

CHAPTER 1 EXISTING CONDITIONS

The Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, outlines the necessary steps in the development of an airport Master Plan. The initial step in documenting the master planning process is the identification of existing conditions at an airport. This involves the collection of data pertinent to an airport and the area it serves. The objective of the existing condition task for Newport News/Williamsburg International Airport (PHF or Airport) is to provide background information for subsequent phases of analysis.

The development of a Master Plan for PHF requires the collection and evaluation of data relating to the Airport and the surrounding area. This information was obtained through the following process during the month of October 2010:

- on-site investigations of the Airport
- interviews with airport management, airport users/stakeholders, and air traffic control tower staff and other tenants
- the collection and analysis of previous reports and studies

In addition, a survey of tenants' facilities and plans was conducted during on-site interviews. A glossary of terms used throughout this master plan is provided in **Appendix A, Glossary**.

1.1 BACKGROUND

The Airport is located between the cities of Newport News and Williamsburg in the southeastern part of Virginia. Newport News is approximately 35 miles north of the North Carolina border and approximately 100 miles southeast of Washington, D.C., as well as being approximately 30 miles west of Norfolk and Virginia Beach.

This chapter is organized as follows. An airport setting section provides geographic and meteorological data for the Airport and the surrounding area. An airport role section provides an overview of the Airport's placement in the National Plan of Integrated Airport Systems (NPIAS) and provides a generalized description of the size and level of air service. The beginnings of the Airport are detailed in a development history section, providing key events in the timeline from the original dedication of the Airport to present day. Finally, an environmental section identifies prior and ongoing interrelated studies.

1.1.1 Airport Location and Setting and Meteorological Conditions

An airport is defined by its location relative to other specific landmarks, transportation corridors, and geography. The airport setting is defined as the context and environment in which the Airport operates relative to its physical and economic characteristics. Together the location and setting provide the time, place, and circumstance in which this analysis occurs.

1.1.1.1 Location

The Airport is located approximately 11 miles northwest of downtown Newport News and 15 miles southeast of Williamsburg. The Airport site is near Interstate 64, see Figure 1-1. The Airport's commercial service and general aviation facilities are all accessible via Interstate 64, which runs southwest of the Airport boundary.

Figure 1-1
AIRPORT LOCATION MAP



Source: Reynolds, Smith and Hills, Inc., 2010

1.1.1.2 Setting

The City of Newport News, Virginia (City) has a rich history, which began shortly after the founding of Jamestown, in 1607. It is located on the Virginia Peninsula or peninsula side of Hampton Roads in southeastern Virginia, bordering the Chesapeake Bay. According to the United States Census Bureau, the City has a total area of approximately 120 square miles, of which land makes up 69 square miles (58 percent) and 51 square miles (42 percent) is water.

The City is located in the Virginia Beach-Norfolk-Newport News, VA-NC Metropolitan Statistical Area (MSA) and is the 36th largest MSA in the United States with a total population of 1,674,498 as of 2007. The area includes the Virginia cities of Norfolk, Virginia Beach, Chesapeake, Hampton, Newport News, Poquoson, Portsmouth, Suffolk, and Williamsburg. It includes the counties of Gloucester, Isle of Wight, James City, Mathews, Surry, and York, as well as the North Carolina county of Currituck.

The City serves as one of the business centers on the Peninsula. The City of Norfolk is recognized as the region's central business district, while the Virginia Beach resort district and Williamsburg are primarily centers of tourism.

The Airport offers access to national and international destinations for passengers along with convenient accessibility to the region. The Airport also serves an important role in military aircraft training, as well as for general aviation activity.

1.1.1.3 Meteorological Conditions

A review of the prevailing meteorological conditions is necessary to assist in the evaluation of aircraft performance characteristics. Temperature, precipitation, winds, visibility, and cloud ceiling heights are elements used to analyze an area's climate for airport planning purposes.

The climate of Newport News can be characterized as humid/subtropical, due to the moderating effect of the ocean. Winters are very mild, and snowfall is rare. Summers are hot and humid with warm evenings. The mean annual temperature is 70° Fahrenheit (F), with an average annual snowfall of 6 inches and an average annual rainfall of 47 inches. The wettest seasons are the spring and summer, although rainfall is constant all year round. The highest recorded temperature was 105 F in 1980, and the lowest recorded temperature was -3 F in January 1985.

1.1.2 Airport Role and Service Area

Newport News/Williamsburg International Airport is a public-use, commercial service airport. It offers facilities for use by commercial service, general aviation, and military traffic. In 2009, the Airport was ranked the 115th busiest airport in the nation in terms of passenger enplanements and the fifth busiest commercial service airport in Virginia.

1.1.2.1 National Plan of Integrated Airport Systems

An airport must be included in the NPIAS to be eligible for Federal funding under the Airport Improvement Program. The FAA prepares the NPIAS every two years and identifies the public-use airports that are considered necessary to provide a safe, efficient, and integrated system of airports

to meet the needs of civil aviation, national defense, and the United States Postal Service. It also takes into consideration the relationship of each airport to the rest of the transportation system in a particular area, the forecast of technological developments in aeronautics, and the development forecast in other modes of transportation. The Airport is classified in the NPIAS as a Small Hub commercial service airport. **Appendix B, National Plan of Integrated Airport Systems** presents a detailed description of the NPIAS.

1.1.2.2 Airport Classification/Certification

The Airport is designated as a Part 139 Certificated Airport; within the Part 139 classification, airports are categorized into four classes. PHF is classified as a Class I Airport, which means it serves all types of scheduled operations of air carrier aircraft designated for at least 31 passenger seats and any other type of air carrier operation.

PHF operates as a Class I airport with scheduled airline services provided by AirTran Airways, ASA/Delta Connection, US Airways, and Frontier Airlines. This scheduled airline service is on B-717, B-737, MD-80, Airbus 318, CRJ-200, CRJ-700, CRJ-900, and De-Havilland Dash 8 aircraft. On occasion, the Airport accommodates charter operations using various equipment to include, but not limited to, B-747, B-727, B-737, and L10-11 aircraft.

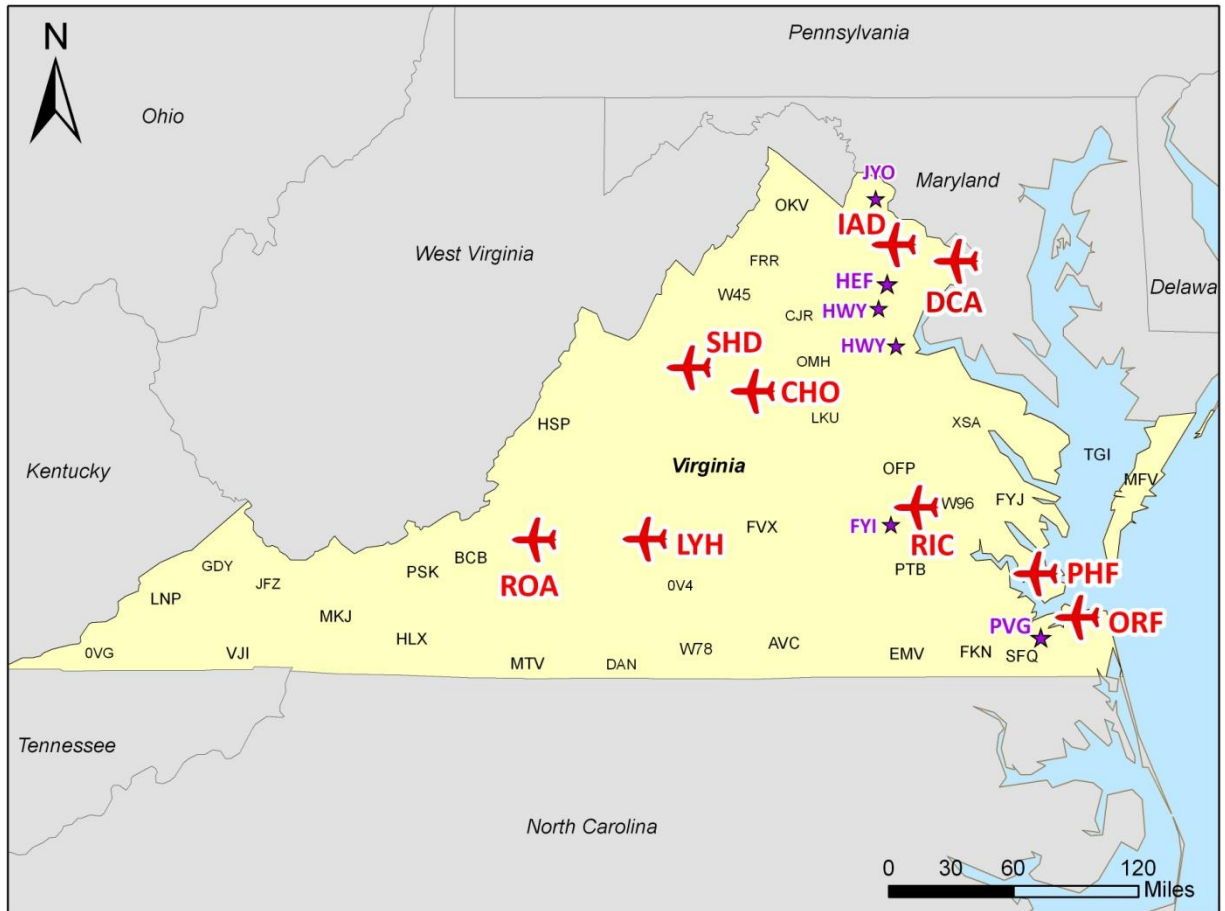
Air Force One (a Boeing 747) frequently uses the Airport for training. Other military aircraft, such as the C-5A and C-17, also occasionally use the Airport for touch-and-goes. Further, in the case of national emergency, it is expected the Airport would support the Navy base and nearby military airports with wide-body aircraft. Current civilian use of the Airport by wide body aircraft is rare. However, the Airport continues to seek air cargo, aircraft repair, and other users of large aircraft.

1.1.2.3 Adjacent Airports and Services

An important part of detailing the issues and existing conditions at an airport is the examination of neighboring airports and the services they offer. This includes both public and private use airports that may have an impact on the airspace surrounding the Airport. Figure 1-2 depicts the location of commercial service and general aviation airports throughout Virginia.

PHF is one of nine commercial service airports in Virginia with scheduled passenger flights, see Table 1-1. Within a 100 mile circle of the Airport, there are seven Virginia general aviation airports, see Table 1-2. Due to the drive-time proximity, these general aviation airports often have an influence on the Airport's service area in terms of airfield facilities, navigational aids, aircraft services, and pilot accommodations. Although a commercial service airport, PHF also serves general aviation activity within the region. When compared with the seven surrounding general aviation airports, PHF accounts for about 20 percent of the based aircraft and 30 percent of the operations.

Figure 1-2
AIRPORTS IN VIRGINIA



Legend

- ABC General Aviation
- ★ Reliever
- ✈ Commercial Service

Source: Reynolds, Smith and Hills, Inc., 2010

Table 1-1
VIRGINIA COMMERCIAL SERVICE AIRPORTS

Ident.	Airport	City	Runways	Pavement	Instrument Approaches	Based A/C	Annual Operations
CHO	Charlottesville-Albemarle	Charlottesville	3/21	Asphalt / Grooved	ILS, GPS,	91	89,458
DCA	Ronald Reagan Washington National	Washington, DC	1/19 15/33	Asphalt / Grooved	ILS, GPS, VOR/DME	0	278,273
IAD	Washington Dulles Int.	Washington, DC	1C/19C 1R/19L 1L/19R 12/30	Concrete / Grooved	ILS, GPS, VOR/DME	78	402,200
LYH	Lynchburg Regional	Lynchburg	4/22 17/35	Asphalt / Grooved	ILS, GPS, VOR/DME	89	61,616
ORF	Norfolk Int.	Norfolk	5/23 14/32	Asphalt / Concrete / Grooved	ILS, GPS, VOR/DME	106	117,432
PHF	Newport News/Williamsburg Int.	Newport News	7/25 2/20	Concrete / Grooved	ILS, GPS, VOR/DME	118	118,255
RIC	Richmond Int.	Richmond	16/34 2/20	Asphalt / Grooved	ILS, GPS, VOR	75	121,400
ROA	Roanoke Regional	Roanoke	6/24 15/33	Asphalt / Grooved	ILS, GPS, VOR/DME	112	119,827
SHD	Shenandoah Valley Regional	Weyers Cave	5/23	Asphalt / Grooved	ILS, GPS, NDB	69	26,268

Source: FAA Airport Database, FAA 5010 Form, Airport, 2010

Table 1-2
SURROUNDING GENERAL AVIATION AIRPORTS

Ident.	Airport	City	Runways	Pavement	Instruments Approaches	Based A/C	Annual Operations
MFV	Accomack County	Melfa	3/21	Asphalt	GPS, LOC, VOR/DME	20	12,983
W97	Middle Peninsula	West Point	10/28	Asphalt	GPS, VOR	36	16,425
W96	New Kent County	Quinton	10/28	Asphalt	GPS, VOR	38	15,608
EMV	Emporia-Greenville	Emporia	15/33	Asphalt	GPS, LOC	6	1,150
FKN	Franklin Municipal	Franklin	9/27	Asphalt	GPS, VOR/DME	25	5,012
SFQ	Suffolk Executive	Suffolk	4/22	Asphalt	GPS, LOC	82	41,182
PVG	Hampton Roads	Norfolk	10/28 2/20	Asphalt Asphalt	GPS	208	61,008

