH / TER
DATE:	MAY 2009

FIGURE 6-1

SHEET 2 OF 3

J:\AVServ\071275.27 Okaloosa Regional AMPU\ALP\Fig_6-1_VPS_Terminal Layout Plan.dwg Nov05,2009 – 2:40pm Plotted By: 11328

This map forms the basis from which all alternatives analyses and concept development was derived and was used to guide the overall location for aviation development areas based on the existing opportunities and constrains of the area.

6.4 RECENT, CURRENT, AND PROGRAMED DEVELOPMENT

Modern airport facilities are constantly changing and improving, and VPS is no exception. This section will discuss the different improvements currently being made to the VPS facility, as well as those projects scheduled for the near future. Understanding the current and proposed developments and current site conditions will allow proposed development alternatives, discussed later in this chapter, to dovetail in with the Airport's overall direction and current Airport Capital Improvement Program (ACIP).

The 1998 Airport Master Plan Update (AMPU) for VPS illustrated the need for a more expansive terminal building capable of handling the growing passenger traffic. The terminal expansion project began in September of 1999, and construction documents were finalized and out for bid in August of 2003. A new terminal building soon began taking shape just behind the original 38,000 square foot terminal building built in 1973. The new VPS terminal building was open to the public just 14 months after construction began.

In June 2007 PBS&J, at the request of OCAS, performed an evaluation of the terminal size in relation to the forecast needs. At that time it was shown that the new terminal was adequate for current activity levels, but would require expansion to meet the demands of the 20 year forecast growth period. This caused OCAS to begin a new planning and development program for terminal additions.

In March 2008 PBS&J, in conjunction with Gresham Smith and Partners, developed a presentation for VPS titled *Terminal Additions-Schematic Concepts Review*. That presentation outlined a few short term development elements to expand upon the now five year old terminal building and keep its capacity in line with the increases in passenger traffic. The development elements included in that presentation are depicted in **Figure 6-2**, and included:

- Baggage Claim Additions
- Ticket Counter Additions
- Baggage Screening Expansion
- Security Check Point Renovations
- Concourse Additions
- Vehicular Access Roadway Modifications

Figure 6-3 reflects the interior terminal components and shows direction of expansion.

6.4.1 Baggage Claim Addition

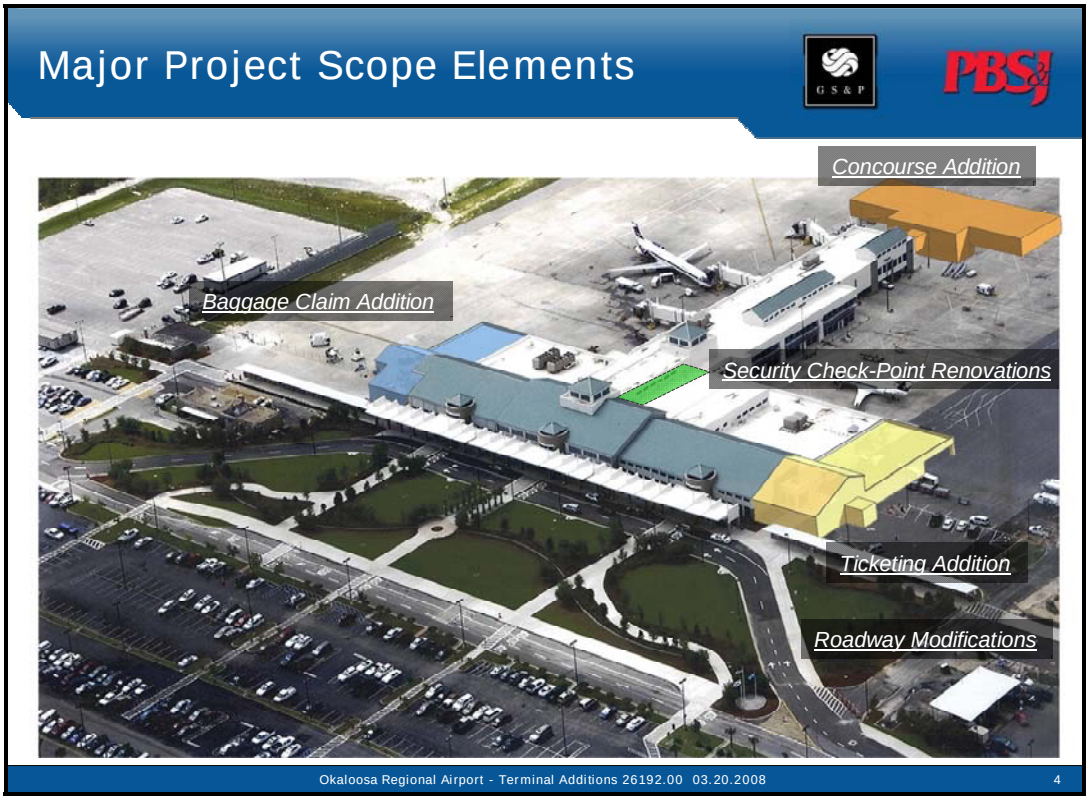
The baggage claim addition is currently included on the ACIP, and will upon being constructed increase the baggage claim area roughly 11,500 square feet in total. This improvement corresponds with the facility requirements analysis presented in the previous chapter and is expected to provide adequate capacity given the airports forecasted demand for at least the short term of the planning period.

6.4.2 Ticket Counter Addition

Similar to the baggage claim addition, the ticket counter addition is also currently included in the ACIP, and upon being constructed will increase the ticket counter, lobby

area, and baggage screening by roughly 12,500 square feet in total. Modifications to the current in-line baggage screening system are planned to be made to mitigate issues related to luggage getting stuck. An addition of this caliber is in line with the facility requirements analysis presented in the previous chapter, and is expected to provide adequate capacity given the Airport's forecasted demand throughout the planning period.

Figure 6-2. Development Elements



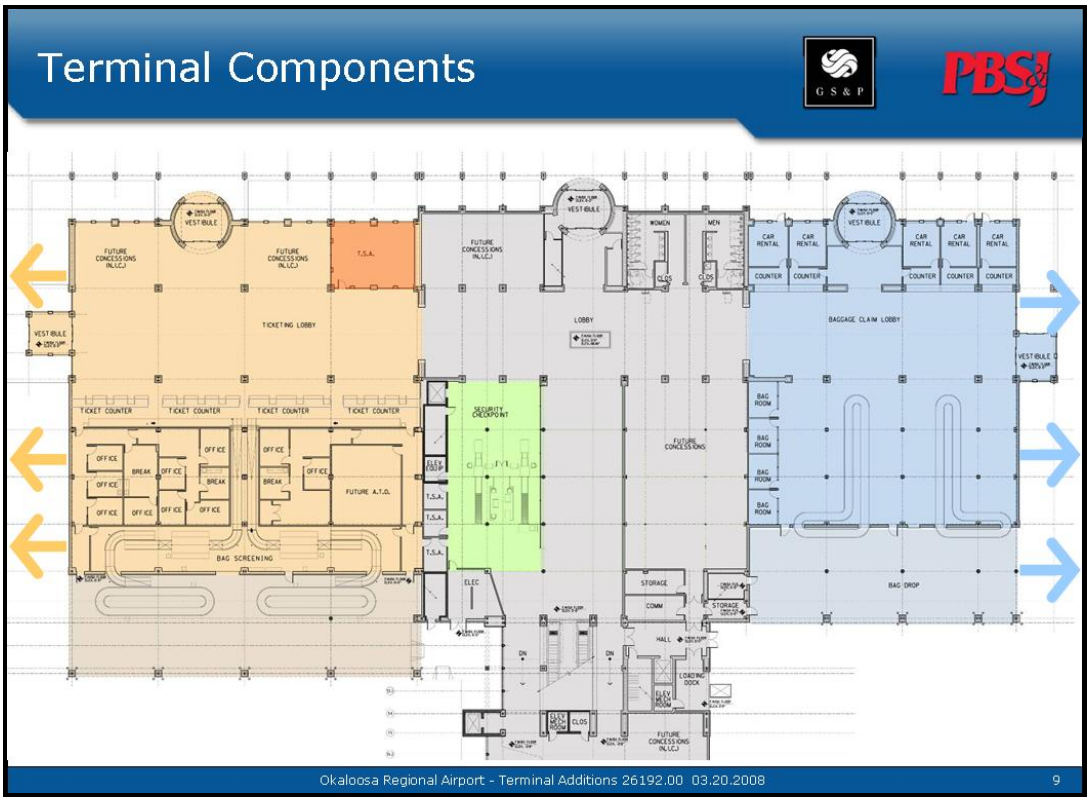
Sources: PBS&J, 2008; GS&P, 2008.

6.4.3 Security Check Point Renovations

The security check point areas are scheduled to be renovated within the first few years of this planning period. Despite the facility requirements analysis not identifying a need for a larger security area footprint, or the need for additional equipment, issues have been identified with the current security layout. During times of heavy traffic, the existing security area develops a long waiting line and at times the queuing area for security screening reaches capacity and congestion overflows into the ticket lobby area.

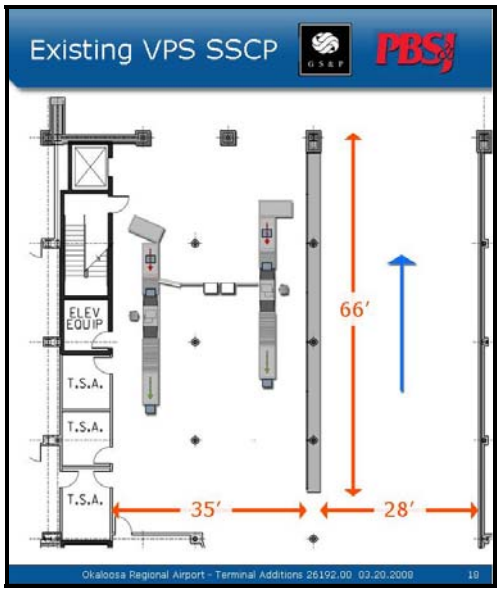
Another known situation is that the security equipment regularly encounters interference from other electrical equipment below the floor of the building, which causes inefficiency in passenger processing. Renovations of the security area will place shielding between security equipment and the floor to mitigate electrical interference and presumably increase operational efficiency. Also, space is available to implement a third security screening station and ideally decrease passenger processing times by half. The proposed reallocation of the security check point area can be seen in **Figure 6-4** and **Figure 6-5**.

Figure 6-3. Interior Terminal Components



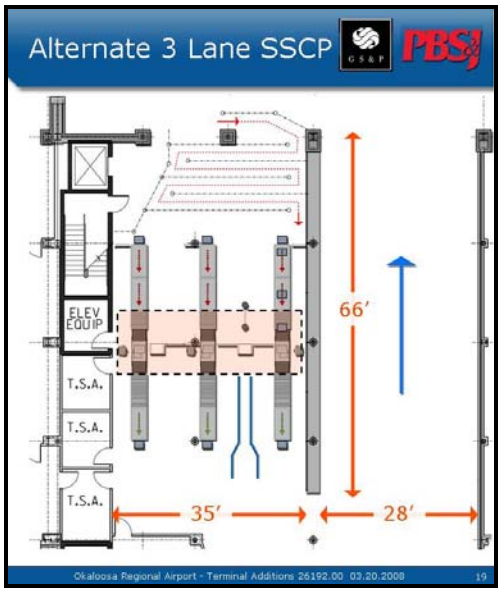
Sources: PBS&J, 2008; GS&P, 2008.

Figure 6-4. Security Checkpoint



Sources: PBS&J, 2008; GS&P, 2008.

Figure 6-5. Security Checkpoint



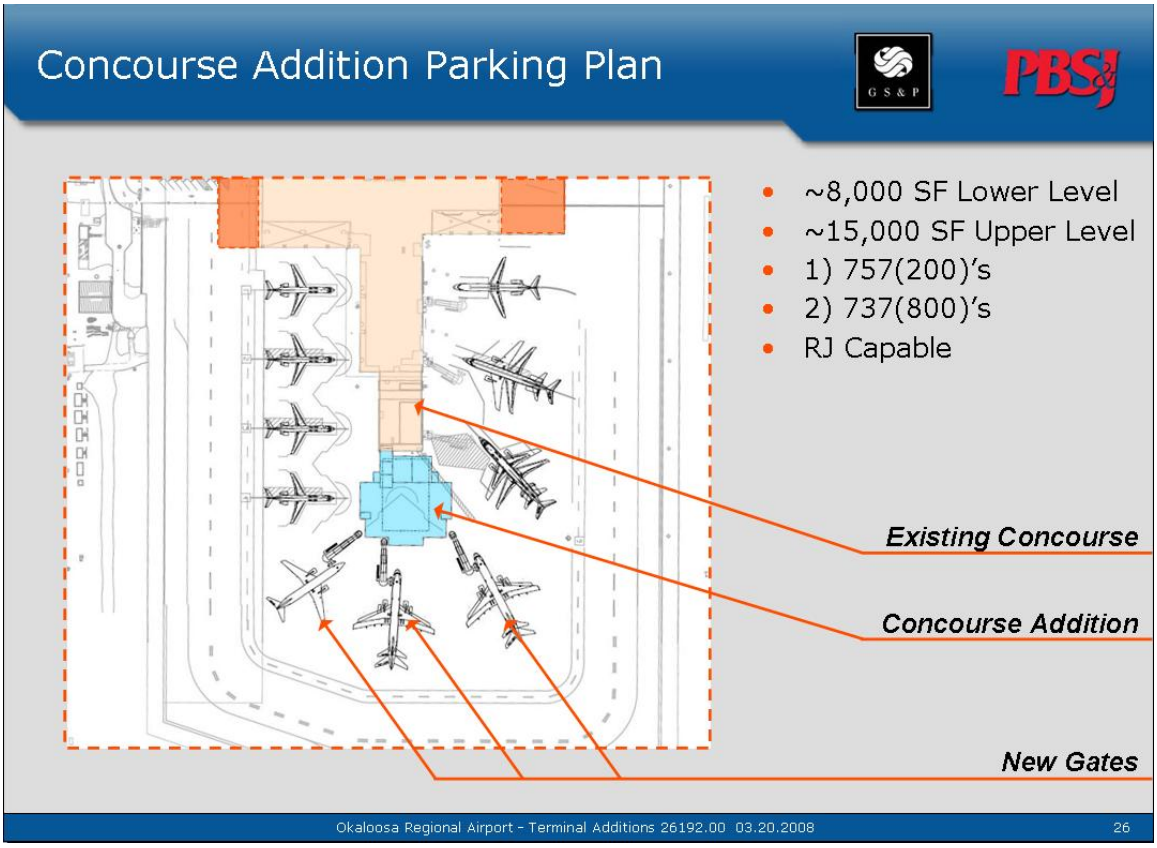
Sources: PBS&J, 2008; GS&P, 2008.

6.4.4 Concourse Addition

The long-term development plan for the VPS terminal includes expansion in the form of a concourse addition, often referred to as the “hammer head”, which can be seen in

Figure 6-6. That proposed expansion is currently in the planning and design phase, and is projected to provide for 8,000 square feet of additional operations space on its ground floor (apron level) and 15,000 square feet of additional passenger holdroom and circulation concourse on the second level. The ground level would serve as shell space for any future build-out, and the concourse addition would allow for three additional large aircraft (Boeing 737 and 757) gate parking positions. Such a concourse addition should fulfill the long-term deficiencies identified in the previous chapters. A preliminary model of the concourse addition can be seen in **Figure 6-6**.

Figure 6-6. Concourse Addition



Sources: PBS&J, 2008; GS&P, 2008.

6.4.5 Vehicular Access Roadway Modifications

Minor modifications to landside areas were planned and presented for the near future. Those included primarily areas adjacent to the main terminal entrance road. A new taxi stand area was proposed to be added in an existing parking lot, and the removal of the soon to be abandoned rental car wash rack area was proposed to be replaced by green space.

6.4.6 Consolidated Rent-A-Car Facility

A CONRAC is currently under construction on the eastern side of VPS property adjacent to what is currently used for overflow parking. This addition will provide new spaces for each of the airport's five (5) existing rental car companies to work in a consolidated area and cumulatively offer roughly 440 ready, return and storage spaces. The CONRAC facility would be designed to function as a common use facility in which all rental car

companies serving the airport would utilize. The CONRAC facility plan also includes a new fuel farm and new car wash facility.

6.4.7 Cargo/Maintenance Facility

A new 12,000 square foot Cargo/Maintenance Facility is currently under construction along the eastern side of the existing aircraft apron. The Airport maintenance staff is planned to occupy 4,000 square feet of the facility with a maintenance garage, office space, training room, break room, and storage areas. The remaining 8,000 square feet is planned to be left as shell space for the Airport to lease to cargo operators. The north side of the facility will be landside with parking and storefront access for the public. The south side of the building is within the secure airside and provides direct access to the existing concrete apron.

6.4.8 Remote Overnight Apron

Construction is currently underway on a new remote overnight apron to the south of the new cargo/maintenance facility and east of the existing aircraft apron in order to provide additional aircraft parking locations during terminal construction and cargo operations. When complete, that apron will consist of approximately 8,300 square yards of new PCC pavement and is sized to accommodate a Boeing 757 and adjacent Boeing 727.

6.5 RECOMMENDED LAND-USE PROTECTION FOR FUTURE DEVELOPMENT

Considering VPS's current and programmed space allocation, future development areas are limited. The following sections discuss available areas for future development and highlight their potential opportunities from a general land-use perspective. The purpose of identifying proposed land-uses in areas that are currently not developed is to protect them from incompatible development and ensure that all safety, security, environmental, and zoning measures are properly met prior to design of any proposed development. The recommended future development is aimed at positioning the Airport to adequately accommodate its forecast demand, and to provide financial viability for the Airport.

6.5.1 Airside Recommendations

Roughly 14 acres on the western side the Airport's leasehold is currently undeveloped. This area would best be categorized as airside property considering its proximity to the terminal apron, taxiways, and the airfield. It is recommended that this parcel be protected for future airside improvements; including, additional apron space, satellite terminal, or other commercial aviation related development as deemed appropriate through future master planning efforts.

6.5.2 Landside Recommendations

As stated previously, limited developable space exists on the landside areas of the VPS leasehold. The single most notable developable area is located on the eastern side of the leased area, east of the proposed CONRAC site. This site contains approximately six acres, has favorable access to Eglin Parkway, and is adequately separated from the terminal building, thereby minimizing any airside or landside operational impacts. This area is recommended to be protected for the purpose of future commercial or retail development supporting the future needs of the Airport's users.

6.6 SUMMARY

The programmed developments highlighted in this chapter are expected to meet the needs of the Airport as addressed in the Facility Requirements section of this AMPU. Furthermore, placing land-use protections on the few developable acres still available within the leasehold ensures that future development is in line with the Airport's goals and objectives.

ENVIRONMENTAL OVERVIEW

Northwest Florida Regional Airport

7

7.1 INTRODUCTION

The purpose of this chapter is to present an overview of the existing environmental conditions at the Northwest Florida Regional Airport (VPS). Such an overview does not constitute an Environmental Assessment (EA), as defined by the Federal Aviation Administration (FAA) Orders 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions,* and 1050.1E *Environmental Impacts: Policies and Procedures*; however, the analyses in this chapter were conducted in accordance with the guidelines set forth in the aforementioned FAA Orders.

According to the FAA Orders, nineteen (19) categories have been determined as possible areas of impact, which must be addressed. Those categories include:

1. Air Quality
2. Coastal Barriers
3. Coastal Zone Management
4. Compatible Land Use
5. Construction Impacts
6. Section 4(f) Lands
7. Prime and Unique Farmland
8. Fish, Wildlife and Plants
9. Floodplains
10. Hazardous Materials
11. Historical, Architectural, Archeological, and Cultural Resources
12. Light Emissions and Visual Impacts
13. Natural Resources and Energy Supply
14. Airport Noise
15. Socioeconomic Environmental Justice, and Children's Health and Safety Risks
16. Solid Waste
17. Water Quality
18. Wetlands
19. Wild and Scenic Rivers

In addition to the aforementioned Federal guidance, this chapter also includes governing practices set forth by the State of Florida's Department of Environmental Protection (FDEP) and the Florida Fish and Wildlife Conservation Commission (FWC). The FDEP is the lead agency in state government for environmental management and stewardship and "protects air, water, and land. Florida's environmental priorities include restoring America's Everglades, improving air quality, restoring and protecting the water quality in springs, lakes, rivers and coastal waters, conserving environmentally-sensitive lands and providing citizens and visitors with recreational opportunities."

For the purposes of this study,, the above-mentioned environmental categories will be addressed only as they apply specifically to VPS and will otherwise be noted as not applicable to the Airport. In considering potential environmental impacts within this framework, this Environmental Overview identifies those categories that may warrant more detailed analysis in a formal EA for the preferred development alternatives.

Noise is the most apparent impact that an airport has on the environment, with the majority of complaints received from nearby residents; therefore, necessitating the majority of mitigation efforts.

The United States Air Force (USAF) published an Environmental Impact Statement (EIS) for the Military Family Housing Demolition, Construction, Renovation, and Leasing (DCR & L) Program for Elglin AFB, and Hurlburt Field in 2006. Items from that EIS pertinent to the VPS Master Plan are referenced in this Chapter.

7.2 AIR QUALITY

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of part per million (ppm) or micrograms per cubic meter (µg/m3).

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and Florida air quality standards to determine potential effects. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare, with a reasonable margin of safety. The NAAQS identify maximum allowable concentrations for the following criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter less than 10 microns in diameter (PM10), and lead (40 CFR 50). In the case of SO2, the State of Florida has established more stringent standards (F.A.C. 62-204-240).

Guidelines for regulating air quality have been established by the Federal Clean Air Act and all implementation and enforcement of these guidelines are the responsibility of the Environmental Protection Agency (EPA). Section 110 of the Act requires that states develop a State Implementation Plan (SIP) in an effort to comply with Federal air quality standards. National ambient air quality standards have been established under Section 109 of the Act to protect public health. The FAA must ensure that all Federal airport actions, such as financial awards and grants, conform to the State plan for controlling air pollution impacts.

FAA guidance states that an air quality analysis is required only if the forecast aircraft projected levels of GA activity are above 180,000 operations and 1.3 million passengers. As presented in the forecasts of aviation demand of this report, VPS is not expected to exceed these thresholds within the next 20-year period. Should an air quality analysis be deemed necessary, the requirements shall include, but not be limited to an estimate of air pollutant volumes, and resulting air quality impacts produced by the Airport operations. This analysis would be included in a detailed EA or EIS effort. Additionally, as initiated by the airport act of 1982, an air quality certification may be required prior to construction/redevelopment in order to ensure that Federal and State air quality standards are met.

Temporary impacts from construction-related activities and their associated vehicles are expected during development initiatives at VPS. These impacts are anticipated to be minimal and could be mitigated by use of best management practices. Temporary air quality impacts during theses periods are likely to include, but no limited to, wind-blown dust and equipment exhaust.

7.3 COASTAL BARRIERS

The Coastal Barriers Resource Act (COBRA) of 1982 prohibits the Federal government from financial involvement associated with building and development in undeveloped portions of designated coastal barrier, which consists of undeveloped coastal barriers along the Atlantic and Gulf coasts. These areas were mapped and designated as

Coastal Barrier Resources System units or "otherwise" protected areas. They are commonly referred to as COBRA zones. COBRA banned the sale of NFIP flood insurance for structures built or substantially improved on or after a specified date. COBRA zones and their identification dates are shown on Flood Insurance Rate Maps (FIRMs). Those maps identify lands included in the Coastal Barrier Resource System (CBRS) and are available for inspection in the offices of the U.S. Fish and Wildlife Service. VPS is not situated within any federally assigned units included in the CBRS.

7.4 COASTAL ZONE MANAGEMENT

The Coastal Zone Management Act (CZMA) requires that all Federal projects occurring in applicable coastal zone areas comply with management guidelines established in the Coastal Zone Management Program. Procedures for determining consistency with approved coastal zone management programs are contained in the National Oceanic and Atmospheric Administration (NOAA) Regulations (15 CFR Part 930).