Source: FAA Airport Database, FAA 5010 Form, Airport, 2010

1.1.3 Airport Development History

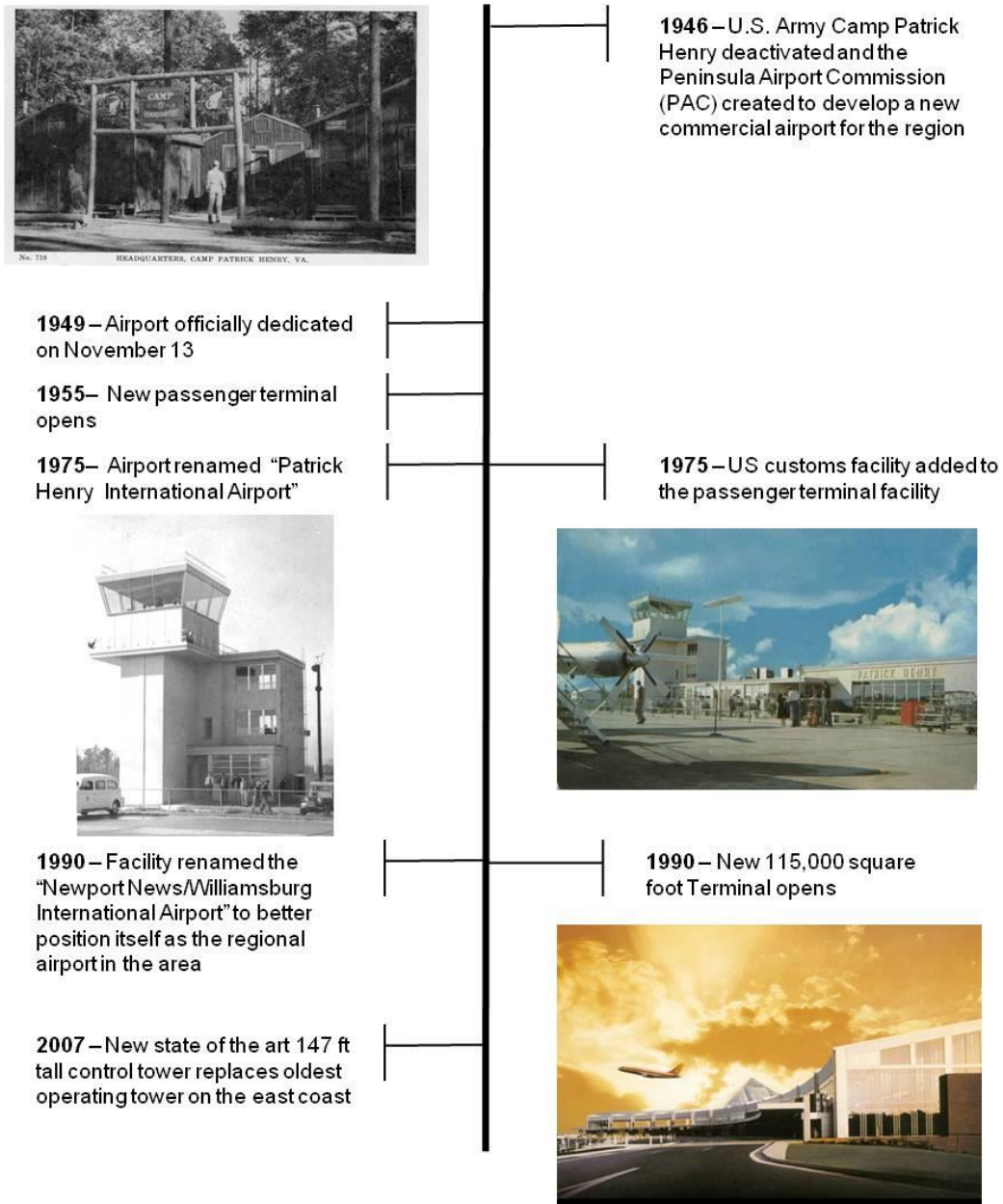
The Airport traces its roots back to World War II, when the U.S. Army opened Camp Patrick Henry. This camp was constructed as a staging area for troops departing to Europe. U.S. Army Camp Patrick Henry was deactivated in 1946 and in the same year, the Virginia Legislature decided to create the Peninsula Airport Commission in order to develop a new commercial airport for the region that would serve the cities of Newport News, Hampton, and Warwick. As result of this organization, the Peninsula Airport Commission (PAC) acquired 924 acres from the U.S. Army to build the new airport. In order to accommodate passenger traffic, the Airport built Runway 2/20 and Runway 6/24, both 3,500 feet in length. After construction, Piedmont Airlines and Capital Airlines became the first two commercial airlines to offer service in 1949. The facility was officially dedicated on November 13, 1949, and was renamed “Patrick Henry Airport” and received the designator “PHF” which represented “Patrick Henry Field.”

The following 20 years brought population expansion and economic prosperity to the region. During the period, the shipbuilding industry and the military became the largest employers. With attractions like Williamsburg, Yorktown, Jamestown, and beach attractions, the region was attracting over two million annual vacationers by 1960.

As air service continued to grow in the 1970s and a U.S. Customs facility was added, the Airport was renamed “Patrick Henry International Airport.” Non-stop destinations in the period included Atlanta, New York, and Chicago.

During the early 1980s, the Airport lost almost all of its passenger and freight service as the airlines transferred regional service to a neighboring airport (Norfolk International Airport). By the mid-1980s, the Peninsula Airport Commission began an aggressive growth campaign for the Patrick Henry International Airport. Over the next five years, approximately 26 million dollars were invested to improve the runways, update equipment, and construct a new terminal building. In 1990, a new 115,000 square foot terminal was opened for use. Later that year, the Peninsula Airport Commission renamed the facility the “Newport News/Williamsburg International Airport” to identify it as a better choice for travelers in the southeastern Virginia and northeastern North Carolina area. A graphic timeline of the Airport’s historical highlights is shown in Figure 1-3.

Figure 1-3
AIRPORT EVENT TIMELINE



1.1.4 Prior, Ongoing, and Interrelated Studies, Projects and Initiatives

The purpose for updating the Master Plan is to establish the vision for this facility and chart the new course for the upcoming 20-year period. This study will provide analysis and a recommended course of action, detailing the optimum way the Airport can grow over time to meet aviation transportation needs and at the same time provide opportunities for increased economic stimulus to the region.

The study will also be a demonstration project for two emerging topics of direct interest to FAA Headquarters. The Master Plan will have environmental sustainability as a key foundation and will furnish data and analysis for a new electronic platform for managing all of the data pertinent to airport planning and design.

- As a specific objective for this Master Plan Update, the Airport seeks to incorporate a sustainable planning initiative. This initiative will develop a final Master Plan product that includes a separate, but complementary, Sustainability Management Plan. Industry guidance such as, Airports Council International Sustainability Checklist and the Sustainable Aviation Guidance Alliance Handbook will be used and consulted during the planning process.
- As a specific objective for this Master Plan Update, the Airport seeks to incorporate an electronic Airport Layout Plan (eALP) utilizing methods and tools provided by FAA. This pilot program will allow FAA to gather most, if not all, of the possible data categories, create Global Information System (GIS) data layers, points, attributes, etc., and upload the data to the FAA GIS database, which will be used to demonstrate the development of a fully electronic ALP for the Airport.

The following list provides a summary of recent and ongoing studies that may also influence development at the Airport. These studies are used during the analysis of existing conditions to provide essential background information regarding the Airport, including previously identified areas of concern.

- **Newport News/Williamsburg International Airport Master Plan Update** – May 1997. The previous airport master plan update was prepared almost 15 years ago. The purpose of the study was to determine Airport development needs. This Master Plan Study replaces the 1997 document.
- **Newport News/Williamsburg International Airport Environmental Assessment Runway 25** - April 2010. A comprehensive Environmental Assessment was prepared to describe the potential environmental impacts associated with the extension of Runway 25.
- **City of Newport News Comprehensive Plan-Framework for the Future 2030** - October 2005. Newport News began the second phase of its comprehensive plan. It is a community derived, consensus document, which reflects the citizens' coordinated visions concerning the economic, physical, and social development of Newport News.
- **York County Comprehensive Plan – Charting the Course to 2025** - January 2005. York County updated its long-range plan for the physical development of York County. The update was divided into elements dealing with various aspects of the County. The transportation element included Newport News/Williamsburg International Airport and

supported the ultimate plan for the Airport as was discussed in the 1997 Airport Master Plan. York County also adopted an Airport Safety Management overlay district that establishes special height limitations for development in proximity to airports and the various airport approach zones. The purpose of these regulations, incorporated into the Zoning Ordinance, is to protect air space near Newport News/Williamsburg International Airport and the various military airports and airfields in the area.

Note that many federal, state, and local planning, strategy, and other documents will also help guide the planning process. The above list is not meant to be exclusive; rather, it serves as a starting point for this analysis.

1.2 AIRSIDE FACILITIES

This section provides an inventory of major airport facilities. Information was obtained through on-site investigations of the Airport, as well as interviews with Airport staff, fixed base operators, air traffic control personnel, and other users and stakeholders. Further, previous records were collected and analyzed.

The general configuration of the Airport, along with the location of major facility and infrastructure features, is shown in Figure 1-4. The airfield facilities include the system of runways, taxiways, navigational/lighting aids, and imaginary airspace surfaces used to accommodate the landing and takeoff of aircraft.

1.2.1 Airport Property

The Airport property totals approximately 2,020 acres, of which $\pm 1,670$ acres are for aeronautical purposes in fee-simple/patent ownership, and ± 350 acres are aviation easements (air rights).

Figure 1-4
DESCRIPTIVE AIRPORT AERIAL



Source: Reynolds, Smith and Hills, Inc., 2010

1.2.2 Runway System

The number of runways provided at an airport depends largely on the volume of traffic, while the orientation of the runways depend on the direction of the prevailing wind patterns, size and shape of the area available for development, and land-use or airspace restrictions in the vicinity of the Airport. In general, runway and connecting taxiways are arranged to provide adequate separation between aircraft in the traffic pattern; cause the least interference in taxiing, landing, and takeoff operations; and provide the shortest taxi distance from the terminal area to the runway ends.

The existing runway configuration at Newport News/Williamsburg International Airport consists of two intersecting runways. The primary runway (Runway 7/25) is a northeast-southwest oriented runway. Runway 7/25 is 8,003 long by 150 feet wide and is designed to accommodate Airport Reference Code (ARC – see Section 3.4.2) D-V group aircraft. This runway is served by a partial parallel taxiway (Taxiway D) serving the north side of the runway. Taxiway J is also a partial parallel taxiway and serves the opposite side of the runway (south). However, Taxiway J only connects to the runway at the 7 end.

The crosswind runway (Runway 2/20) is predominantly a north-south oriented runway. It is 6,526 feet long by 150 feet wide and designed to accommodate ARC C-III group aircraft. Taxiway A is a full-length parallel taxiway that serves the east side of Runway 2/20. The general characteristic of the runways are summarized in Table 1-3.

Table 1-3
EXISTING RUNWAY TABLE

Items	Runways			
	7	25	2	20
Runway Length	8,003'	8,003'	6,526'	6,526'
Threshold Displacement	None	None	None	None
Runway Width	150'	150'	150'	150'
Runway Gradient	0.02%	0.02%	0.08%	0.08%
Pavement Type	Concrete Grooved	Concrete Grooved	Concrete Grooved	Concrete Grooved
Pavement Strength				
Single Wheel Gear	100,000 lbs	100,000 lbs	100,000 lbs	100,000 lbs
Dual Wheel Gear	200,000 lbs	200,000 lbs	200,000 lbs	200,000 lbs
Dual Tandem Wheel Gear	350,000 lbs	350,000 lbs	350,000 lbs	350,000 lbs
Runway Lighting	HIRL	HIRL	HIRL	HIRL
Runway Marking	Precision	Precision	Non-Precision	Non-Precision
Visual Aids	MALSR	VASI, REIL	VASI, REIL	VASI, REIL
Airport Reference Code	D-V	D-V	C-III	C-III
Approach Ratio	50:1	34:1	34:1	34:1
Runway Protection Zone	1,000' x 2,500' x 1,750'	500' x 1,750' x 1,010'	500' x 1,750' x 1,010'	500' x 1,750' x 1,010'

Source: FAA Airport Database, FAA 5010 Form, Airport, 2010

1.2.3 Taxiway Systems

The primary function of a taxiway system is to provide access between runways and the apron areas. The taxiways should be located so that aircraft exiting the runway will have minimal interference with aircraft entering the runway or remaining in the traffic pattern. Taxiways expedite aircraft departures from runways and increase airfield operational safety and efficiency.

There are eight separate taxiways at PHF: **Alpha**, **Bravo**, **Charlie**, **Delta**, **Foxtrot**, **Gulf**, **Juliet**, and **Lima**. All of these taxiways are equipped with a lighting system. A summary of these taxiway are shown in Table 1-4.

Table 1-4
EXISTING TAXIWAY DATA

Item	Taxiways (By Major Designation Grouping)			
	A	B	C	D
Runway Served	07/25 & 02/20	02/20	02/20	07/25 & 02/20
Length	7,750'	585'	400'	6,575'
Width	75'	75'	75'	75'
Surface Type	Concrete	Concrete	Concrete	Concrete
Edge Lighting	Yes	Yes	Yes	Yes
Pavement Markings	Centerline & Edge	Centerline & Edge	Centerline & Edge	Centerline & Edge
Movement/Non-Movement Area	Movement	Movement	Movement	Movement

Item	Taxiways (By Major Designation Grouping)			
	F	G	J	L
Runway Served	07/25	07/25	02/20	02/20
Length	400'	400'	2,935'	3,850'
Width	75'	75'	75'	75'
Surface Type	Concrete	Concrete	Concrete	Concrete
Edge Lighting	Yes	Yes	Yes	Yes
Pavement Markings	Centerline & Edge	Centerline & Edge	Centerline & Edge	Centerline & Edge
Movement/Non-Movement Area	Movement	Movement	Movement	Non-Movement

Source: FAA Airport Database, FAA 5010 Form, Airport, 2010

1.2.4 Aircraft Parking Aprons

At PHF, the function of the aircraft apron is to provide areas for aircraft maneuvering to-and-from the taxiway system, support air carrier operations for both aircraft and support vehicles, offer transient aircraft parking, allow based aircraft tie-down and storage, and supply ramp area for conducting flight line services, including aircraft fueling. There are four separate ramp areas at PHF. These include an air carrier, two general aviation (GA), and a corporate apron. The existing aprons by function and size are shown on Table 1-5.

- The air carrier apron measures approximately 73,000 square yards in size and surrounds the existing commercial service terminal building. The air carrier apron can accommodate about nine commercial aircraft. This apron has two connecting taxiways, Taxiway A and Taxiway D. Taxiway A is continuous and is parallel to the east side of the apron.
- The primary GA apron is north of the air carrier apron and is parallel to Runway 02/20. This apron is approximately 75,000 square yards and serves both based and itinerant general aviation aircraft. Existing buildings and hangars border nearly all of the 2,700 linear feet of apron. This apron has six connecting taxilanes to Taxiways A, B, C, and D. Taxiway A is parallel to the east side of the apron.
- The secondary GA apron is behind the primary general aviation apron and is surrounded by privately owned hangars. This apron measures approximately 19,000 square yards and serves the based general aviation aircraft. Within both of these general aviation aprons there are approximately 92 aircraft tie-down spaces.
- The South Corporate Apron is located on the south side of Runway 7, and measures approximately 135,000 square yards in size. Nearly all of the 2,300 linear feet of apron border is available for development. This apron has two connecting taxiways to Taxiway J and Taxiway L.

Table 1-5
EXISTING AIRCRAFT PARKING AREA DATA

Apron	Size	Pavement Condition
Air Carrier	73,000 square yards	Excellent
Primary GA	75,000 square yards	Very Good – Fair
Secondary GA	19,000 square yards	Poor
South Corporate	135,000 square yards	Excellent – Very Good
Total	266,000 square yards	

Source: PCI 2008, and Airport, 2010

1.2.5 Pavement Condition Index (PCI)

The Airport's paved airfield surface totals nearly 4,858,213 square feet (111 acres), with pavements ranging from excellent to poor condition. The Airport conducts PCI surveys every few years with the most recent survey on September 16, 2008. The runway, taxiway, and apron pavement conditions resulting from the PCI inspection are illustrated on Figure 1-5.

The PCI is a visual analysis of the existing pavement surface conditions and serves as the baseline for progressive five-year PCI projections. PCI values range from 0, representing pavement that has failed and is no longer usable, to 100, which represent new pavement in pristine condition. The PCI values are further broken-down into a numeric index indicating the type of pavement repair anticipated; including reconstruction (0 to 25), major rehabilitation (25 to 55), or preventative maintenance (55 to 100).

- Runway 2/20 is of concrete construction and generally in very good condition, except for the 20 end where it is in good to fair condition.
- Runway 7/35 is of concrete construction and is generally in excellent condition, except for a small portion on the 7 end where it is in good to fair condition.
- The aprons, which have both concrete and asphalt construction, are generally in good condition. The exception is the secondary general aviation apron, which is in poor condition. In addition, there is a small ramp near the Runway 7 end, which is in very poor condition.

Figure 1-5
EXISTING PAVEMENT CONDITION

Figure NN-1. Pavement Branch, Section and Sample Unit Layout.
Newport News-Williamsburg International Airport

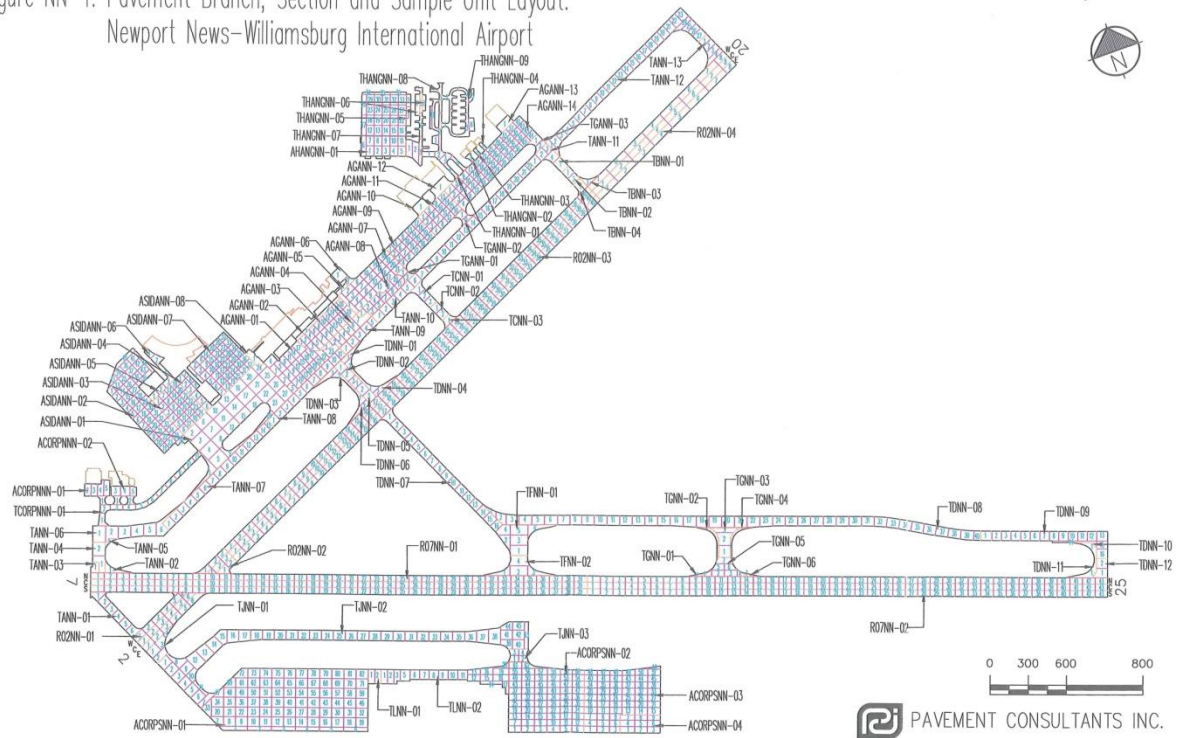
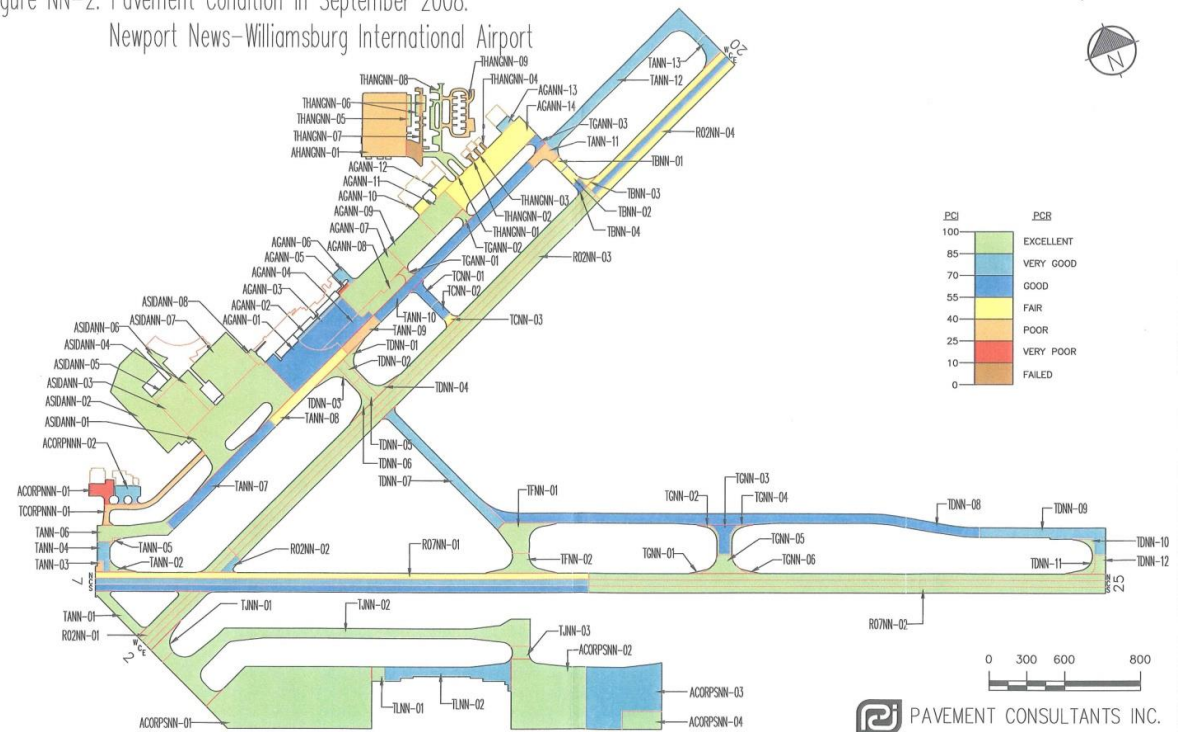


Figure NN-2. Pavement Condition in September 2008.
Newport News-Williamsburg International Airport



Source: Pavement Condition Index Survey, 10/31/2008.

1.2.6 Visual Aids

Visual aids are a necessary component to facilitate an airport's flight operations and enhance safety during periods of inclement weather and darkness by providing guidance to pilots in the air and on the ground. Additional information regarding visual aids can be found in **Appendix-C, Visual and Navigation Aids**. Visual Aids at PHF include a rotating beacon, runway lighting systems, approach lighting systems, airfield markings, and airfield signage.

1.2.6.1 Rotating Beacon

The rotating beacon consists of an alternating white and green light that identifies the facility as a civilian land airport. Rotating beacons are used to guide pilots to lighted airports and are normally operated from dusk to dawn. If the beacon is on during other hours, it typically indicates the airport is operating under instrument flight rules.

1.2.6.2 Runway Lighting Systems

Runway lighting is specifically placed on the airfield to guide pilots in taking-off or landing aircraft during the night or other times of low visibility. The runways at the Newport News/Williamsburg International Airport have the following types of lighting:

- Runway End Identifier Lights (REIL) are installed on Runway 20 and Runway 25. REILs consist of high intensity white strobe lights placed on each side of the runway to enable rapid and positive identification of the runway's threshold.
- High Intensity Runway Lights (HIRL) are marker lights bordering each side. Both runways are equipped with HIRLs, which are the brightest type of lights bordering runways.
- Land and Hold Short Operations (LAHSO) involve aircraft landing and holding short of intersection runways. LAHSO is a voluntary pilot procedure that air traffic control requests from the pilot to increase airport capacity and safety. LAHSO are in place prior to the Runway 02/20 intersection and prior to the Runway 07/25 intersection. LAHSO lighting is a row of white pulsating lights installed across the runway to indicate the hold short position. This lighting includes standard hold short markings as well.

1.2.6.3 Approach Lighting Systems

An Approach Lighting System is a marker installed on the approach end of a runway and consists of a series of lightbars, or a combination of two strobe lights that extend outward from the runway end. A medium-intensity approach lighting system with runway alignment indicator lights (MALSR) is installed on Runway 7. This lighting system provides guidance to pilots by radiating light beams in a directional pattern so aircraft can be aligned with the extended centerline of the runway.

1.2.6.4 Visual Glide Slope Indicators

Visual Approach Path Indicators (VASI) are installed on all runways at the Airport except Runway 7. VASIs provide visual guidance information during landing. The standard VASI consists of two sets of lights, which are usually set 20-feet apart. The system is designed so that lights appear

either as red or white depending on the viewing angle from the aircraft. When a pilot is approaching at the correct angle, the first set of lights will appear white, while the second set will appear red. All white means the pilot is too high, while all red means the pilot is too low and below the airport's glide slope.

The VASIs installed on Runways 02/20 are the Airport's maintenance responsibility. The VASI installed on Runway 25 is the FAA's responsibility for upkeep.

1.2.6.5 Other Airfield Lighting

Obstruction lighting is used to mark hazards and meant to be visible to pilots and not a disturbance to people on ground. It is important to note that all other airport lighting; lighting for aprons, parking areas, roadways, fuel storage areas, and buildings should be adjusted or shielded to prevent interference with air traffic control and aircraft operations.

There are seven obstruction lights on and adjacent to the Airport. The existing locations of lighted obstructions have been outlined in the Airport's Certification Manual. These are as follows. Near the approach end of Runway 7, the localizer and DME antennas are lighted obstruction. In a similar form, near the approach end of Runway 20, a localizer antenna is lighted. In addition, Runway 25 also has a localizer antenna lighted near the MALSR approach lighting system. Other lighted obstructions include the windsock between the intersecting runways, RVR antenna to the right of Runway 25, and weather instruments between Runway 20 and Runway 25. The final lighted obstruction on the airfield is a lighted Automated Surface Observation System (ASOS) located to the north of the windsock between Runway 20 and Runway 25.

1.2.6.6 Airfield Markings

All runways have markings, and the markings on a runway are determined by what type of runway it is. There are three types of runways, Visual, Non-Precision, and Precision. These types can be summarized as follows:

- Visual Runways do not provide an instrument-based landing procedure. This type of runway may have threshold markings, designators, and centerlines.
- Non-Precision instrument runways have equipment that provides horizontal position guidance to planes on non-precision instrument approaches. They may be marked with threshold markings, designators, centerlines, and sometimes a 1,000-foot mark.
- Precision Instrument Runways have equipment that provides both horizontal and vertical guidance for instrument approaches. Markings on this type of runway typically consist of a blast pad/stopway, threshold, designator, centerline, aiming point, and 500-foot, 1,000-foot, 1,500-foot, 2,000-foot, 2,500-foot, and 3,000-foot touchdown zone marks. A precision marked runway may be used for non-precision instrument or precision instrument operations.

Each has runway designator numbers, aiming bars, touchdown zone markings painted on the surface, and a dashed white centerline.

1.2.6.7 Airfield Signage

Taxiway and Runway Guidance Signs are provided and all airfield signs should be placed in accordance with the FAA-approved Airport Sign and Marking Plan and meet the standards of FAA Advisory Circular (AC) 150/5340-18, *Standards for Airport Sign Systems*. There are six types of signs installed on airfields: mandatory instruction signs, location signs, direction signs, destination signs, information signs, and runway distance remaining signs. The FAA standards for the location and installation of signs on airport runways and taxiways depend on the type of runway. Both runways at Newport News/Williamsburg International have the following signs:

- Distance Remaining Sign (black box with white numbers) - This sign uses a single number to indicate the thousands of feet remaining, for example, “5” would indicate 5,000-feet remaining.
- Mandatory Instruction Signs (white on red) - These show entrances to runways or critical areas. Vehicles and aircraft are required to stop at these signs until the control tower gives clearance to proceed.
- Runway Signs (white text on a red background) - These identify a runway intersection ahead.
- Holding Position Indicator (single, solid yellow bar) - These markings across a taxiway indicating a position where ground control may require a stop. If two solid yellow bars and two dashed yellow bars are encountered, this indicates a holding position for a runway intersection ahead.
- Location Signs (yellow on black background) - These identify the runway or taxiway an aircraft is currently on or may be entering.
- Direction Signs (black on yellow) - These identify the intersecting taxiways the aircraft is approaching, with an arrow indicating the direction to turn.

1.2.7 Navigational Aids

Navigational aids, commonly referred to as NAVAIDs, assist the pilot with enroute navigation and approaches into and out of airports. Additional information about NAVAIDS can be found in **Appendix C, Visual and Navigational Aids**. There are currently five types of navigational aids used at PHF: a Non-Directional Beacon (NDB), an Instrument Landing System (ILS), Very High Frequency Omni-directional Range (VOR), and a Global Position System (GPS).