The term “coastal zone” is defined as coastal waters and adjacent shorelands strongly influenced by each other and in proximity to the several coastal states, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. “Coastal Waters” refers to any water adjacent to the shoreline that contain a measurable amount of sea water, including but not limited to sounds, bays, lagoons, bayous, ponds, and estuaries. The limit of state waters is the outer boundary of the coastal zone, which is nine nautical miles from shore for the Gulf coast of Florida. The seaward boundaries of the State of Florida coastal zone are defined in accordance with Section 304(1) of the CZMA, the Submerged Lands Act (43 U.S.C. 3101 et. Seq.) and United States vs. Louisiana, 364 U.S. 502 (1960) as three nautical miles into the Atlantic Ocean and approximately nine nautical miles into the Gulf of Mexico. The landward boundaries of the State of Florida are defined by the State, in accordance with Section 306(d)(2)(A) of the CZMA, as the entire State of Florida, excluding only Federally owned property.

Federal agency activities potentially affecting the coastal zone are required to be consistent, to the maximum extent practicable, with the approved state Coastal Zone Management Programs. Federal agencies make determinations as to whether their actions are consistent with approved state plans. Consistency determinations are submitted to the state for review and concurrence. All relevant state agencies must review the Proposed Action and issue a consistency determination. The Florida Coastal Management Program is composed of 23 Florida Statutes administered by 11 state agencies and four of the five water management districts.

Approval of the Airport Layout Plan can, by definition in the NOAA Regulations, be a Federal permitting action subject to subpart D. Unless the recommended development has been specifically identified in Florida’s Coastal Zone Management Program or unless the Department of Environmental Protection has specifically advised the Airport and Industrial District and the FAA that an approved airport layout plan action would significantly affect a coastal zone, subpart D of the NOAA Regulations would not apply and no further action would be needed. Additionally, Chapter 380, Part II, Section 23 – *Federal Consistency* of the Florida Statutes, states that only those Federal activities that significantly affect Florida’s coastal zone will be evaluated for consistency with the Florida Coastal Management Program.

Further coordination is recommended to ensure that future plans of the Airport be consistent with other plans to protect and manage the coastal zone, and that areas

selected for future development are not situated within any Federally assigned units included in the Coastal Barrier Resource System.

Chapter 253, Florida Statutes, requires the Department to grant an easement, dedication, submerged land lease or other form of consent for use of state-owned or sovereignty lands.

7.5 COMPATIBLE LAND USE

A key goal of the master planning process is to ensure compatible land uses between the Airport and the surrounding community. The factors associated with the land use review presented in this chapter are generally based on the Airport's role within the military facility in which it resides. Furthermore, limited information on adjacent land uses and potential future land uses will be discussed. It is recommended that prospective city land use policies, as well as Eglin AFB initiatives, consider existing as well as future Airport activities over the course of the planning period, including compatibility issues such as development on and off Airport property, aircraft operations, or other activities.

7.5.1 Existing Land Uses

VPS is located in northwest Florida and within the property limits of the active Eglin AFB. Okaloosa County leases 131 acres of land from the U.S. Department of the Air Force for VPS to provide commercial air service to the northwest Florida community. The lease extends through the year 2031 and currently limits commercial service operations to a maximum of 80 operations per day.

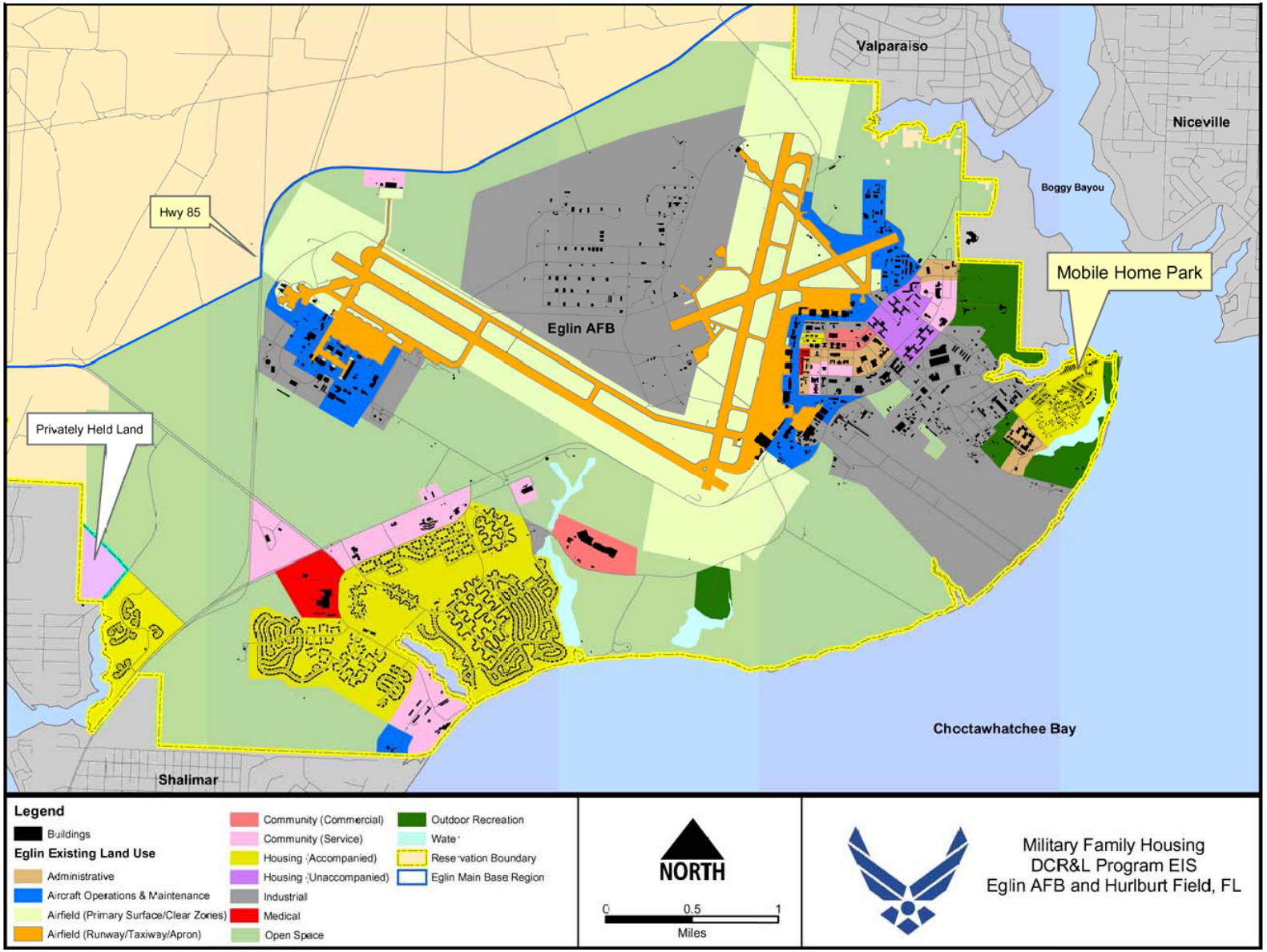
The properties near an airport are often affected by airport operations. Florida Statutes, Chapter 333 requires that local governing entities establish future land use and zoning regulations to ensure compatible land use around airports. These regulations consider height, noise compatibility and safety. The current Zoning map for the areas surrounding Eglin Air Force Base is illustrated in **Figure 7-1**.

According to the 2006 EIS published by the USAF, the Eglin Main Base, "provides over 2,350 family (housing) units in over 1,100 buildings." The EIS also states that, "The major land uses on Eglin include airfield and aircraft operations and maintenance (approximately 2,362 acres), industrial land use in nine separate areas (2,057 acres), open space (4,141 acres), and residential areas (over 1,000 acres)."

7.5.2 Future Land Uses

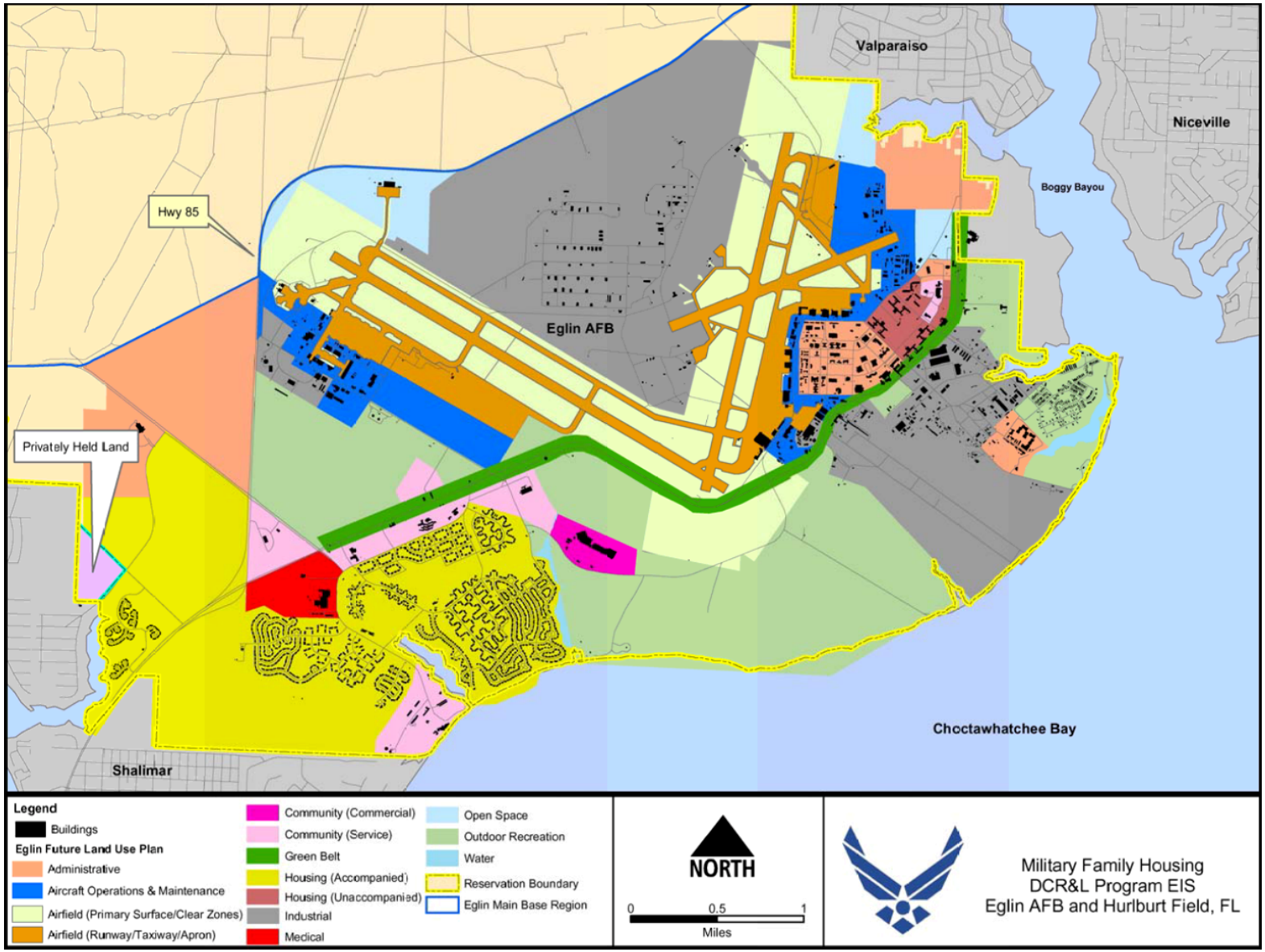
According to the USAF EIS, "The Okaloosa County 2020 Comprehensive Plan governs land use in the areas surrounding Eglin AFB. The Comprehensive plan requires that proposed project be compatible with adjacent land uses, structures, developments, and the surrounding neighborhood. It dictates that allowable gross density for low-density residential uses will be a maximum of 4 units per acre north of Eglin AFB and 5 units per acre south of Eglin AFB, which gross density for medium density residential uses will range from 4 to 16 units per acre." Land usage at the boundary of the military installation was found to be "generally compatible" and no major conflicts were identified. The Future Land Use Map is illustrated in **Figure 7-2**. As presented on the land use map, residential development is restricted around the airport except within the Valparaiso city limits.

Figure 7-1. Existing Land Use Near VPS



Source: USAF EIS, 2006

Figure 7-2. Future Land Use Near VPS



Source: USAF EIS, 2006

7.6 CONSTRUCTION IMPACTS

During periods of development, extensive construction activities occur. Construction activities may include, but are not limited to, earthmoving activities, delivery of equipment and materials, and removal of debris. The potential for impacts to off-Airport communities near the Airport is greatest during the initial phases of development. These impacts may consist of increased traffic on local roads, noise, mud, dust, and other effects associated with the activity of heavy construction vehicles. All potential impacts related to the proposed development projects are expected to be minor and temporary. Nevertheless, Airport management should exercise best practices at VPS to contain and minimize the impacts of construction during building phases of projects proposed in the development plan.

7.7 SECTION 4(F) LANDS

The United States Code (USC) Title 49 – Transportation, Subtitle I - Department of Transportation (DOT), Chapter 3 – General Duties and Powers, Subchapter I – Duties of the Secretary of Transportation, Section 303 – Policy on lands, wildlife and waterfowl refuges, and historic sites was formerly known as the DOT Act, Section 4(f). According to that law, it is the policy of the US Government that special effort be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.

It is the responsibility of the Secretary of Transportation to cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities.

The law provides that no approval be given by the Secretary to a program or project which requires the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance unless there is no prudent and feasible alternative to using that land, and the project includes all possible planning to minimize harm to such lands. Enforcement of this legislation is the primary responsibility of the Department of the Interior, though the U.S. Fish and Wildlife Service and Army Corps of Engineers may provide assistance.

A Section 4(f) property includes publicly owned public parks, recreation areas, and wildlife or waterfowl refuges, or any publicly or privately owned historic site listed or eligible for listing on the National Register of Historic Places (NRHP). There are no Section 4(f) historic places listed in the NRHP within the vicinity of the Airport. However, according to the US Department of Agriculture (USDA) the VPS leasehold along with the majority of the Eglin AFB is enveloped by the Choctawhatchee National Forest boundary.

Before approval of a project that uses Section 4(f) property is granted by the Secretary, it must be determined that any impacts are *de minimis* or a Section 4(f) Evaluation must take place. *De minimis* is a Latin expression that means, “about minimal things.” A *de minimis* impact is one that will not adversely affect the activities, features, or attributes of the property. A *de minimis* impact determination does not require analysis to determine if avoidace alternatives are feasible and prudent, but consideration of avoidance, minimization, mitigation or enhancement measures should occur.

The Florida Fish and Wildlife Conservation Commission (FWC) was established in 1999 and has the mission of "managing fish and wildlife resources for their long-term well-being and the benefit of people." FWC manages the Florida's Wildlife Management Area (WMA) System, which includes more than 5.8 million acres of land established as WMAs or Wildlife and Environmental Areas (WEAs). Eglin Air Force Base (AFB) is established as a WMA by the FWC. According to the FWC, "Eglin has many outstanding natural features and bountiful outdoor recreational opportunities." FWC reports that Eglin AFB is home to more than 93 rare or listed plant species and animal species, 63 of which are considered globally rare. Included in that list is the endangered Okaloosa darter, which is found in only six creek systems in the central portion of the AFB. Additionally, Eglin has the largest contiguous acreage of old-growth longleaf pine in the world and the fourth largest red-cockaded woodpecker population. That area is a site on the Great Florida Birding Trail.

The Florida Department of Environmental Protection (FDEP) maintains a Geographic Information Systems (GIS) database that compiles a myriad of various layers of data. The GIS database identifies items such as the air quality near air management sites (ARMS), conservation lands (Federal, State, Local and Private), State parks and recreation areas, NPDES stormwater facilities, Outstanding Florida Waters (OFWs) sites, and many more. According to that database, all of Eglin AFB, including the area leased for civilian airport operations, is located within a Federally protected conservation area.

None of the proposed development alternatives presented in this document require the purchase of or are expected to have more than a *de minimis* impact upon any Section 4(f) lands identified in this section.

7.8 PRIME AND UNIQUE FARMLAND

The FAA requires an EA for an airport project that would convert land protected under the Farmland Protection Policy Act (FPPA) to non-agricultural use, when the total score on the USDA's Farmland Conversion Impact Rating Form (Form AD-1006) exceeds 200 points. Prime farmland is defined as land best suited for producing food, feed, forage, fiber, and oilseed crops. Such land has the quality, growing season, and moisture supply necessary to produce sustained crop yields with minimal energy and economic input.

According to FAA Order 1050.1E – *Environmental Impacts: Policies and Procedures*, if farmland is to be converted to a nonagricultural use by a Federally funded project, consultation with the US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) should occur to determine if the FPPA classifies the land as "prime" or "unique." If it is either, the FPPA requires rating the farmland conversion impacts based on length of time farmed, amounts of farmland remaining in the area, level of local farm support services, and the level of urban land in the area.

No known prime or unique farmlands have been identified within the immediate vicinity of Okaloosa County's leasehold of VPS. Therefore, the proposed Airport development described in this document is not expected to affect any such lands.

7.9 FISH, WILDLIFE AND PLANTS (BIOTIC COMMUNITIES)

The Fish and Wildlife Coordination Act (FWCA) (48 Statute 401 as amended; 16 USC 661-667e.) as amended provides the basic authority for the Fish and Wildlife Service's involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources receive equal

consideration to other project features, and requires Federal agencies that construct, license or permit water resource development projects to first consult with the Service (and the National Marine Fisheries Service in some instances) and State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts.

The FWCA takes into consideration the possible impacts that airport development projects may have on surrounding habitat and wildlife. Section 2 of this act requires consultation with the U.S. Fish and Wildlife Service, the U.S. Department of the Interior, and the state agencies that regulate wildlife and water resources. In the case of water resources, this would particularly apply to such instances where proposed development by any public or private agency would result in modification of the flow and/or shape or watershed of any stream or body of water. Under this act the U.S. Fish and Wildlife Service along with the EPA have authority to provide comments and recommendations concerning vegetation and wildlife resources.

Based on the relatively small size and location of development initiatives proposed for VPS, no impacts to biotic communities are expected as a result of the planned growth of the Airport.

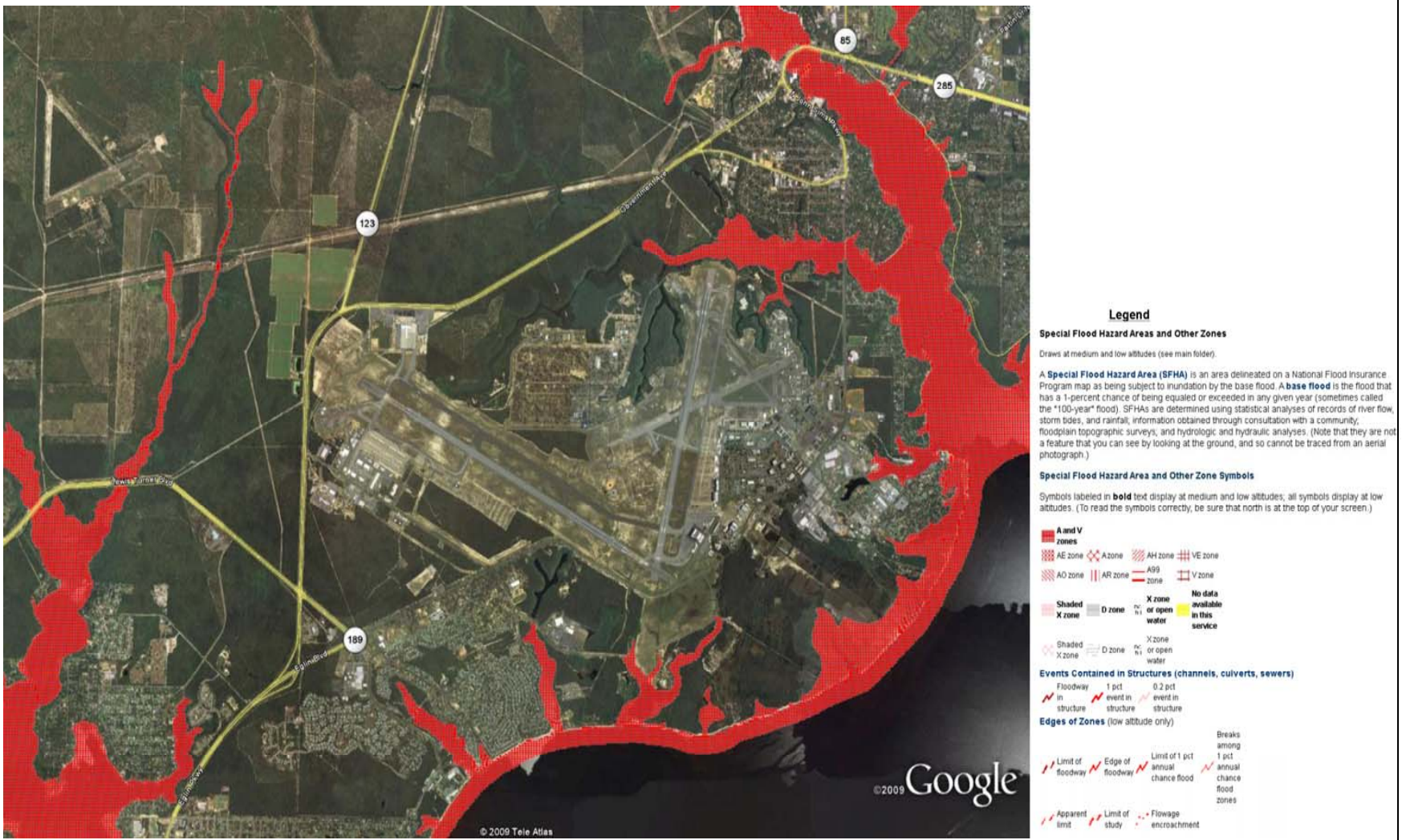
7.10 FLOODPLAINS

Floodplains are defined in The US Environmental Protection Agency (EPA) Executive Order (EO) 11988, *Floodplain Management, 1977*. They include lowland areas adjoining inland and coastal waters, especially those areas subject to a one percent or greater chance of flooding in any given year. Under the EO,

The Federal Emergency Management Agency (FEMA) has produced flood insurance rate maps (FIRMs) for communities participating in the National Flood Insurance Program. Detailed maps illustrate the 100-year and 500-year base flood elevations. Descriptions of zones delineated on these maps include, Zone VE – coastal flood with velocity hazard, Zone A and AE – areas of 100-year flood, Zone X500 – areas in the 500-year floodplain, and Zone X – areas outside of the 500-year floodplain.

FEMA maintains a computer database that contains the flood hazard map information from FEMA's Flood Map Modernization program. Through that program FEMA has developed the National Flood Hazard Layer (NFHL), which is mapped data from the Digital FIRM databases and Letters of Map Revisions (LOMRs). **Figure 7-3** depicts the DFIRM for VPS, which is evidence that no part of the civilian leasehold is located within a floodplain (depicted in red).

Figure 7-3. FEMA – FIRM for VPS



Sources: FEMA, 2009, and Google Earth, 2009.

7.11 HAZARDOUS MATERIALS IMPACTS

Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances, and wastes. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the Resource Conservation and Recovery Act (RCRA) (as amended by the Federal Facilities Compliance Act of 1992) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA or Superfund) and the Community Environmental Response Facilitation Act of 1992. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

FAA Order 1050.1E defines *hazardous material* as any substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. *Hazardous waste* is defined by that Order as a waste that is listed in or meets the characteristics described in 40 CFR part 261, including ignitability, corrosivity, reactivity, or toxicity. A *hazardous substance* is defined as any element, compound, mixture, solution, or substance defined as a hazardous substance under CERCLA and listed in 40 CFR part 302. If released into the environment, hazardous substances may pose substantial harm to human health or the environment.

The potential for handling hazardous waste must be evaluated when determining the impacts associated with Airport development. The Assistant Administrator for Security and Hazardous Materials (ASH) is responsible for considering the environmental impacts for all actions arising out of ASH initiatives that require NEPA compliance and other Federal and Departmental environmental laws, regulations, and orders.