1.2.7.1 Non-Directional Beacons

Non-Directional Beacons are one of the oldest forms of ground-based, navigational equipment still used in the United States. The NDB system transmits a low to medium frequency to an Automatic Detection Finder (ADF), which is installed in most aircraft. Runway 2/20 is the only runway at PHF equipped with the NDB navigational system.

1.2.7.2 Instrument Landing System

An ILS is a precision navigational aid that provides highly accurate course and distance guidance information for a runway. The two key components of an ILS are the localizer, which provides horizontal guidance, and the glideslope, which provides vertical guidance. There is an ILS installed on Runway 7.

The localizer that provides horizontal guidance as part of a precision approach to Runway 7 also transmits a signal that pilots can use to align for a non-precision approach to Runway 25. This is called a Localizer Back Course Approach. Localizer Back Course Approaches are commonly associated with Category I systems at smaller airports that do not have an ILS on both ends of the primary runway.

1.2.7.3 Very High Frequency Omni-directional Range

Very High Frequency Omni-directional Range is the primary ground-based en route navigation system used throughout the United States. The VOR system is made up of a series of ground stations that broadcast directional signals used by aircraft in determining the bearings from a station. There are three VOR stations in the immediate vicinity of PHF, with the closest being Norfolk, 20 miles to the southeast of the Airport.

- Norfolk (ORF) – 20 nautical miles to the southeast
- Harcum (HCM) – 22 nautical miles to the northwest
- Cape Charles (CCV) – 26 nautical miles to the northeast

Both HCM and CCV are used as initial approach fixes for instruments approaches to Runway 20 and Runway 25.

1.2.7.4 Global Positioning System

The Global Positioning System (GPS) is a space-based satellite positioning, navigation, and time-transfer station developed and maintained by the Department of Defense. GPS, at any one time, utilizes three of the 24 strategically placed satellites to calculate an aircraft's position and from there, determine the distance, bearing, and estimated time enroute to the next waypoint. GPS can be used in conjunction with, or in place of, the VOR or ILS approach. GPS approaches are available for both Runways 2/20 and 7/25 at the Airport.

1.2.8 Aeronautical Environment

Newport News/Williamsburg International Airport operates within the aeronautical environment associated with the local, regional, and national system of airports. The aeronautical environment includes the surrounding airspace and the type of aeronautical activities that take place within the airspace, including arrival and departure procedures.

1.2.8.1 National Airspace System

The National Airspace System consists of various classifications of airspace that are regulated by the FAA. Airspace classification is necessary to ensure the safety of all aircraft utilizing the facilities during periods of inclement weather, with the primary function of airspace classification being the separation of Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) traffic. Pilots flying in controlled airspace are subject to Air Traffic Control (ATC) requirements and must either follow IFR or VFR regulations. These regulations, which include combinations of operating rules, aircraft equipment, and pilot certification, vary depending on the class of airspace and are described in Federal Aviation Regulation (FAR) Part 71, *Designations of Class A, Class B, Class C, Class D, and Class E Airspace Areas, Airways, Routes, Reporting Points*, and FAR Part 91, *General Operating and Flight Rules*. Each of the classes of airspace can be classified as controlled, uncontrolled, special use, or other airspace. A detailed description of the National Airspace System is provided in **Appendix D, National Airspace System**.

1.2.8.2 Regional Airspace System

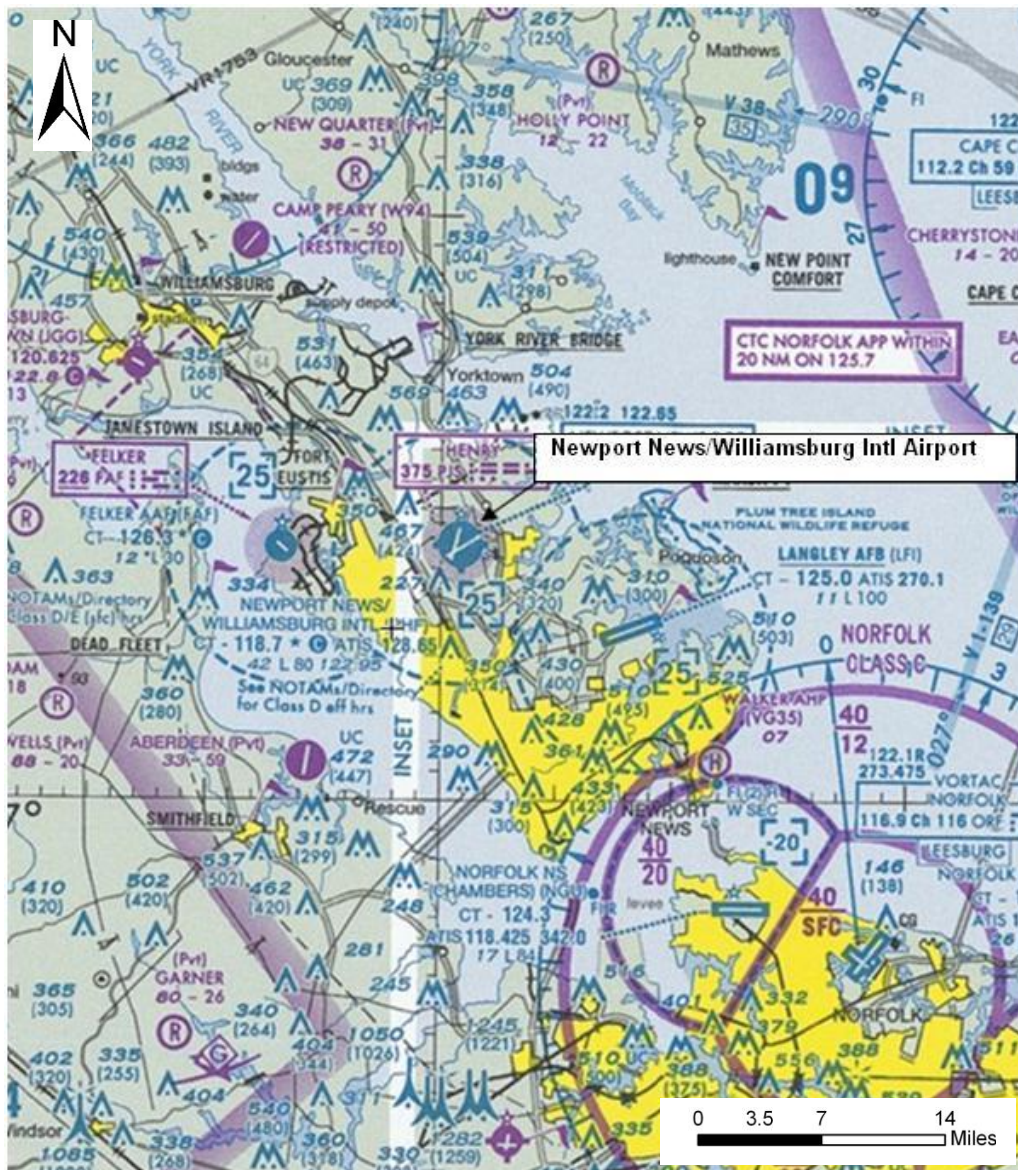
Airspace associated with PHF is depicted in the Washington Sectional Aeronautical Chart, shown in Figure 1-6. Local airspace surrounding the Airport is designated as Class D Airspace. The airspace consists of the immediate airspace with a horizontal radius within five miles of PHF, extending from the surface up to an altitude of 2,500 feet AGL. The level of air activity within a 20 nautical mile (NM) radius of the Airport is very high. The Airport is situated between the Class D airspaces surrounding Felker Army Airfield and Langley Air Force Base, both owned and operated by the U.S. military. The closest Class C Airspace, which surrounds airports that have an operating control tower serviced by radar approach control, is located in the airspace surrounding Norfolk International Airport.

Based on the current Washington Sectional Chart, there are over 13 airfields within a 20-mile radius of the Airport. These include the following:

- Norfolk International Airport – Commercial Service
- NAS Norfolk/Chambers – Military
- Felker AAB – Military
- Langley AFB – Military
- NAS Oceana – Military
- Williamsburg-Jamestown Airport – General Aviation (Privately owned, public use)
- Aberdeen Airport – General Aviation (Privately owned, restricted use)
- Beaverdam Airpark – General Aviation (Privately owned, restricted use)
- Garner Airport – General Aviation (Privately owned, restricted use)
- Wells Airport – General Aviation (Privately owned, restricted use)
- Melville Airport – General Aviation (Privately owned, restricted use)
- Hoffman Airport – General Aviation (Privately owned, restricted use)
- Holly Point Airport – General Aviation (Privately owned, restricted use)
- Handy Airport – General Aviation (Privately owned, restricted use)
- Camp Peary Department of Defense/Restricted

These additional facilities, in combination with PHF's activity, generate a vast range of aircraft activity with a wide range of aircraft performance abilities. Note that the closure of any of the privately owned airports may have an impact on the use of Newport News/Williamsburg International Airport.

Figure 1-6
AERONAUTICAL SECTIONAL CHART



Source: Washington Sectional Aeronautical Chart, 2010

1.2.8.3 Washington Air Route Traffic Control Center

Air Route Traffic Control Centers (ARTCC) are established primarily to provide air traffic service to aircraft operating under IFR on flight plans within controlled airspace, including airways and jet routes, and principally during the en route phase of flight. In addition, ARTCC can provide approach control services to non-towered airports and to non-terminal radar approach control airports.

Washington ARTCC is one of twenty-one ARTCCs located throughout the United States. Each of these centers is responsible for controlling en route traffic over the United States and parts of the Atlantic and Pacific Oceans in a definitive amount of geographical area that can be in excess of 100,000 square miles.

PHF is contained within the Washington ARTCC area of responsibility. Washington ARTCC is one of the busiest in the United States.

1.2.8.4 Air Traffic Control Tower

Air traffic in the vicinity of the Airport is controlled by PHF Air Traffic Control Tower (ATCT). The ATCT operates from 4:00 am to 11:00 pm daily. The ATCT controllers maintain all air to ground communications and visual signaling within five nautical miles and up to 2,500 feet Above Ground Level (AGL) of the Airport. Additionally, these controllers are responsible for directing ground movement of all aircraft and vehicles on the runway and taxiway system. Instrument arrivals and departures are normally controlled by the Norfolk Terminal Radar Approach Control Facility (TRACON).

The ATCT is shown in Figure 1-7. The ATCT is located to the west of the commercial service passenger terminal, just north of the departure end of Runway 7/25. According to ATCT records, the busiest month year to date so far in 2010 was March. However, in 2009 the busiest months were July through September. The predominate direction for both VFR and IFR traffic is northeast on Runway 7 with approximately 60 percent of all traffic, while IFR traffic accounts for approximately 70 percent of airport traffic.

Figure 1-7
AIR TRAFFIC CONTROL TOWER



Source: Bing Maps 2010

1.2.8.5 Local Airspace

The Airport has a non-standard traffic pattern (a standard traffic pattern is consider to be left-hand traffic). The PHF Air Traffic controllers estimate that Runway 2/20 is used 80 percent of the time and Runway 7/25 the remaining 20 percent. The ATCT does impose special departure procedures primarily for traffic separation from adjacent airports. The departure procedures for the Airport are as follows:

- Takeoff Runway 2: Climb heading 022 to 2,000 feet, to assigned route/fix.
- Takeoff Runway 7: Climb heading 067 to 2,000 feet, to assigned route/fix.
- Takeoff Runway 20: Climbing right turn to 2,000 feet via heading 250, to assigned route/fix.
- Takeoff Runway 25: Climb heading 247 to 2,000 feet, to assigned route/fix.

1.2.8.6 Automated Surface Observation System

The Automated Surface Observation System (ASOS) unit is located in the infield between Runways 2/20 and 07/25. This system reports current weather conditions at hourly intervals, but also reports special observations, if weather conditions change rapidly. The ASOS was commissioned in 2000 as a Level C facility, and the FAA is listed by the Aviation Weather Directorate as the agency owner.

1.2.8.7 Instrument Approaches

Instrument procedures associated with an airport can include Standard Terminal Arrivals (STAR), Standard Instrument Departures (SID), or Instrument Approach Procedures. The Newport News/Williamsburg International Airport is served by a variety of published instrument approaches, departure, and arrival procedures. These instrument approaches are identified in Table 1-6. The ILS is a precision approach navigational aid that provides highly accurate course, glide slope, and distance guidance information to a given runway.

Table 1-6
PUBLISHED INSTRUMENT PROCEDURES

Name	Procedure Type	Ceiling in Feet Above Ground Level (AGL)	Visibility Minimum
LOC Rwy 25	Non-Precision Approach	440	1 NM
ILS Rwy 25	Precision Approach	241	3/4 NM
ILS Rwy 7	Precision Approach	240	2,400 feet RVR
LOC Rwy 7	Non-Precision Approach	440	2,400 feet RVR
RNAV (GPS) Rwy 2	Non-Precision Approach	480	1 NM
RNAV (GPS) Rwy 7	Non-Precision Approach	354	2,400 feet RVR
RNAV (GPS) Rwy 20	Non-Precision Approach	460	1 NM
RNAV (GPS) Rwy 25	Non-Precision Approach	420	1 1/4 NM
LOC/DME Rwy 20	Non-Precision Approach	420	1 NM
NDB Rwy 2	Non-Precision Approach	700	1 NM
NDB Rwy 20	Non-Precision Approach	860	1 NM

Source: USDOT-FAA AeroNav Products, US Terminal Procedures Publication, Northeast Volume 3 of 4, Amendment 33, January 13, 2011

1.3 **COMMERCIAL SERVICE PASSENGER TERMINAL**

The Newport News/Williamsburg International Airport commercial service passenger terminal and Concourse B opened in 1992. Concourse A opened in May of 2010. Floor plans of the terminal, Concourse A, and Concourse B are shown in Figure 1-8 and Figure 1-9. These floor plans correspond with Table 1-7.

Table 1-7
EXISTING TERMINAL SQUARE FOOT AREAS

Terminal Area	Square Feet
Airline offices	5,375
Airline check-in counters	1,900
Baggage claim	3,820
Baggage make-up	7,050
Baggage claim drop	2,775
Departure areas	10,485
Checked baggage security screening	1,260
Passenger security screening	6,445
Food and beverage concessions	15,135
Other retail concessions	2,690
Rental car counters	1,150
Airport administration	6,515
Restrooms - public	3,145
Circulation, waiting, airline and airport operations, and TSA offices	<u>76,705</u>
Total terminal area	144,450

Source: Reynolds, Smith and Hills, Inc., 2010

1.3.1 **Aircraft Gates**

AirTran Airways and Frontier Airlines operate from Concourse A. Concourse A has six gates, each equipped with a passenger boarding bridge.