The removal of the existing fuel farm is the only proposed development project contained in this document anticipated to potentially require the handling of hazardous materials other than normal fueling and operational procedures conducted on an airport. Therefore, an Environmental Due Diligence Audit (EDDA) should be conducted and coordination with Federal and local officials should be completed to identify any potential hazardous waste impacts and ensure proper mitigation is completed if required. Both NEPA and EDDA guidance require consideration of exposure to hazardous materials and minimizing further contaminant releases through NEPA environmental analysis. However, an Environmental Impact Statement (EIS) is not necessarily required.

7.12 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

The Archeological and Historic Preservation Act of l974 provides for the preservation of historic American sites, buildings, objects, and antiquities of national significance by providing for the survey, recovery, and preservation of historical and archeological data which might otherwise be destroyed or irreparably lost due to a Federal, Federally licensed, or Federally funded action.

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. They include archaeological resources (both prehistoric and historic), historic architectural resources,

and American Indian sacred sites and traditional cultural properties. Historic properties (as defined in 36 CFR 60.4) are significant archaeological, architectural, or traditional resources that are either eligible for listing or listed in the National Register.
The National Historic Preservation Act (NHPA) of 1966 and the Archeological and Historic Preservation Act of 1974 provide protection against development impacts that would cause change in the historical, architectural, archeological, or cultural qualities of the property.

Under the NHPA Eglin AFB is required to consider the effects of its undertakings on historic properties listed, or eligible for listing, in the National Register. NHPA obligations for a federal agency are independent from NEPA and must be complied with even when an environmental document is not required.

Other applicable guidance and directives associated with cultural resource management include EO 11593, *Protection and Enhancement of the Cultural Environment*; EO 13006, *Locating Federal Facilities on Historic Properties in Our Nations Central Cities*; EO 13287*, Preserve America*.

All development initiatives identified in Chapter 7 *Airport Development Plans* are within the boundaries of airport property. No historic, architectural, archeological, or cultural resources have been identified in these areas. Therefore, no impact to historical, architectural, archeological, or cultural resources will occur as a result of the planned development for the Airport.

7.13 LIGHT EMISSIONS AND VISUAL IMPACTS

There are no special purpose laws or standards for light emission impacts and visual impacts. Because of the relatively low levels of light intensity compared to background levels associated with most air navigation facilities (NAVAIDS) and other airport development actions, light emissions impacts are unlikely to have an adverse impact on human activity or the use or characteristics of protected properties. Whenever the potential for an annoyance exists, such as site location of lights or light systems, pertinent characteristics of the particular system and its use, and measures to lessen any annoyance, such as shielding or angular adjustments information should be included in the appropriate environmental document.

Visual, or aesthetic, impacts are inherently more difficult to define because of the subjectivity involved. Aesthetic impacts deal more broadly with the extent that the development contrasts with the existing environment and whether the jurisdictional agency considers this contrast objectionable. Public involvement and consultation with appropriate Federal, State, and local agencies and tribes may help determine the extent of these impacts. The visual sight of aircraft, aircraft contrails, or aircraft lights at night, particularly at a distance that is not normally intrusive, should not be assumed to constitute an adverse impact. The art and science of analyzing visual impacts is continuously improving and the responsible FAA official should consider, based on scoping or other public involvement, the degree to which available tools should be used to more objectively analyze subjective responses to proposed visual changes.

None of the proposed Airport development items described in this document are expected to have significant light or visual related impacts.

7.14 NATURAL RESOURCES AND ENERGY SUPPLY

Executive Order 13123, Greening the Government Through Efficient Energy Management (64 FR 30851, June 8, 1999), encourages each Federal agency to expand the use of renewable energy within its facilities and in its activities. E.O. 13123 also requires each Federal agency to reduce petroleum use, total energy use and associated air emissions, and water consumption in its facilities.

The FAA's policy is consistent with NEPA and the Council of Environmental Quality (CEQ) regulations, which is to encourage the development of facilities that exemplify the highest standards of design including principles of sustainability. As such, all elements of the transportation system are encouraged to be designed with a view to their aesthetic impact, conservation of resources such as energy, pollution prevention, harmonization with the community environment, and sensitivity to the concerns of the traveling public.

The proposed development discussed in this document is anticipated to improve upon the Airport's use of Natural Resources and Energy Supply, as they are planned to provide a seamless traveling experience from the entrance road through the passenger boarding bridges.

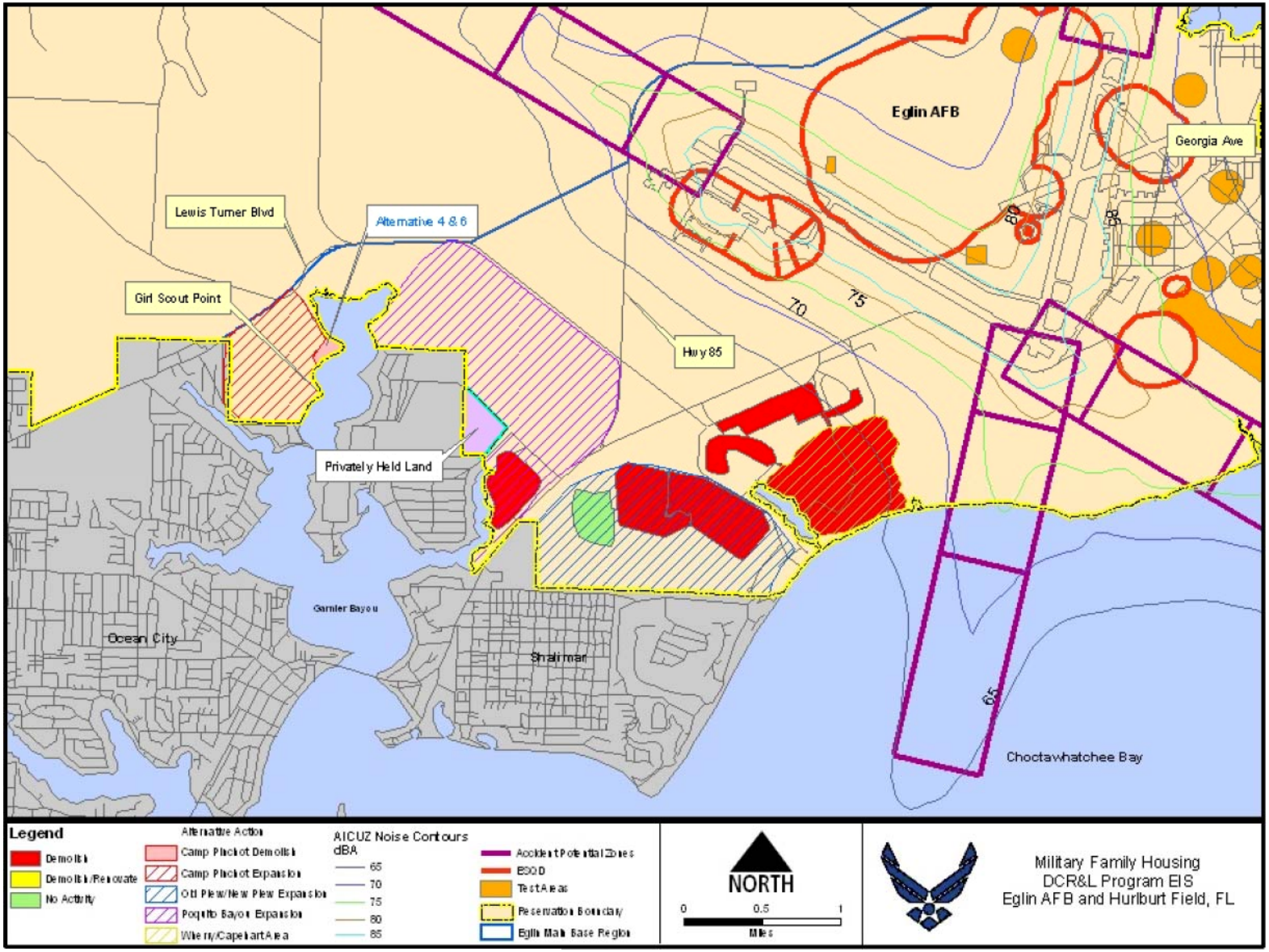
7.15 AIRPORT NOISE

Noise is the most apparent impact that an airport has on the environment, with the majority of complaints received from nearby residents; therefore, necessitating the majority of mitigation efforts. The FAA recommended the average day-night sound level (L_{dn}) in decibel values, as the national standard for measuring airport noise. The FAA has determined that a sound level of less than 65 L_{dn} is compatible with most residential land uses. Therefore, noise levels greater than this measurement should be contained within Airport property lines to the greatest extent possible. In areas around the Airport where noise levels exceed 65 L_{dn}, other methods of mitigation such as land acquisition, zoning requirements, and the purchase of easements may be used as possible remedies for incompatible land uses. Noise contours associated with the Airport were published in the USAF's EIS in 2006, which are displayed in **Figure 7-4**.

According to the EIS, "Georgia Avenue Housing experiences noise levels between 75 Ldn and 80 Ldn, while portions of the Capehart and Ben's Lake Housing Areas are exposed to levels above 65 Ldn. All other housing areas experience noise levels below 65 Ldn."

The future alternative developments proposed in this document are not expected to affect the noise currently experienced at the Airport.

Figure 7-4. Eglin AFB Noise Contours Reported in the USAF's EIS



Source: USAF Environmental Impact Study, 2006.

7.16 SOCIOECONOMIC ENVIRONMENTAL JUSTICE, AND CHILDREN'S HEALTH AND SAFETY RISKS

Analyses of socioeconomics include addressing the following: economic activity (employment and earnings), population, housing, and public schools. The principal social impacts that must be considered are the relocation of businesses and/or residences, alteration of surface transportation patterns, division or disruption of established communities, disruption of orderly planned development, and the creation of an appreciable change in employment. Subsequently, if any relocation of residential or commercial properties is required, compensation shall be made under the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, as amended by the Surface Transportation and Uniform Relocation Act of 1987 and its implementing regulations (49 CFR Part 24).

If any potentially impacted properties cannot be acquired through a land acquisition program prior to the start of each specific project, the guidelines set forth in the documents described previously must be followed to mitigate impacts on the affected residences. Additionally, any areas with concentrated populations of people belonging to a single race, national origin, or low income bracket must be identified and evaluated under the requirements of Environmental Justice to ensure that they are not receiving a disproportionate share of adverse environmental impacts (e.g., high levels of noise exposure) in relation to other areas in the vicinity of the Airport. The following sections describe legal requirements for evaluating impacts to Environmental Justice and Special Risks to Children.

7.16.1 Environmental Justice

Concern that that minority populations and/or low-income populations bear a disproportionate amount of adverse health and environmental effects led to the issuance of EO 12898 in 1994. 32 CFR 989, *The Environmental Impact Analysis Process,* addresses the need for consideration of environmental justice issues in the impact analysis process. The purpose of an Environmental Justice analysis is to identify disproportionately high and adverse human health and safety and environmental impacts on minorities and low-income communities and to identify appropriate alternatives. That EO also requires the application of equal consideration for American Indian populations. Procedures for compliance with relevant laws are outlined in Eglin's Integrated Cultural Resource Management Plan. However, none of the development initiatives outlined in the master plan should have any social impacts related to relocation, community disruption, surface transportation patterns or planned development. However, projects that require an Environmental Assessment would need to address such impacts.

7.16.2 Special Risks to Children

President Clinton signed Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* in 1997. That EO mandated that all Federal agencies assign a high priority to addressing health and safety risks to children, coordinating research priorities on children's health, and ensuring that their standards take into account special risks to children. The EO states that "*environmental health and safety risks" mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)*.

Children are more sensitive to some environmental effects than the adult population, such as airborne asbestos and lead paint exposures from demolition, safety with regard to equipment, trips/falls/traps within structures under demolition, and noise. Activities occurring near areas that tend to have a higher concentration of children than the typical residential area during any given time, such as schools, churches, and community childcare facilities may further intensify potential impacts to children. Such areas were identified in the USAF's 2006 EIS and are displayed in **Figure 7-5.**

None of the development alternatives proposed in this Master Plan should have adverse impacts upon the health or safety risks of children. However, development projects requiring an EA would require further analysis to verify that probability.