Concourse B has eight gates. Six of these are equipped with passenger boarding bridges and two are operated as apron boarding gates. Delta Air Lines and US Airways operate from Concourse B.

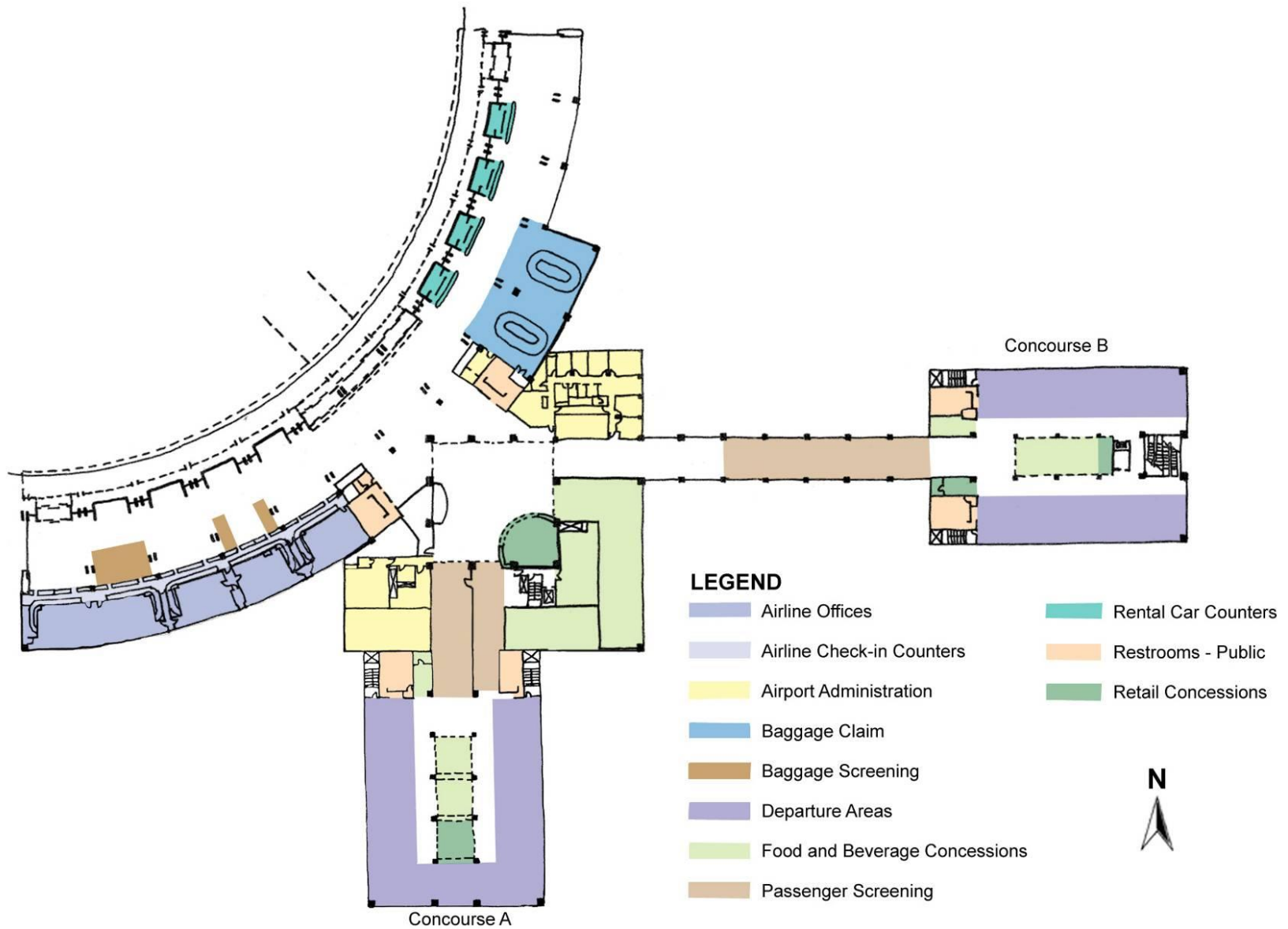


Figure 1-8
PASSENGER TERMINAL FLOOR PLAN - GATE LEVEL

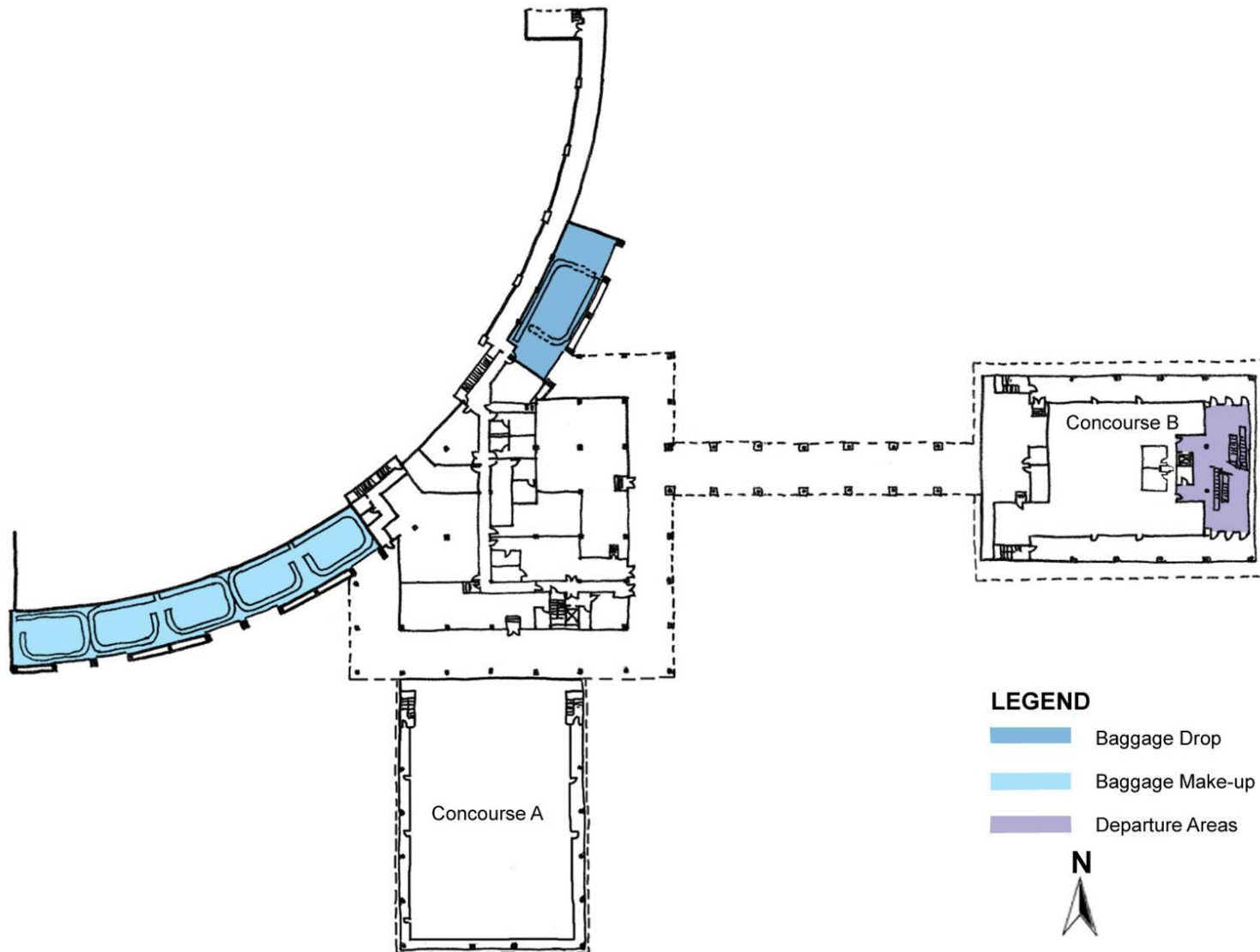


Figure 1-9
PASSENGER TERMINAL FLOOR PLAN – APRON LEVEL

1.3.2 Airline Check-in Positions and Self Service Kiosks

There are currently 32 check-in positions within the check-in hall in arrangements similar to that shown in Figure 1-10. Fourteen of the check-in positions are not currently assigned to an airline. Further, approximately six of these positions are blocked by the Transportation Security Administration checked baggage screening operations located in front of them.

Figure 1-10
EXISTING CHECK-IN COUNTERS



Check-in Counters	Positions
Assigned to airlines	18
Unassigned/blocked	14
Total check-in counters	32

In addition to the check-in positions, there are 15 self-service check-in kiosks as shown in Table 1-8. Three of the self-service kiosks are placed in front of three check-in positions. While the three check-in positions are usable for check-in, they are not operated in this manner.

Table 1-8
EXISTING CHECK-IN KIOSKS

Check-in Kiosks	Positions
Located directly in front of check-in counters	3
Located to the side of the check-in hall	4
Located in-tandem and in-line with the check-in counters	8
Total number of check-in kiosks	15

Four of the self service kiosks are placed to the side of the check-in area, and the remaining eight self service kiosks are located in tandem in front of check in counters where conventional check-in positions would traditionally be placed as shown in Figure 1-11.

Figure 1-11
EXISTING TANDEM CHECK-IN KIOSKS



1.3.3 Checked Baggage Security Screening

Checked baggage security screening is currently done immediately in front of unassigned check-in positions. The passenger must first check-in with their carrier and then must present their checked baggage to the Transportation Security Administration (TSA) personnel. The TSA screens the baggage and then inputs the baggage into each airlines outbound conveyor belt baggage handling system.

There are currently five CT-80 type baggage-screening devices in the check-in hall. In addition, there is one Trace Detection System (TDS) table associated with each checked baggage-scanning device. The TSA estimates that only four devices are currently warranted by the demand, but use the fifth device for those periods when a device may be down for maintenance. Two of the existing screening devices are shown in Figure 1-12.

Figure 1-12
CHECKED BAGGAGE SCREENING



1.3.4 Passenger Security Screening

There are currently two passenger security screening checkpoints: one for Concourse A and one for Concourse B. Each of the checkpoints has two security screening lanes. The TSA estimates that currently only two security screening lanes are probably needed, with perhaps a third being used during high traffic periods.

It is the desire of both the Airport and the TSA to combine the two passenger security screening checkpoints. This would reduce the confusion passengers experience in deciding which security checkpoint to use and could potentially reduce the number of security screening checkpoint lanes by one for a total of three lanes.

1.3.5 Departure Areas

There are three departure areas within the two concourses. The first is located on Concourse A, which has approximately 4,900 square feet of departure lounge area divided between six departure lounges. These departure lounges are designed in an open plan so that passengers desiring additional seating can sit in departure lounges adjacent to that from which their flight might be departing. Currently, AirTran Airways and Frontier Airlines operate flights from Concourse A. Concourse A opened in May of 2010 and is shown in Figure 1-13.

Figure 1-13
CONCOURSE A DEPARTURE LOUNGES



Concourse B opened in 1992 and has approximately 3,380 square feet on the upper/gate level of the concourse. Six departure lounges are located in this space from which Delta and US Airways currently operate their respective flights. This concourse has an open floor plan and is scheduled to undergo renovations to bring the finishes up to the standards of the more recently opened Concourse A. The upper level of Concourse B is shown in Figure 1-14.

Figure 1-14
CONCOURSE B DEPARTURE LOUNGES



There is also an approximately 1,760 square foot area on the lower level of Concourse B from which passengers access ground loaded aircraft under guidance from their respective airlines. This space is largely devoted to stairs, escalators, and an elevator used to transport passengers from the upper level of Concourse B to the lower level. The lower level departure area is shown in Figure 1-15.

Figure 1-15
CONCOURSE B LOWER LEVEL BOARDING AREA



1.3.6 Baggage Claim

The existing baggage claim area has two sloped-plate baggage claim devices that are shared between all of the airlines. These are shown in Figure 1-16.

Figure 1-16
EXISTING BAGGAGE CLAIM DEVICES



Each baggage claim device has a presentation frontage of approximately 85 lineal feet. Each baggage claim device placed immediately adjacent to an outside wall - reducing the presentation frontage of each baggage claim device to approximately 66 lineal feet (see Figure 1-17).

Figure 1-17
EXISTING BAGGAGE CLAIM DEVICE ADJACENT TO OUTSIDE WALL



The baggage claim devices are located in an area that measures approximately 3,820 square feet. Once the area of the baggage claim devices are subtracted, the remaining square foot area in which passengers stand to wait for their baggage is reduced to approximately 2,920 square feet.

1.3.7 Rental Car Facilities

There are five on-airport rental car agencies (Avis, Budget, Enterprise, Hertz, and National), which occupy terminal counter space and share 210 vehicle parking spaces within the parking garage. Each rental car agency services its vehicles in an independent facility on or near the Airport. Additional rental car parking space is available in the overflow/cell phone lot.

1.3.8 Terminal Curbs

The commercial service passenger terminal has a one level vehicle curb where both the enplaning passengers and the deplaning passengers are served from the same level. The roadway that passes in front of the terminal has four lanes as shown in Figure 1-18. The lane immediately adjacent to the terminal is wider than the others and is used by passengers and other terminal visitors to load and unload passengers and baggage. No parking is allowed on this curb unless the

driver remains with the vehicle. There is a designated length of curb near the central entrance to the terminal reserved for the parking lot shuttle bus. The terminal curb measures approximately 435 feet in length. As there are three crosswalks of approximately 25 feet in width each, the curb length is effectively reduced to approximately 360 lineal feet.

The next lane out from the terminal is used as a maneuvering lane to access the lane adjacent to the terminal. The third lane is the through lane in front of the terminal and the fourth lane is located adjacent to the outer curb of the terminal roadway. The fourth lane is used for the parking of commercial vehicles and the parking of vehicles associated with the airport police department.

Figure 1-18
EXISTING PASSENGER TERMINAL CURB



1.4 LANDSIDE FACILITIES

The airport landside consists of access to the Airport and particularly the commercial service passenger terminal, passenger/employee parking lots, rental car ready/return spaces, general aviation vehicular parking, interior public vehicular access, and publicly accessible airport buildings. Landside also refers to the various tenant and other uses of Airport land as addressed in this section.

1.4.1 Surface Access

Convenient, simple, and efficient airport surface access is an integral part of an airport system. Airport surface access consists of connecting roadways that enable airport users to enter and exit the airport landside facilities and parking facilities. Surface access is comprised of three elements: off-airport access roads, on-airport circulation, and vehicular parking. An aerial map of the access roads in the vicinity of the Airport is provided in Figure 1-19.

1.4.1.1 Off-Airport Access

The primary means of travel to the Airport consists of personal automobiles, taxicabs, or rental cars. Mass transit to the Airport is identified in Section 1.4.2 below.

The two major regional roadways that serve the Airport are Interstate 64 (I-64) and Route 17. The Airport is located to the northeast of I-64. I-64 connects Richmond, Williamsburg, and James City County to the northwest and Hampton, Poquoson, Norfolk, Portsmouth, and Virginia Beach to the southeast. Route 17 crosses the York River to the north into the Middle Peninsula, and the James River to the south into Isle of Wight, Suffolk, and Portsmouth.

The primary access from the northwest to the Airport is on Denbigh Boulevard to Jefferson Avenue. Access from the south and east is achieved from Highway 171 (Oyster Point Road).

Bland Boulevard is the main access point to terminal loop road; however, access can also be achieved by way of McManus Boulevard. Recent traffic observations were taken during the morning and evening when most people commute. These observations suggest that the majority of the traffic observed is utilizing Bland and McManus Boulevard to bypass portions of Jefferson and Denbigh Boulevard and not associated with the Airport. At times, vehicles become backed up at the stops signs (T- intersection of Siemens and McManus), which causes some delays for actual airport users. In addition, drivers for the Avis/Budget rental cars facility take left-hand turns across oncoming traffic, resulting in additional delays and is a potentially dangerous situation.

Interstate 64 access to and from the Airport is currently from the Route 105 exit approximately five miles north of the Airport and the Jefferson Avenue exit approximately a mile south of the Airport entrance road. An issue is the ease of entry to/from the Airport from limited access highways and if an interstate exit at Bland Boulevard is advantageous and/or feasible.

1.4.1.2 On-Airport Circulation

On-airport circulation consists of both public access roads and non-public service roads. The public access roads provide access not only to the passenger terminal, but also to general aviation and cargo facilities. Bland Boulevard, Lear Drive, and Cherokee Drive also provide access to aviation support facilities, all located on the west side of Runway 2/20.

Bland Boulevard, as it loops around the passenger terminal, is a two-lane road that provides principal access to the terminal area located along the west side of the airfield. This section of roadway is approximately 3,000 feet long.

G Avenue, Corporate Drive, and Air Park Drive provide an alternate southerly access onto airport property, while Oniana Road, Kentucky Drive, and Providence Boulevard provide a north and easterly access onto airport property.

There are approximately 32 gated vehicle access points providing secured and monitored vehicle access onto the airfield, primarily for emergency access, while about five are used for tenant access to the apron and hangar areas. These same roads and access points are also used by airport maintenance crews to gain access with machinery and service equipment. Fuel transport trucks access the fuel farm through Gate 5.

The Airport does not have a complete perimeter roadway system outside the Runway Object Free Areas for service vehicle and machinery access to other parts of the airfield. However, access to the entire airport property is available as shown in Figure 1-19.

Figure 1-19
AIRPORT ACCESS



Source: Reynolds, Smith and Hills, Inc., 2010

1.4.2 Intermodal Links

The Peninsula Transportation District Commission (PTDC) operates the Hampton Roads Transit (HRT), which was formed through the merger of Peninsula Transit (Pentran) and Tidewater Regional Transit (TRT) in 1999. The service currently provides 12 scheduled bus routes to Newport News and Hampton via the Hampton Roads Transit city bus system. The public transit service covers the cities of Hampton, Virginia and Newport News, Virginia. The Airport is directly served by route 111, which provides service to the nearby Patrick Henry Mall, Patrick Henry Hospital, and Riverside Regional Convalescent Center. Route 111 transfers at Patrick Henry Mall and allows further access throughout the cities of Hampton and Newport News. The 7 route connects to the nearby intersection of Denbigh Boulevard and Jefferson Avenue. Routes 6 and 7 also provide access to the intersection of Warwick Boulevard and Denbigh Boulevard near the Airport. In addition, the listed routes link to the Riverside Regional Convalescent Center on the Peninsula Service Line. PTDC provides 19 weekday and 17 weekend stops at the Airport. While PTDC data suggests that these routes carry few Airport passengers, they do serve the needs of workers at the Airport and surrounding work places, thereby reducing some private car vehicular traffic.

The Airport is served by several private ground transportation companies offering a variety of transportation options, including limousines and small vans. In addition, some companies also offer vans and motor coaches for transporting larger groups. A number of local taxicab companies service the Airport. It is important to note that taxis and for-hire cars park in a holding area at the west end of the terminal. The City of Newport News is examining expanding public access to the Airport. Future development in the Comprehensive 2030 plan also calls for expansion of a high-speed rail system connecting the cities of Richmond, Williamsburg, and Newport News.

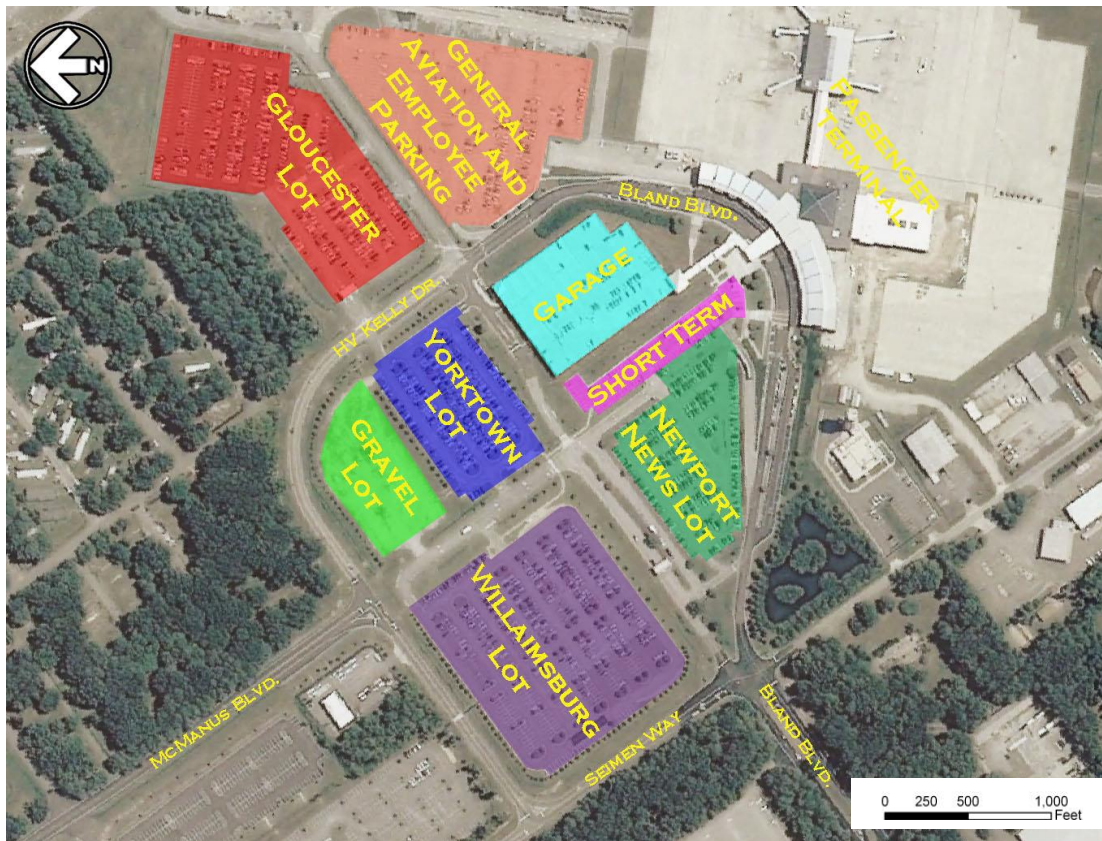
With the current national emphasis on intermodal access and smarter use of energy, the Airport's role as key travel link is currently being reexamined. Further, the proximity of the CSX railroad to the Airport potentially opens the opportunity for an airport-railroad link.

1.4.3 Vehicle Parking

Newport News/Williamsburg International Airport currently provides both surface parking and garage parking positions for passenger vehicles with access to/from Bland Boulevard. The surface passenger parking lots provide approximately 1,740 spaces, while the parking garage provides 505 public parking spaces. The garage also provides rental car spaces, which will be discussed below. In 2009, 259,031 vehicles parked in the airport's main passenger parking lots. This was a decrease of 34,143 vehicles from 2008.

In addition, there are 370 spaces for general aviation and airport employees, as well as approximately 590 additional storage spaces for rental cars and drivers waiting for arriving passengers (located west of the terminal). A layout of the parking locations is provided in Figure 1-20.

Figure 1-20
VEHICLE PARKING CAPACITIES



Lot Description	Rate	Parking Spaces
Main Passenger Parking Areas		
Short-Term	\$3/hr, \$30 daily max	60
Garage (Covered)	\$2/hr, \$10 daily max	505
Yorktown (Long-Term)	\$1/hr, \$6 daily max	230
Williamsburg (Long-Term)	\$1/hr, \$6 daily max	522
Newport News (Long-Term)	\$1/hr, \$6 daily max	244
Gloucester (Economy Lot)	\$1/hr, \$5 daily max	473
Gravel Lot Unpaved	\$1/hr, \$5 daily max	211
Subtotal		2,245
General Aviation and Employee Parking Area	Free	370
Rental Car (Ready-Return Areas)		
Hertz	N/A	41
National/Enterprise	N/A	85
Avis/Budget	N/A	84
Overflow and Cell Phone Lot	N/A	380
Subtotal		590
Grand Total		3,205

Source: Reynolds, Smith and Hills, Inc., 2010

1.4.3.1 Main Passenger Parking Lots

The airport's passenger parking system is divided into short-term, garage, long-term, and economy lots.

The short-term parking lot is located directly west of the terminal building and has a capacity of 60 spaces. The rate for parking in the short-term lot is \$3 per hour with a \$30 daily maximum. Access to the short-term parking lot is provided from Bland Boulevard. Exits from the short-term parking lot are provided via exit lanes through the long-term parking lot. Once vehicles exit the queuing areas for the parking lot pay booth, traffic is directed back onto Bland Boulevard.

The garage is a multi-level parking facility located adjacent to the passenger terminal. The parking garage has 505 covered public parking spaces available. The rate for parking in the garage is \$2 per hour with a \$10 daily maximum. Access to garage parking is provided along Bland Boulevard and H.V. Kelly Drive.

Long-term parking lots are named: Yorktown, Williamsburg, and Newport News. These long-term parking lots are to the south and west of the short-term parking lot. Between these three long-term parking lots, 996 parking spaces are available. The rate for parking in the long-term lot is \$1 per hour with a \$6 daily maximum. Access to the long-term parking is provided along Bland Boulevard and H.V. Kelly Drive.

The economy lot is named Gloucester and it is located northwest of the terminal building and north of H.V. Kelly Drive. This parking lot is the farthest away from the terminal building and has a capacity of 473 spaces. The rate for parking in the Economy lot is \$1 per hour with a \$5 daily maximum. Access to the Gloucester parking lot is provided along H.V. Kelly Drive. Exits from this parking lot are provided via exit lanes and once vehicles exit the queuing areas for the parking lot pay booth, traffic is directed back onto H.V. Kelly Drive.

1.4.3.2 Rental Car Ready/Return Area

The rental car ready/return area is shared by the five on-airport rental car companies and is located within the parking garage. The ready/return area provides 210 spaces; the entrance to this lot is provided along Bland Boulevard and H.V. Kelly Drive. The rental car agencies also utilize the cell phone lot as overflow, when necessary. Additional information regarding rental car agencies is provided in Section 1.3.7 Rental Car Facilities.

1.4.3.3 Cell Phone Lot

The Cell Phone lot has approximately 380 spaces, the entrance to this lot is provided along McManus Boulevard. This parking lot allows drivers to wait until they receive a call from a passenger in the terminal building, at which time the driver can exit the parking lot and pick up the passenger at the terminal building. This lot is free of charge.

1.4.3.4 General Aviation and Employee Parking

Vehicle parking for general aviation and Airport employees is provided in a paved lot immediately west of the fixed based operator's (FBO) building (commonly referred to as the former terminal parking lot). This lot contains approximately 370 parking spaces available for no charge for all general aviation users and airport employees.

1.4.4 Airport Owned/Operated Landside Facilities

The airport property includes a residential trailer park, which is approximately 33 acres in size. There are approximately 175 units located within the park. The airport's residential trailer park is depicted in Figure 1-21. This facility is located on the corner of McManus Boulevard and Cherokee Drive, and does not have access to the airfield. The Airport also owns a four family residential home and a two story residential home.

Over the past few years, the Airport has begun to reduce the size of the park and the number of residents within the park. Currently, there is a moratorium on new or extension-to-lease agreements. The purpose of this moratorium is to allow the Airport to examine all adjacent properties for compatibility and future land use needs of the Airport.

Figure 1-21
AIRPORT TRAILER PARK



Source: Bing Maps, 2010

1.5 SUPPORT FACILITIES

The support facilities include a broad set of functions designed to optimize the smooth and efficient operations of the Airport. The locations of primary support facilities are identified in Figure 1-22. Support facilities at the Airport include:

- Fixed Base Operators Facilities
- Former Passenger Terminal Building
- Air Cargo Buildings
- Other Tenants Buildings
- Aircraft Storage Facilities
- Rental Car Facilities
- Aircraft Rescue and Firefighting Building
- Maintenance Buildings
- Airport Fuel Storage Tanks
- Deicing Storage Tanks
- Utilities Facilities

Figure 1-22
FACILITY MAP



Source: Reynolds, Smith and Hills, Inc., 2010

1.5.1 Fixed Base Operators

A Fixed Base Operator (FBO) is usually a private enterprise located on an airport that provides services to based and itinerant aircraft. The extent of the services provided varies from airport to airport, and frequently includes aircraft fueling; major and minor aircraft maintenance and repair; aircraft rental; charter services; flight instruction; pilot lounge; flight planning facilities; aircraft tie-down; and hangar storage. The two FBOs at the Airport include Atlantic Aviation and Rick Aviation, Inc., and both are depicted in Figure 1-23.

Atlantic Aviation Inc. offers a full range of FBO services. In September 2010, it had 17 full-time equivalent employees. Atlantic Aviation leases 26,960 square feet of maintenance hangars from PHF. In addition, Atlantic Aviation maintains 38,626 square feet of office/shop space and 372,049 square feet of land. The main area used to serve general aviation pilots and their aircraft is located to the north of the Aircraft Rescue and Fire Fighting (ARFF) building.