7.16.3 Induced Socio-Economic Impacts

Induced socio-economic impacts are those impacts on surrounding communities that are generally produced by large-scale development projects. The scope of such development may create shifts in population movement and growth patterns, public service and demand, and changes in commercial and economic activity.

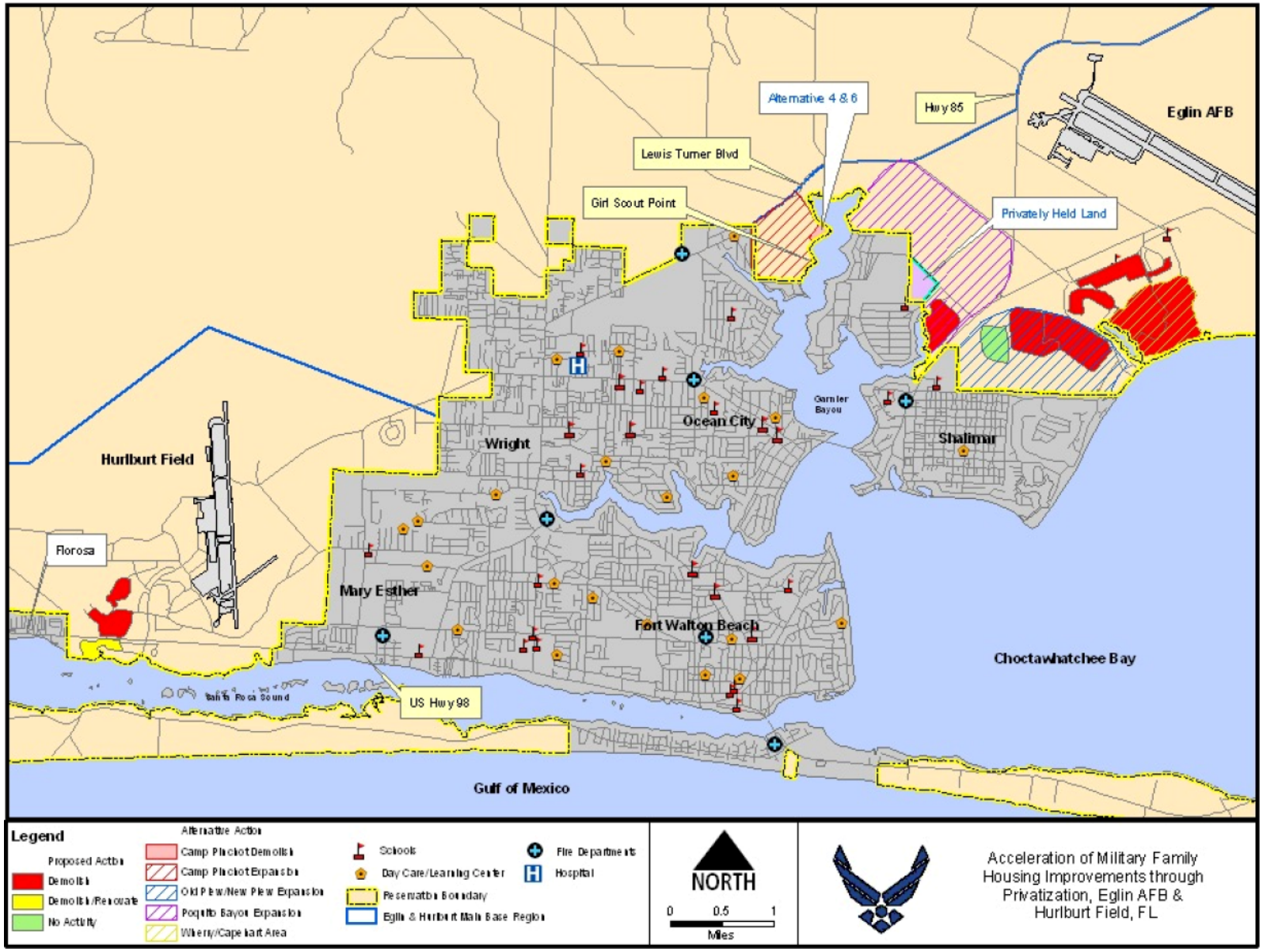
The presence of the military is the primary generator of economic activity in Okaloosa County where over 60,000 active duty military, civil service personnel, and military dependents reside. The military's presence in Okaloosa County has attracted a sizable concentration of technology-based and defense-contracting firms, which are mainly supported by the award of $257 million in local employment contracts, $248 million of which stem from Eglin AFB. The Economic Development Council (EDC) estimated that over 20,000 jobs in other industrial sectors are directly and indirectly related to military spending. In addition, there are an estimated 37,000 retired military personnel residing in the region, which contribute to the local economy in the form of highly skilled labor as well as consumers. Detailed statistics on the regions economic activity, population, housing, and public school system are provided in the USAF's EIS of 2006. No induced socio-economic impacts are expected as a result of the planned growth of the Airport.

7.17 SOLID WASTE IMPACT

The Resource Conservation and Recovery Act (RCRA) accompanied by FAA Order 5200.5A regulate solid waste impact. The RCRA grants authority to the EPA to control hazardous waste from the "cradle-to-grave," including its generation, transportation, treatment, storage, and disposal. The RCRA also provides for safe disposal of discarded materials, regulates hazardous waste, promotes recycling, and establishes criteria for sanitary landfills. An amendment was made to the RCRA in 1986 that enabled the EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

FAA Order 5200.5A provides guidance concerning establishment, elimination, or monitoring of landfills, open dumps, or waste disposal facilities on or near airports. Under this order, waste disposal sites within 10,000 feet of any runway end used by turbine-powered aircraft, are considered incompatible with airport operations. However, the EPA has primary responsibility for regulating landfills and overseeing programs associated with solid wastes.

Figure 7-5. Communities with a High Percentage of Children Under 18



Source: USAF Environmental Impact Study, 2006.

The proposed fuel farm relocation would involve replacing the fuel storage tanks at VPS, which are all above ground. Given the expected need for additional fuel storage capacity at DTS or CEW, the existing VPS tanks could be relocated to either airport, thereby recycling those facilities. No other solid waste impacts are expected to be a result of the proposed development.

7.18 WATER QUALITY

The Clean Water Act (CWA) (33 U.S.C. 1151 et seq., 1251 et seq.), formally known as the Federal Water Pollution Control Act, is the basic federal legislation governing wastewater discharges. The implementing federal regulations include the National Pollutant Discharge Elimination System (NPDES) permitting process (40 CFR 122), general pretreatment programs (40 CFR 403), and categorical effluent limitations, including limitations for pretreatment of direct discharges (40 CFR 405, *et seq*.).

To the extent possible, FAA Order 5050.4B requires that consideration be given to the following: storm and sanitary sewer design, requirements for additional water supply or water treatment capacity, erosion controls to prevent siltation, provisions for containing oil spills and wastewater from aircraft washings, designs to preserve existing drainage or minimize dredge and fill, and locations with regard to surface and subsurface aquifers or sensitive ecological areas such as wetlands.

The Florida Air and Water Pollution Control Act (Florida Statutes, Title 28 Section 403) governs industrial and domestic wastewater discharges in the State. The Northwest Florida Water Management District has been delegated as the enforcement authority by the Florida Department of Environmental Protection (FDEP). The implementing state regulations are contained in F.A.C. 62. These regulations establish water quality standards, regulate domestic wastewater facility management and industrial waste treatment, establish domestic wastewater treatment plant monitoring requirements, and regulate stormwater discharge. There are no permitted discharges of wastewater effluent to Choctawhatchee Bay due to the use of land made available by Eglin for spray irrigation.

The 96th Civil Engineer Group (96 CEG/CEOIT) manages, operates, and maintains Eglin's wastewater treatment plants, and manages wastewater treatment facility permits and related compliance requirements, in accordance with applicable Air Force regulations.

No significant threats to water quality are anticipated resulting from the proposed development of VPS.

7.19 WETLANDS

Under EO 11990, *Protection of Wetlands* (1977), federal agencies are prohibited from undertaking or providing assistance for activities, including new construction, located in wetlands unless there are no practicable alternatives and all practicable measures to minimize harm to wetlands have been implemented.

Two important Federal laws which regulate wetlands are the River and Harbors Act (RHA) of 1899 (the earliest environmental law in the US) and the Clean Water Act (CWA). The focus of the RHA is protection of water navigation, while the focus of the CWA is prevention of water pollution. Additionally, the North American Wetlands

Conservation Act of 1989 assigns preservation responsibilities to all Federal agencies whose jurisdiction may involve the management or disposal of lands and waters under their control.

The U.S. Army Corps of Engineers (CoE) and EPA share responsibility for wetland protection and permitting under the CWA. Both define a wetland as, "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Such areas typically include swamps, marshes, and bogs.

Other agencies with non-regulatory responsibilities to create or protect wetlands include the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the Soil Conservation Service.

Based on the US FWS's National Wetlands Inventory, there are estuarine and marine wetland (PF01/3C) areas near Okaloosa County's leasehold of VPS. However, no wetlands have been inventoried within the boundaries of the leasehold as is depicted in **Figure 7-6**.

7.20 WILD AND SCENIC RIVERS

The National Wild and Scenic Rivers Act (NWSRA) of 1968 describe those river segments designated or eligible to be included in the Wild and Scenic Rivers System. The Department of the Interior (DOI) National Park Service (NPS) River and Trail Conservation Assistance Program (RTCA) within NPS's National Center for Recreation and Conservation (NCRC) maintains a Nationwide Rivers Inventory (NRI) of river segments that appear to qualify for inclusion in the National Wild and Scenic River System. The Blackwater River, Yellow River, and Shoal and Caney Creek are the rivers in Okaloosa County listed in the NRI. Federal agencies are required to consult with the NPS when proposals may affect a river segment included in the NRI. None of the proposed development alternatives would have an adverse impact on the three rivers previously listed as their closest proximity to VPS is more than 14 miles away.

The NWSRA preserves certain rivers with outstanding natural, cultural or recreational values in a free-flowing condition for the enjoyment of present and future generations. Under provisions of this act, Federal agencies cannot assist, by loan, grant, license, or otherwise, in construction of any water resources project that would have direct and adverse impacts on river values. As of 2008, the National Wild and Scenic Rivers System protect more than 11,000 miles of 166 rivers in 38 states, which is a little more than one-quarter of one percent of the Nation's rivers. Loxahatchee River and Wekiva River are the only rivers in the State of Florida listed in the System. Neither of the two rivers is located in Okaloosa County. Therefore, the proposed airport development concepts would not adversely affect the rivers protected by the NWSRA.

Figure 7-6. US Fish & Wildlife Service's National Wetlands Inventory of VPS

Source: US Fish and Wildlife Service, 2009, and Google Earth, 2009.

7.21 CUMULATIVE IMPACTS

The EPA requires the evaluation of the consequences, including secondary and cumulative impacts, of all environmental actions. Secondary impacts are defined as those that are caused by an action and are later in time or farther removed in distance but are reasonably foreseeable. Cumulative impacts are broadly defined as those that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions. While any activity may potentially create an incremental, cumulative impact on the environment, the potential for significant cumulative impacts is of concern. The significance of an impact is based on the context and intensity of the impact when gauged against the impacts of past, present, or reasonably foreseeable actions. Cumulative impacts associated with land use and planning are not expected as a result of the proposed development alternatives presented in this document.

7.22 SUMMARY

This chapter serves as a cursory review of the potential for environmental impacts that may be associated with the proposed development at VPS. Further environmental studies, such as an EA or EIS, will likely be necessary for some of the proposed development within this master plan, as required by the NEPA. Project-specific impacts and necessary mitigation measures will be determined and identified in those environmental documents.

8

DEVELOPMENT PHASING, COST ESTIMATES AND CAPITAL IMPROVEMENT PROGRAM

Northwest Florida Regional Airport

8.1 INTRODUCTION

The preceding chapters have identified the projects necessary for the Northwest Florida Regional Airport (VPS or Airport) to accommodate the forecast levels of demand. As discussed in Chapter 7 *Airport Development Plan*, specific improvements to both airside and landside elements of the Airport are recommended for implementation over the planning period. The projects included in the development plan form the basis of the Airport's Capital Improvement Plan (CIP), which serves as the foundation for the distribution of grant funds under the FAA's Airport Improvement Program (AIP).