Rick Aviation, Inc. provides a full range of FBO services, including maintenance, general aircraft services, and flight instruction. In September 2010, it had 33 full-time equivalent employees. Rick Aviation leases 8,000 square feet of maintenance hangars. In addition, Rick Aviation maintains 4,960 square feet of office/shop space and 126,000 square feet of land. Its service area is located at the north end of the former terminal building.

Figure 1-23
FIXED BASE OPERATORS

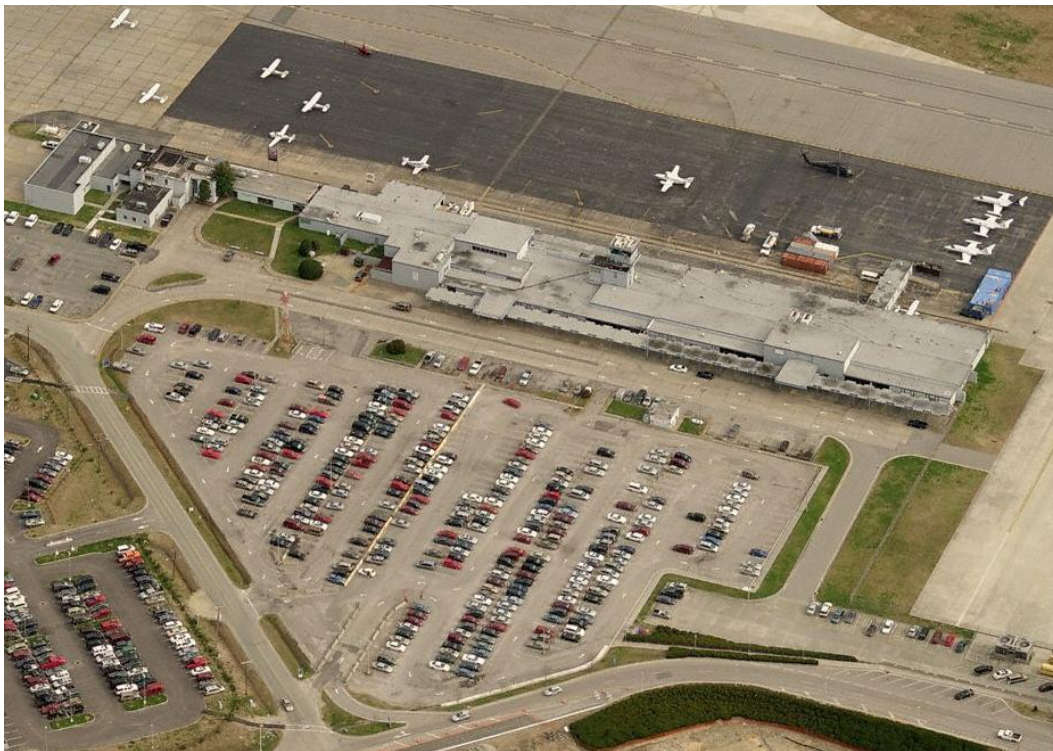


Source: Bing Maps, 2010

1.5.2 Former Passenger Terminal Building

In 1992, the Airport moved air carrier and commercial service passenger operations to the current passenger terminal. Since then, the Airport has filled the former passenger terminal building with new users including Hampton University, Department of Aviation; Aviation Academy Magnet High School; and Rick Aviation. Each has converted a portion of this 95,000 square foot facility to suit their individual needs. At the present time, the building is occupied and is in fair condition. The parking lot is used as the primary parking area for general aviation users and airport employee vehicle parking. This facility is depicted in Figure 1-24.

Figure 1-24
FORMER PASSENGER TERMINAL BUILDING



Source: Bing Maps, 2010

1.5.3 Other Tenants

The Airport has numerous other tenants such as: aircraft maintenance companies, aircraft sales companies, aircraft cleaning and detailing companies, and other aviation related businesses. These tenants are spread across the Airport property. Some of these tenants include:

- Airborne Tactical Advantage Company (ATAC) provides a fleet of aircraft and services to the U.S. military, including outsourced airborne tactical air training, threat simulation, and research and development. Utilizing high performance military aircraft, advanced threat tactics, and electronic attack equipment, ATAC provides realistic and cost-effective advanced training and testing to America's military forces. ATAC is located on the primary general aviation apron and north of Atlantic Aviation.
- L3 Communications designs and manufactures electronic systems including: sensors, electro-optics, fuses, guidance and navigation for precision engagement simulators, power and control systems, propulsion systems, electronic systems, and avionics. L3 provides support for the U.S. Government, with a focus on Department of Defense and civilian agencies, as well as a substantial commercial and international customer base. L3 Communications is also located on the primary general aviation apron and adjacent to ATAC.
- Orion Air Group provides acquisition, management, maintenance, and operation services for a large corporate aircraft fleet. Orion Air Group operates numerous private aircraft including long range Bombardier Global Express aircraft, and supplies the U.S. Air Force and U.S. Army with air support. They are located on the corporate apron, which is on the south side of Runway 7.

1.5.4 Air Cargo Facilities

Air cargo is an encompassing term used to describe the combined activities of air mail and air freight/air express. The air cargo industry includes a diverse range of businesses providing a variety of different services supporting the movement of freight by air. This includes all-cargo airlines, passenger airlines, freight forwarders, customs brokers, and air freight truckers. Presently, the Airport has minimal air cargo operations with no buildings or apron areas dedicated exclusively to air cargo operations.

1.5.5 Aircraft Storage Hangars

There are 36 hangars at the Airport, 27 are conventional hangars, 6 Port-A-Port hangars, and 3 multi-unit T-hangars. These hangars are located in various places around the airfield.

The primary general aviation hangar area is north of the air carrier apron and its primary axis runs parallel to Runway 2/20. There are approximately six medium to large conventional hangars in this location. This area is depicted on Figure 1-25. There are two additional conventional hangars south of the air carrier apron and whose primary axes parallel to Runway 07/25.

Figure 1-25
PRIMARY GENERAL AVIATION AIRCRAFT STORAGE AREAS



Source: Bing Maps, 2010

There is a cluster of general aviation hangars tucked behind the primary general aviation apron and there are approximately 18 medium to small conventional hangars, 3 multi-unit T-hangars, and 6 Port-A-Port hangars in this location. This area is depicted on Figure 1-26.

There is one large conventional hangar on the South Corporate Apron, which is located on the south side of Runway 7.

Figure 1-26
SECONDARY GENERAL AVIATION AIRCRAFT STORAGE AREAS



Source: Bing Maps, 2010

1.5.6 Aircraft Rescue and Fire Fighting

The purpose of an Aircraft Rescue and Fire Fighting (ARFF) facility is to save lives by maximizing the emergency response and intervention during an airport crisis by reducing response time to an aircraft emergency. The ARFF crew at PHF conducts fire fighting rescue operations and fire prevention services. More specifically, the ARFF provides emergency assistance; inspection of fuel farms, fuel trucks, and commercial sites; guidance relative to compliance with FAA standards on safety, the environment, and training; and is the medical first responder for an aircraft accident or incident.

The Airport operates two ARFF vehicles stationed in the ARFF building located at the north side of the former terminal building. The primary ARFF vehicle is a 2000 Oshkosh TI-1500. This vehicle meets FAA Index B requirements. Index B requires the Airport to have the capability of holding 1,500 gallons of water and 200 gallons of foam. In addition, the secondary ARFF vehicle is a 1986 GMC 7000 and is only used as a reserve to assist the primary ARFF vehicle if needed.

The Airport's ARFF staff also provides police protection in the terminal area. The Airport is currently classified as a Class I, Part 139 facility and meets FAA Index B requirements, and on request the Airport can meet Index C requirements. The existing 8,000 square foot ARFF building, as depicted in Figure 1-27, contains six vehicle bays, and is in fair condition. The ARFF currently houses two fire rescue vehicles, the Airport's security and communications operations area, and crew amenities.

Figure 1-27
ARFF FACILITY



Source: Bing Maps, 2010

1.5.7 Maintenance Building

The airport owns and operates a variety of maintenance equipment that is needed for ground maintenance, pavement and facilities maintenance, general repairs, and snow removal. The Airport maintenance equipment building is located adjacent to the air carrier apron, and is accessible via G Avenue. The maintenance building is in fair condition and depicted in Figure 1-28. The facility contains approximately 5,200 square feet and houses the equipment listed in Table 1-9.

Figure 1-28
MAINTENANCE BUILDING



Source: Bing Maps, 2010

Table 1-9
MAINTENANCE EQUIPMENT

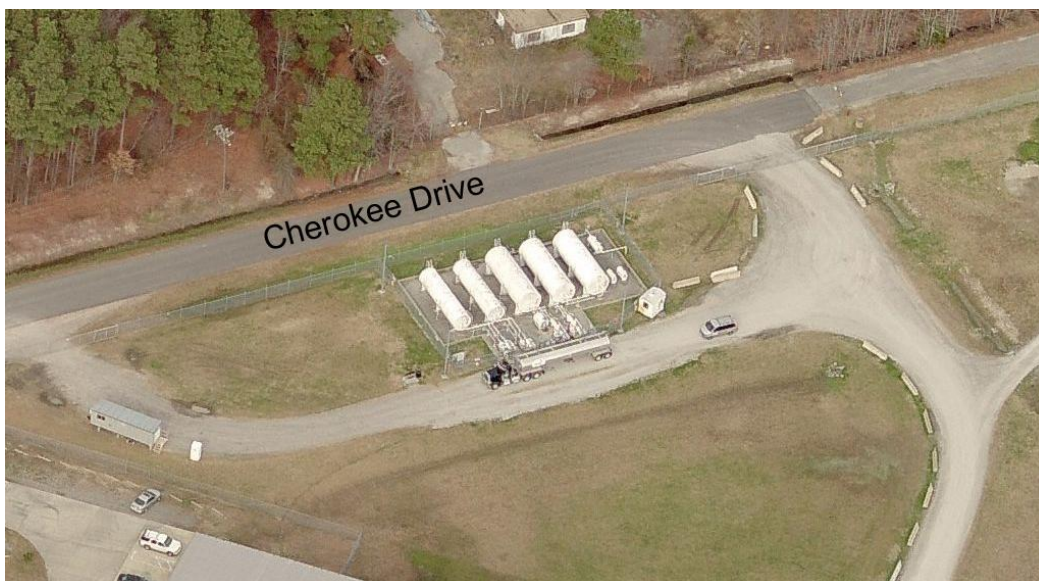
Vehicle Number	Year	Type
16	1986	GMC Dump Truck & Sand Spreader
38	1987	GMC Dump Truck & Sand Spreader
39	1987	GMC Dump Truck & Sand Spreader
108	2006	Freightliner Dump Truck
9	2001	Chevy 4x4 Pickup Truck
11	1990	Ford 4x4 Pickup Truck
75	2001	Ford 4x4 Excursion
25	1990	2755 4x4 J. D. Tractor
66	2001	6410 4x4 J. D. Tractor
79	2003	Ford F450 Equipment Truck
80	2003	North Star Mower
103	2004	Yard King Mower

Source: Airport Certification Manual, 2010

1.5.8 Fuel Storage

The airport owns one aircraft fuel farm that accommodates 100 low lead (100LL) and Jet A fuel in above ground storage tanks. The airport fuel farm is located at the northern edge of the general aviation apron adjacent to Cherokee Drive as depicted in Figure 1-29.

Figure 1-29
AIRPORT FUEL FARM



Source: Bing Maps, 2010

Most general aviation users require 100LL for piston driven aircraft, though some require Jet A fuel. Almost all of the commercial service aircraft require Jet A fuel. Aircraft fuel is available for purchase from either Atlantic Aviation, Inc. or Rick Aviation, Inc. There is no self-serve fueling provided by either FBO. All aircraft fueling occurs via refueling trucks. The Airport does not operate any aircraft fueling.

Both FBOs provide fuel service at the Airport: Atlantic Aviation, Inc and Rick Aviation, Inc. Rick Aviation fuels GA aircraft/Corporate traffic, while Atlantic Aviation fuels both Commercial and GA aircraft/Corporate traffic. Atlantic Aviation is contracted to fuel AirTran, Atlantic Southeast, Comair, Delta, Freedom Air, and Material Services. Table 1-10 outlines the fuel delivered to aircraft from June 2009 to May 2010 by monthly fuel flowage report totals. Throughout the year, the Aviation Gas (AVGAS) fueling remains relatively constant. However, the Jet A fueling peaks during the summer months, and decreases slightly in the winter months.

Table 1-10
FUEL FLOWAGE (in gallons)

Month	Rick Aviation, Inc.	Atlantic Aviation	AVGAS	Total
Jun	110,922	536,517	8,375	655,814
Jul	133,249	627,392	8,419	769,060
Aug	133,249	595,536	8,372	737,157
Sep	165,836	497,291	8,437	671,564
Oct	94,973	548,518	8,466	651,957
Nov	Unavailable	470,600	8,540	Unavailable
Dec	40,382	536,031	7,997	584,410
Jan	80,037	572,043	Unavailable	Unavailable
Feb	Unavailable	557,938	Unavailable	Unavailable
Mar	95,451	543,832	8,618	647,901
Apr	80,023	588,064	7,994	676,081
May	86,214	690,743	8,451	785,408

Source: Airport FBO Reports, 2009

1.5.9 Fencing

The Airport is fenced with an eight-foot high chain link security fence with outriggers and barbwire. All gates in the perimeter fencing are kept closed and locked except during authorized use. The perimeter fence is posted with signs that read the following: NOTICE AIRPORT RESTRICTED AREA AUTHORIZED PERSONNEL ONLY.

1.5.10 Deicing

Aircraft deicing facilities are recommended at airports where icing condition are expected. This includes airports that serve aircraft that can develop frost or ice on critical surfaces. Deicing activities at the Airport are conducted by the individual airlines and both FBOs. All of the deicing operations utilize Type I propylene glycol.

Each airline performs deicing activities at its respective gates using its own equipment and deicing fluids. In addition, both FBOs provide deicing services for both based and transient general aviation aircraft. Deicing of general aviation aircraft is performed at the tie down position, or in front of each FBO. With the Airport's relatively dry winters deicing rarely occurs. It is estimated that 10 to 15 aircraft per season have needed deicing in recent years. All fluid is stored in 55-gallon barrels.