The CIP includes projects that represent the facility's planned growth during next 20 years. Additionally, the proposed facilities reflect strategic development initiatives intended to maximize the safety and utilization of the Airport while minimizing adverse impacts to its users and surrounding community. As part of the development process, project phasing and cost estimates are developed and included in the CIP in order to manage and plan for the implementation requirements associated with these development projects.

8.2 DEVELOPMENT PHASING

This section applies a general schedule to the proposed Airport development projects. The schedule represents a prioritized Airport development plan to meet forecast increases in aviation demand and/or economic development initiatives. Projects that appear in the first phase are of greatest importance and have the least tolerance for delay. Additionally, some projects included in an early phase may be a prerequisite for other planned improvements in a later phase. The development phasing for VPS has been divided into two phases as follows:

- Phase I: (0-5 years), 2009-2013
- Phase II: (6-10 years), 2014-2018

The phasing of individual projects should undergo periodic review to determine the need for changes based upon variation in forecast demand, available funding, economic conditions, and/or other factors that influence airport development. It should be noted that other projects not foreseen in this report may be identified in the future and would therefore likely necessitate changes in the phasing of projects and the overall CIP. Furthermore, the projects and overall development identified in the CIP, though tied to a timetable, will only occur once the demand and/or need is demonstrated for each project. **Table 8-1** displays the phasing for the projects included in the development plan.

Table 8-1. Development Phasing

Proposed Development Program	Phase I 2009-2013	Phase II 2014-2018
Terminal Additions Phase 1 – Entrance Road Realignment	✈	
Install Backup Emergency Generator for Terminal	✈	
Terminal Additions Phase 2 – Concourse Expansion	✈	
Terminal Additions Phase 3 – Remaining Concourse Expansion	✈	
Parking Lot Expansion	✈	
West Apron Improvements	✈	
Grade Separation Entrance/Exit at SR 85	✈	
Maintenance of Existing Facilities		✈

Source: PBS&J 2009.

8.3 DEVELOPMENT CONSIDERATIONS

In order to determine the approximate funding requirements for the planning period, it is necessary to identify the potential development costs associated with the selected airport development plan.

The cost estimates presented in the following pages are based upon adjusted 2009 dollars and are calculated for order-of-magnitude purposes only. Actual construction costs will vary based upon inflation, variations in labor and changes in the type or cost materials used, as well as other unforeseeable economic factors. Furthermore, federal grant assistance and eligibility may also vary from year to year. Therefore, a review of the development costs and overall CIP should be undertaken as conditions warrant.

Based on the construction of all projects outlined in Chapter 7 and depicted on the Airport Layout Plan (ALP), the construction costs in dollars (adjusted 2009) are summarized in **Table 8-2**. This table is based upon current federal eligibility criteria only, and does not represent a commitment for funding by the respective funding sources. The local column depicts the Airport share of the costs, which may be shared with other entities (i.e., current and future tenants, third party developers, etc.) depending on the development and/or funding approach applied to each project

Detailed cost estimates for development, including planning, construction, engineering, and total overall development costs, are depicted in tables within this chapter.

Table 8-2. Summary of Cost Estimates – Full Build-Out (2009 Dollars)

Development Period	Total	Federal (FAA/MAP)	Local (OCAS)	State (FDOT)
Phase I (2009– 2013)	$ 47,500,000	$ 37,604,113	$ 5,739,816	$ 4,156,071
Phase II (2014 – 2018)	$ 3,000,000	$ 2,700,000	$150,000	$ 150,000
Total Estimated Development Costs	***$ 50,500,000***	***$ 40,304,113***	***$ 5,889,816***	***$ 4,306,071***

Note: The funding amounts and project eligibility presented are based on current FAA guidelines but do not constitute approval, acceptance or a commitment of funding by the FAA and should only be used for planning and budgeting purposes.
Source: PBS&J, 2009.

8.4 CAPITAL IMPROVEMENT PROGRAM

The objective of this section is to outline the CIP for VPS for the next 20 years and provide a brief description of the expected projects included therein. Special attention has been placed on the first five years of the CIP. These projects are slated for immediate implementation, and have been identified as critical to the Airport in terms of providing adequate facilities to its users. Projects are identified and denoted in each phase of the Airport's CIP as shown in **Tables 8-3** and **8-4**.

According to FAA Order 5100.38C, *Airport Improvement Program Handbook*, "statutory provisions require that AIP funds be apportioned by formula each year to specific airports or types of airports. Such funds are available to airports in the year they are first apportioned and they remain available for additional fiscal years." VPS is classified by the National Plan of Integrated Airport Systems (NPIAS) Reports as a Non-Hub, Commercial Service – Primary Airport, commonly referred to as a "Nonhub Primary" airport. VPS is categorized as such because it has "more than 10,000 passenger boardings each year but less than 0.05% of the United States passenger enplanements.

According to Order 5100.38C, the funds apportioned to each primary airport are based upon the number of passenger enplanements served by each. VPS is currently listed on the 2009 – 2013 NPIAS Report as enplaning 424,042 passengers each year. The report also states that VPS is home base to 14 aircraft, and that the programmed development costs for the current five-year period (2009 – 2013) is $15,120,384. The allotment of funds is calculated based on the following:

- $7.80 for each of the first 50,000 passenger boardings
- $5.20 for each of the next 50,000 passenger boardings
- $2.60 for each of the next 400,000 passenger boardings
- $0.65 for each of the next 500,000 passenger boardings
- $0.50 for each passenger boarding in excess of 1 million

Assuming that VPS maintained an annual enplanement level of 424,042 passengers, and the amount apportioned per passenger remains the same, the apportionment that VPS would receive from Federal grants would be $1,492,509. Such an amount is insufficient to cover the projected development costs each year. As such, the use of Federal funding in the form of "Discretionary Funds" is expected to occur within the planning period. The sponsor of projects funded by discretionary money must be able to commence work within six months or during the same fiscal year as the grant agreement, whichever is later.

Planning Level Order of Magnitude (PLOOM) cost estimates have been calculated for each project proposed in the previous chapters. The PLOOM costs for the current five-year period indicate that the estimated program cost on the current NPIAS report ($15.12 million) are low, and should be closer to $41 million. See **Tables 8-3, 8-4 and 8-5** for the specific cost sharing estimates between the FAA, FDOT, and Okaloosa County (local).

Table 8-3. Capital Improvement Program Phase I (2009-2013)

Year	Project Description and Title	Estimated Total Cost	Funding Sources	
	Terminal Additions Phase 1 - Entrance Road Realignment		Federal (FAA/MAP)	$2,090,000
2009	Realign the entrance road (34.5' X 600') and demolish the existing car wash facility along with improvements to existing parking areas, drainage, and landscaping. Additional improvements will be made including a covered taxi stand and TSA security checkpoint renovations within the existing terminal.	**$ 2,200,000**	State	$ 55,000
			Local	$ 55,000
			Federal (FAA)	$2,702,000
	Install Backup Emergency Generator for Terminal			
2009	The Backup Emergency Generator has already been designed, and is currently in the bidding process. The system was designed to supply normal power to the entire Terminal in the event of a power outage or emergency.	**$3,500,000**	State	$399,000
			Local	$399,000
			Subtotal for 2009	**$5,700,000**
			Federal (FAA/MAP)	$ 3,302,102
	Terminal Additions Phase 2 - Concourse Expansion			
2010	Construct partial expansion of the concourse (approx. 5,200 SF) along with apron modifications to accommodate expansion.	**$ 4,400,000**	State	$ 330,000
			Local	$ 767,898
			Federal (FAA)	$ 0
	Grade Separation Entrance/Exit at SR 85			
2010	Construction of the new interface between the State Road 85 “Fly-Over” and the public vehicle entrance and exit points of the Airport.	**$3,000,000**	State	$ 2,550,000
			Local	$ 450,000
			Subtotal for 2010	**$ 7,400,000**
	Terminal Additions Phase 3 - Remaining Concourse Expansion		Federal (FAA/MAP)	$ 19,131,643
2011	Construct ticketing addition (approx. 8,000 SF), baggage claim addition (approx. 6,500 SF), and remaining concourse expansion (approx. 11,200 SF). Additional improvements will be made to the existing site in order to accommodate all areas of building expansion.	**$22,600,000**	State	$1,695,000
			Local	$1,773,357

Source: PBS&J, 2009.

Table 8-4. Capital Improvement Program Phase I (2009-2013) (Continued)

Year	Project Description and Title	Estimated Total Cost	Funding Sources	
			Federal (FAA)	$ 4,050,000
2011	**Parking Lot Expansion** Construction of new parking lots (approx. 32,000 SY)	**$ 4,500,000**	State	$ 225,000
			Local	$ 225,000
			Subtotal for 2011	**$ 27,100,000**
			Federal (FAA)	$ 6,328,368
2013	**West Apron Improvements** Removal of west apron asphalt pavement and replacing with concrete pavement. Improvements also include a 50' concrete expansion of the apron to the west in order to allow aircraft movements away from the terminal gates.	**$7,300,000**	State	$ 485,816
			Local	$ 485,816
			Subtotal for 2013	**$ 7,300,000**
			Federal (FAA/MAP)	**$ 37,604,113**
	TOTAL FROM THE START OF 2009 TO THE END OF 2013		**State**	**$ 5,739,816**
			Local	**$ 4,156,071**
			TOTAL	**$47,500,000**

Source: PBS&J, 2009.

Table 8-5. Capital Improvement Program Phase II (2014-2018)

Year	Project Description and Title	Estimated Total Cost	Funding Sources	
	Maintenance of Existing Facilities		Federal (FAA)	$ 2,700,000
2014	Milling and resurfacing of all existing parking lots along with striping, sodding, and landscaping.	**$ 3,000,000**	State	$ 150,000
			Local	$ 150,000
			Subtotal for 2014	**$ 3,000,000**
			Federal (FAA)	$ 2,700,000
	TOTAL FROM THE START OF 2014 TO THE END OF 2018		**State**	$ 150,000
			Local	$ 150,000
			TOTAL	**$ 3,000,000**

Source: PBS&J, 2009.

AIRPORT LAYOUT PLAN

Northwest Florida Regional Airport

9

9.1 GENERAL

This chapter is intended to serve as an overview of the Airport Layout Plan (ALP) set required as part of the master planning process by the FAA. This drawing set provides input required to determine the eligibility of proposed airport improvement projects. Generally, the FAA will not provide financial assistance for projects that are not depicted on the ALP. The drawings comprising the ALP set illustrate the current (2009) facilities at Northwest Florida Regional Airport (VPS) and the required facilities to accommodate forecast levels of aviation demand and meet the development goals of the Okaloosa County Airports System (OCAS).

Being that the Airport is a "joint-use" (military and civilian use) facility
a full ALP set is not required as the planning elements of this Master Plan are limited to the areas enveloped by the civilian leasehold. Therefore, the ALP set for VPS includes the following individual drawing sheets:

1. Cover Sheet
2. Terminal Area Plan
3. Airport Property Map

The ALP set has been prepared in conformity with the applicable criteria described in FAA AC 150-5070-6B, *Airport Master Plans*, FAA AC 150/5300-13, *Airport Design,* and is adherent to the applicable portions of the FAA Southern Region's ALP Checklist. Following is a description of the elements included on the Terminal Area Plan and Airport Property Map.

9.2 TERMINAL AREA PLAN

The Terminal Area Plan (TAP) presents the County's leasehold at a scale of 1" = 150' and illustrates existing and proposed facilities. This area is comprised of the airport entrance roads, automobile parking, terminal building, gates, aircraft parking apron, remain-over-night (RON) apron, cargo/maintenance building, fuel farm, rental car processing facilities, and future aviation and non-aviation related development areas. The TAP is shown in **Sheet 2** following the Cover Sheet (**Sheet 1**).

The TAP depicts all of the VPS lease area located in the northwest quadrant of Eglin Air Force Base. The TAP depicts terminal expansion projects designed to more efficiently accommodate domestic traffic growth at the Airport, an aircraft parking apron expansion, a consolidated rental car area, taxi stand facilities, auto parking lot expansions, and terminal access road realignment. Additionally, the TAP identifies a 6 acre parcel of land suitable for commercial development as well as a 15 acre parcel of land best suited for future aviation development.

9.3 AIRPORT PROPERTY MAP

The Airport Property Map shows the lease boundary which defines the civilian limits of the Airport. Property/lease lines are depicted on this plan overlayed on the Airport's aerial imagery. The airport lease boundary is listed as enveloping 131.12 acres, and is depicted on **Sheet 3**.

AIRPORT TERMINAL PLAN UPDATE

Northwest Florida Regional Airport

Eglin AFB, Florida

OPERATED BY:

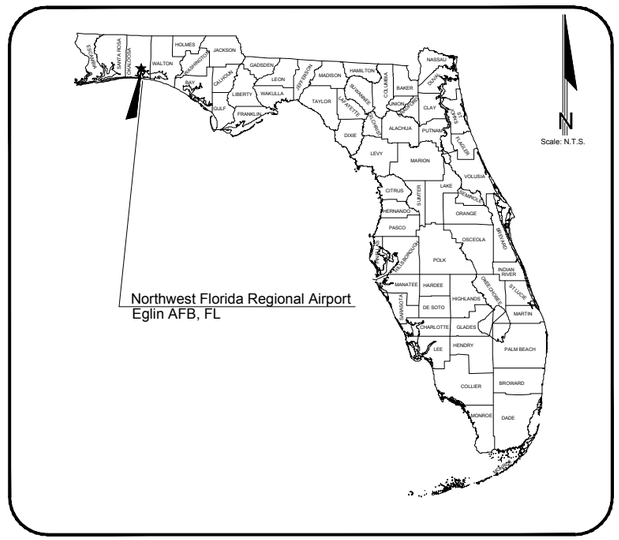
OKALOOSA COUNTY AIRPORTS SYSTEM

VICINITY MAP

PREPARED BY:

PBS&J

MARCH 2010



LOCATION MAP

BOARD OF COUNTY COMMISSIONERS

WAYNE HARRIS
JOHN JANNAZO
BILL ROBERTS
DON AMUNDS
JAMES CAMPBELL

INDEX OF DRAWINGS

COUNTY ADMINISTRATOR

JAMES CURRY

AIRPORTS DIRECTOR

GREG DONOVAN, A.A.E.

FAA AIP NUMBER 3-12-0081-019-2007

FDOT FIN PROJ 42301119401

AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

FUTURE S.R. 85
REALIGNMENT (BY FDOT)

S.R. 85

Lease Line

LONG TERM PUBLIC PARKING

SHORT TERM PUBLIC PARKING

EXISTING EMPLOYEE PARKING

RETENTION POND

FUTURE PARKING

EXISTING RENTAL CAR PARKING/FUTURE CREDIT CARD LOT

FUTURE PARKING

FUEL FACILITIES TO BE REMOVED

FUTURE AVIATION DEVELOPMENT (15 ACRES)

RETENTION POND

Lease Line

FUTURE APRON WIDENING (50-FT)

Lease Line

Lease Line

TAXIWAY D1

TAXIWAY D2

RENTAL CAR READY/RETURN PARKING

CARGO/MAINT. FACILITY

Lease Line

RETENTION POND

CARGO/REMAIN OVERNIGHT (RON) AIRCRAFT PARKING APRON

FUTURE AVIATION DEVELOPMENT AREA

RENTAL CAR SERVICE AREA

CONRAC

RETENTION POND

RENTAL CAR OVERFLOW PARKING

FUTURE COMMERCIAL DEVELOPMENT (6 ACRES)

FUTURE TIE-IN TO S.R. 85

LEASE LINE

FUTURE COMMERCIAL DEVELOPMENT

FUEL FARM

MAGNETIC NORTH - DECLINATION 2° 39' W

TRUE NORTH

0 150' 300'

APRIL 2009
ANNUAL RATE OF CHANGE
0° 5' W

SPONSOR'S APPROVAL	
AUTHORIZED REPRESENTATIVE	DATE
PRINTED NAME AND TITLE	

AIRPORT BUILDING TABLE

BUILDING No.	BUILDING
1	EXISTING FUEL FARM - TO BE REMOVED
2	TAXI STAND
3	TERMINAL ADDITIONS
4	EXISTING TERMINAL
5	BALDWIN BUILDING
6	RENTAL CAR SERVICE AREA

LEGEND

ITEM	EXISTING (E)	FUTURE (F)
BUILDINGS		
PAVEMENT		
LEASE LINE		
SECURITY FENCE		
APRON EXPANSION		
AUTO PAVEMENT REHABILITATION		

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

AIRPORT BASIC DATA TABLE

AIRPORT DATA

	EXISTING	ULTIMATE
AIRPORT ELEVATION	85' M.S.L.	SAME
AIRPORT REFERENCE POINT (ARP)	LONG. 86°31'00" W LAT. 30°28'00" N	SAME
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH	90.9° F	SAME
AIRPORT AND TERMINAL NAVIGATIONAL AIDS	ILS, TACAN, ASR	SAME
VISIBILITY MINIMUMS	1/2 MILE	SAME
AIRPORT REFERENCE CODE (TERMINAL)	C-III	D-V
CIVIL LEASEHOLD ACREAGE	131.12	SAME

REVISIONS	
DATE	DESCRIPTION

CLIENT

NORTHWEST FLORIDA FLY VPS REGIONAL AIRPORT
A SERVICE OF OKALOOSA COUNTY

OKALOOSA COUNTY

PROJECT

NORTHWEST FLORIDA
REGIONAL AIRPORT
TERMINAL PLAN UPDATE

SHEET TITLE

TERMINAL LAYOUT PLAN
FUTURE FACILITIES

PBS&J
482 South Keller Road
Orlando, Florida 32810-6101
TEL. (407) 647-7275
FAX. (407) 740-8710
www.pbsj.com

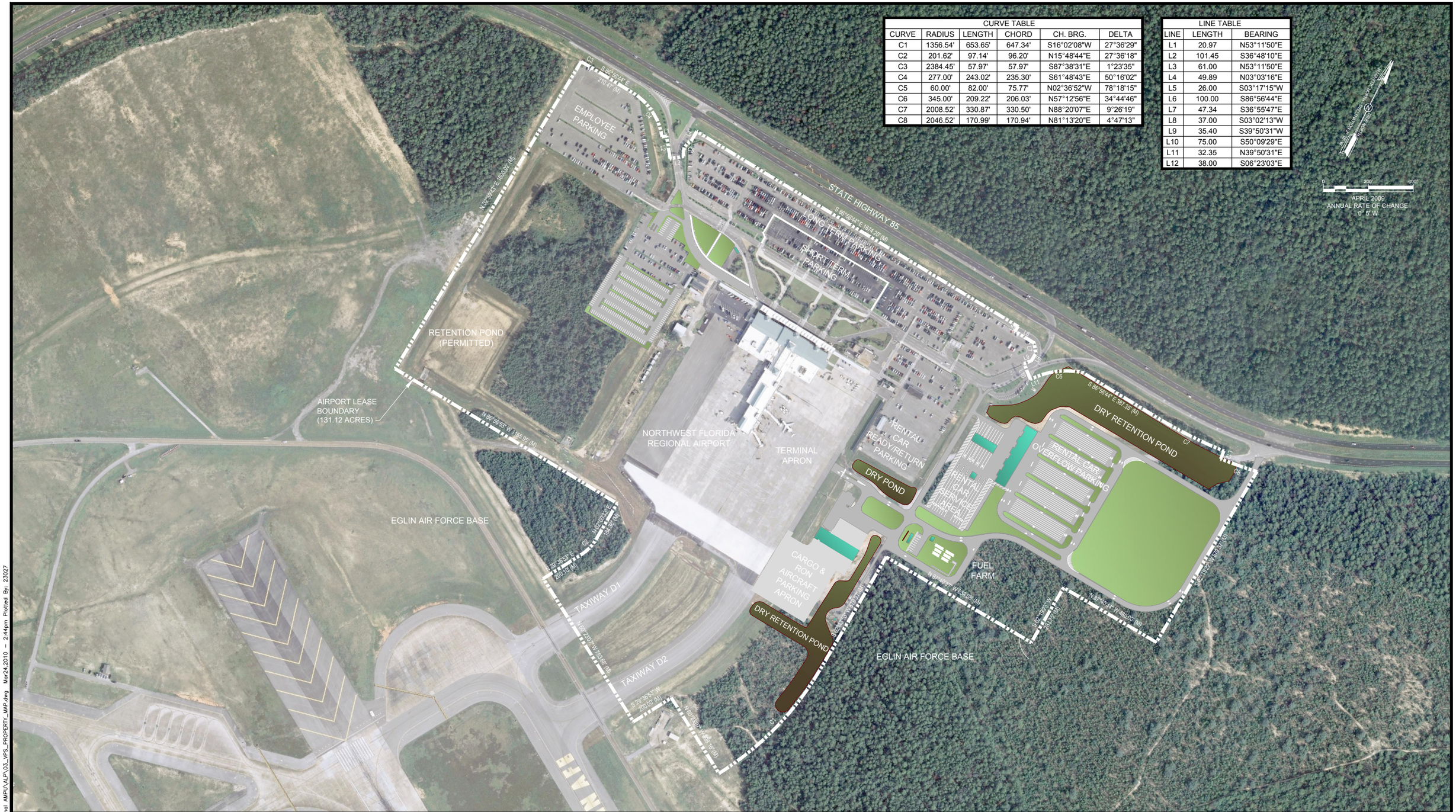
JOB NO.: 007127527
DRAWN: OV
DESIGN: OV
CHECKED: JH / TER
DATE: MARCH 2010

SHEET 2 OF 3

J:\AVServ\071275.27 Okaloosa Regional AMPU\ALP\02_VPS_Terminal Layout Plan.dwg Mar24,2010 - 4:20pm Plotted By: 23027

CURVE TABLE					
CURVE	RADIUS	LENGTH	CHORD	CH. BRG.	DELTA
C1	1356.54'	653.65'	647.34'	S16°02'08"W	27°36'29"
C2	201.62'	97.14'	96.20'	N15°48'44"E	27°36'18"
C3	2384.45'	57.97'	57.97'	S87°38'31"E	1°23'35"
C4	277.00'	243.02'	235.30'	S61°48'43"E	50°16'02"
C5	60.00'	82.00'	75.77'	N02°36'52"W	78°18'15"
C6	345.00'	209.22'	206.03'	N57°12'56"E	34°44'46"
C7	2008.52'	330.87'	330.50'	N88°20'07"E	9°26'19"
C8	2046.52'	170.99'	170.94'	N81°13'20"E	4°47'13"

LINE TABLE		
LINE	LENGTH	BEARING
L1	20.97	N53°11'50"E
L2	101.45	S36°48'10"E
L3	61.00	N53°11'50"E
L4	49.89	N03°03'16"E
L5	26.00	S03°17'15"W
L6	100.00	S86°56'44"E
L7	47.34	S36°55'47"E
L8	37.00	S03°02'13"W
L9	35.40	S39°50'31"W
L10	75.00	S50°09'29"E
L11	32.35	N39°50'31"E
L12	38.00	S06°23'03"E



J:\AVServ\071275.27 Okaloosa Regional AMPU\ALP\03_VPS_PROPERTY_MAP.dwg Mar24,2010 - 2:44pm Plotted By: 23027

REVISIONS	
DATE	DESCRIPTION

CLIENT

NORTHWEST FLORIDA FLY VPS REGIONAL AIRPORT — A SERVICE OF OKALOOSA COUNTY

OKALOOSA COUNTY

PROJECT

NORTHWEST FLORIDA REGIONAL AIRPORT TERMINAL PLAN UPDATE

SHEET TITLE

AIRPORT PROPERTY MAP

PBS&J
482 South Keller Road
Orlando, Florida 32810-6101
TEL. (407) 647-7275
FAX. (407) 740-8710
www.pbsj.com

JOB NO.:	007127527
DRAWN:	OV
DESIGN:	OV
CHECKED:	JH / TER
DATE:	MARCH 2010

SHEET 3 OF 3