1.5.11 Utilities

The availability of water, sanitary sewer, natural gas, electric, telephone, internet and storm water drainage to an airport must be considered when evaluating the existing utility conditions. In general, the public water distribution and sanitary sewage system are significant governmental responsibilities with major capital investments required for new or expanding area. Natural gas, electricity, telephone and internet services are normally provided by the private sector. The following sections identify the provider of the various utility services, utility capacities, and locations of dedicated facilities.

1.5.12 Potable Water and Sanitary Sewer

The Airport water supply is provided by the City of Newport News, Department of Public Utilities. The previous Airport Master Plan suggested water conservation measures would be needed due to an expected deficit in water supply. There is no indication of a current supply issue with potable water at the Airport. A 4-inch potable water pipe serves the passenger terminal building, while smaller pipes access the Airport in various locations to serve the existing tenants and future development.

A 24-inch sanitary sewer pipe serves an area northwest of the Airport and extends south to the passenger terminal. Sewer collection and treatment is provided by the Hampton Roads Sanitation District (HRSD). The HRSD serves an area greater than 700 square miles. Treatment of waste from the Airport is provided at the James River Wastewater Treatment Plant.

1.5.13 Natural Gas and Electricity

Natural gas is furnished by Virginia Natural Gas. Electricity is supplied by Virginia Power. Both natural gas and electricity enter the Airport from the intersection of H.V. Kelly Drive and McManus Boulevard, and enter the north end of the passenger terminal building. At the present time, no issues with the supply of electricity or natural gas are known.

1.5.14 Storm Water Drainage

The Airport has a storm water management program in place to combat storm water discharges mainly caused by industrial activity associated with Airport operations. The Airport has implemented Best Management Practices (BMPs) to minimize the impact of storm water on the environment. Such program measures include the coordinating of airport-wide training programs, the sampling and inspection program for the storm water outfalls, increased Airport security of discharges, coordinating the Storm Water Pollution Prevention Team (SWPPT), conducting a Pollution Prevention Opportunity Assessment (PPOA), implementing a Spill Prevention,

Countermeasure and Control Plan (SPCC), and similar activities. Site-specific BMPs addressing good housekeeping, preventative maintenance and inspections, spill prevention and response, shop-specific employee training, and shop-specific recordkeeping are also in place in the Storm Water Management Manual. In addition, an Airport team conducts an annual site compliance inspection to ensure the effectiveness of the Airport Storm Water Pollution Prevention Program (SWPPP).

As part of the SWPPP, the Airport is responsible for eight outfalls within its 1,670 acres of property, four of these discharge into the Harwood's Mill Reservoir and four discharge into Lucas Creek. Seven of the eight outfalls are open ditches, while one is a reinforced concrete pipe, which feeds into Deep Creek. Within the property, at least 111 acres are paved for aircraft use, another 35 acres are paved for vehicle use, and approximately 15 acres are buildings. This is approximately 161 acres of impervious surface area or 10 percent of the entire Airport. This percentage is consistent with an undeveloped open area, which typically has zero to ten percent of impervious surface area. The Airport's impervious surface area greatly influences the amount of storm water runoff into neighboring bodies of water.

1.5.15 Telephone/Communications

Cox Communication and Verizon are the telephone providers for the Airport and Airport tenants. Cox Communication has installed infrastructure upgrades to deliver video, phone, and high-speed internet service to businesses in and around the Airport. There is believed to be an ample communication infrastructure to support the existing and future demands at the Airport.

1.5.16 Co-mingled Recycling

Tidewater Fiber Corporation (TFC) in conjunction with the City of Newport News, conducts co-mingled, single-stream recycling for the Airport. Co-mingled, single-stream recycling is the collection of plastic, paper, glass, etc. within a single container. The Airport has blue bins that sit alongside trash containers and in key locations throughout the passenger terminal building. These bins are emptied periodically throughout the day and emptied into two eight-yard commercial front-loaded recycling containers. These containers are collected by TFC twice a week. At pickup, each container, on average, contain 275 pounds of recyclables. This equates to 4,400 pounds a month, or 52,800 pounds a year of recyclable goods.

1.6 AIRPORT ENVIRONS

The section describes and includes information about the various community issues. This includes discussion about how the surrounding communities and its services are impacted by Airport operations, and particularly the land use patterns, zoning districts, and ground transportation facilities

1.6.1 Ownership and Management

The Peninsula Airport Commission owns and operates Newport News/Williamsburg International Airport. The five-member board of directors makes policy decisions for execution by airport staff concerning airport business affairs. Airport management staff is comprised of the Airport Executive Director, the Facilities Director, the Marketing and Public Affairs Director, the Operations and Public Safety Director, and the Airport Finance and Administration Director.

1.6.2 Political Boundaries

Newport News/Williamsburg International Airport is located within the boundaries of York and Newport News. Additional surrounding counties and political bodies affected by the Airport include:

- Hampton County
- Poquoson
- James City County
- Williamsburg

1.6.3 Community Economic and Demographic Overview

Hampton Roads is the name for both a body of water and the Norfolk-Virginia Beach-Newport News Metropolitan Statistical Area which surrounds it in southeastern Virginia. The area consists of ten independent cities and seven counties. Each city is independent and has the powers and responsibilities of a county, including maintaining courts, schools, and a sheriff. Some cities do share these responsibilities with an adjoining county.

This area is notable for its year-round ice-free harbor; therefore, the military has a large presence in the region. Area military facilities include the following, all of which contribute to the diversity and stability of the region's economy:

- Camp Peary in York County
- Fleet Combat Training Center in Virginia Beach
- Fort Eustis in Newport News
- Langley Air Force Base in Hampton
- Naval Amphibious Base Little Creek in Virginia Beach
- Fort Monroe in Hampton (scheduled to be closed by 2011)
- Norfolk Naval Shipyard in Portsmouth
- Coast Guard Integrated Support Command Portsmouth
- Saint Julian Creek Naval Depot Annex in Chesapeake
- Fort Story in Virginia Beach
- Naval Weapons Station Yorktown in York County

The federal government also has two major research laboratories in the region. NASA/Langley is the home of a variety of aircraft-related research, including several one-of-a-kind wind tunnels. It is on the northeast edge of Hampton, near Poquoson. In addition, the Department of Energy's Thomas Jefferson National Accelerator Facility conducts physics research in Newport News; the lab hosts the Continuous Electron Beam Accelerator Facility and a kilowatt-class Free-Electron Laser.

Officially, the Virginia Beach-Norfolk-Newport News, VA-NC MSA has a population of about 1.7 million, the 36th-largest metropolitan area in the United States. This area has over 400 years of American history, and hundreds of historical sites and attractions in the area draw visitors from around the world each year. Hampton Road's "natural harbor" has allowed the area to be the mid-Atlantic leader in U.S. waterborne foreign commerce and is ranked second nationally behind the Port of South Louisiana based on export tonnage. The area's economic base is largely port-related, including shipbuilding, ship repair, naval installations, cargo transfer and storage, and manufacturing related to the processing of imports and exports.

1.6.4 Municipal Personal Property Taxes

Personal property taxes are taxes assessed to cars, trucks, motorcycles, trailers, buses, mobile homes, motor homes, boats, boat motors and aircraft. The Office of the Commissioner of Revenue in each municipality assesses taxes of this nature. In the City of Newport News, current personal property tax for aircraft is \$2.10 per \$100 of the currently assessed value of the aircraft according to the Aircraft Blue Book annually. The currently assessed value is taken from the Aircraft Blue Book at the full 100 percent value. Aircraft owners who base their aircraft at PHF are required to pay the tax in six-month increments.

Since this tax is set at the local level in Virginia, different municipalities use different rates to tax aircraft owners. The rate at nearby Williamsburg-Jamestown is four percent; however, the tax rate is only based at 25 percent of the Blue Book Value. Therefore, Williamsburg-Jamestown taxes aircraft owners at a rate of \$1.00 per \$100 of assessed value. Tenant opinion is that this may have helped to lure many small aircraft owners from PHF, with the hopes of saving thousands of dollars per year in tax fees. New Kent County Airport, Roanoke Regional and Suffolk Executive Airport also has a lower rate than at PHF. The lowest rate in the state is in Suffolk, Virginia with a rate of

\$0.58 per \$100 while the highest tax rate is Hampton Roads and Norfolk International at \$2.40 per \$100 of assessed value. Table 1-11 illustrates the local tax rate for each airport in the area, as well as each airports based aircraft.

Table 1-11
LOCAL PERSONAL PROPERTY TAX RATES

AIRPORT	IDENT.	TAX RATE	BASED AIRCRAFT
Newport News/Williamsburg Intl. Airport	PHF	\$2.10 per \$100	103
Williamsburg-Jamestown	JGG	\$1.00 per \$100	67
Norfolk International	ORF	\$2.40 per \$100	103
Hampton Roads (Norfolk)	PVG	\$2.40 per \$100	208
Roanoke Regional	ROA	\$1.06 per \$100	112
Suffolk Executive	SFQ	\$0.58 per \$100	59
New Kent County (Quinton)	W96	\$0.75 per \$100	38
Middle Peninsula (West Point)	FYJ	\$1.30 per \$100	36

Source: Municipal Websites, 2010

1.6.5 Existing Land Use and Zoning

Land use controls and zoning near an airport help control the location, type, and intensity of new urban land use and prevents incompatible land use from locating too near an airport. This insures the value of the public's investment in the facility is maintained, as well as the ability of the airport to expand as required in the future.

1.6.5.1 Airport Zoning

The Airport lies in two political jurisdictions and it is affected by two distinct sets of land use controls from both the City of Newport News and York County. York County has zoned land at the Airport as an Industrial District (IL). Newport News, however, has zoned land at the Airport as a Light Industrial District (M1) zone. This zoning is intended to provide opportunities for a wide variety of light manufacturing, fabricating, assembling, processing, wholesale distributing and warehousing in areas designated for Limited Industrial Development by the Land Use Plan.

The City of Newport News has applied a Special Purpose Zoning District to the Airport under Article XXXVI, Part 1, of the Zoning Ordinance, "Special Regulations Applicable to Property on and Surrounding Airports." Zones are established, which regulate the height of structures and vegetation in the vicinity of the Airport. In addition, an Airport Approach Restricted Use Zone has been established. Within this zone, no use may be made of land or water, which will:

- Create interference with navigational signals or radio communication
- Diminish pilots' ability to identify runway lights
- Create glare
- Create bird hazards
- Or in any way endanger aircraft maneuvering

The zoning ordinance does not include any sound attenuation requirements for structures. The City of Newport News Subdivision Ordinance does not include any requirements that address subdivision development within the vicinity of the Airport.

1.6.5.2 Airport Adjacent Land Uses

The Airport is immediately surrounded by industrial, commercial, and office land uses, as well as the Hardwood's Mill Reservoir to the north. As the distance from the Airport increases, commercial land uses decrease. However, concentrated commercial land use continues to predominate throughout the four-mile area along major thoroughfares and to the southeast of the Airport. Existing light industry and research and development land uses are concentrated in three places: the immediate Airport area (Patrick Henry Commercial Center/Denbigh Medical Center); south of the intersection of I-64 and Oyster Point Road (Oyster Point/Applied Research Center/CEBAF/Canon); and Oriana Road (Peninsula Industrial Park). It is important to note that residential land use within the four-mile radius around the Airport increases with distance from the Airport and is largely medium and low density. New residential areas are continually being developed northwest of the Airport along the York County and City of Newport News border. The vacant areas of land within four miles of the Airport are located in the Airport and Commerce Center area, Peninsula Park, and Snidow Boulevard crossing I-64 southwest to the railway. Additionally, schools, churches, and other community facilities are scattered throughout the area to serve residential neighborhoods.

The area surrounding the Airport in York County is zoned for Residential/Conservation District (RC) and Light Industrial use. The Residential/Conservation District (RC) is the least intensive zoning classification in York County. This designation is assigned to the land north and northeast of the Airport surrounding Harwood's Mill Reservoir. The land south of the Airport is zoned Planned Development-Major Residential Community (PD-MRC). The PD-MRC height restrictions apply in this district. This land is the location of the Villages of Kiln Creek, which cross into Newport News. Adjoining land in York County along the border is zoned for commercial and light industrial use. This land is not in an existing runway approach zone. Also, the majority of the vacant areas adjacent to the city boundary east and west of the Airport are steadily being claimed by residential development.

In the City of Newport News, the area adjacent to the Airport is zoned Retail Commercial (C2) on the north end, Town House Dwelling District (R2-A) on the south end, and Light Industrial to the west of the Airport. The Airport is in and immediately surrounded by M1/Light Industrial zoning, which permits a wide range of industries, limited manufacturing, and open storage yards. Zoning in the Patrick Henry Commerce Center is primarily M1 with some limited R2-A, R2-C, and C2. In addition to Light Industrial zones, there are two existing M2/Heavy Industrial districts near the Airport. One area contains the Newport News Public Works Operation Center and is located south of Jefferson Avenue one mile south of the Airport. The second M2 area is located slightly southwest of the Airport adjacent to Jefferson Avenue, 2,000 feet from the end of Runway 7. In addition, the approach to Runway 2 primarily crosses land within the City of Newport News. Out to a distance of approximately one and one-half miles, both approaches cross primarily commercial development. Beyond one and one-half miles, the approaches cross primarily residential areas out to the northern shoreline of the James River.

1.6.6 Future Land Use and Zoning

York County is seeking to strengthen its economic base by attracting commercial and industrial development. The York County Comprehensive Plan targets three areas within four miles of the Airport as “Economic Development Priority” areas. In addition, the City of Newport News has outlined a future land use plan, which allows the City’s employment and commercial centers to expand, function efficiently, and develop without impacting residential areas.

1.7 ENVIRONMENTAL CONDITIONS

FAA Order 5050.4B, National Environmental Policy Act (NEPA) *Implementing Instructions for Airport Projects*, requires the evaluation of airport development projects as they relate to specific environmental impact categories by outlining types of impacts and the thresholds for which they are considered significant. For some NEPA impact categories, this determination can be made through calculations, measurements, or observations. Other impact categories require that the determination is established through correspondence with the appropriate federal, state, and/or local agencies. A complete evaluation of the impact categories identified in FAA Order 5050.4B is required in NEPA documents resulting from a federal action.

The Airport is focusing its efforts on the following environmental categories:

- Biotic Resources
- Coastal Zone Management
- Air Quality
- Compatible Land Use
- Federally-listed Endangered and Threatened Species
- Floodplains
- Hazardous Materials
- Historic and Archeological Resources
- Water Quality
- Wild and Scenic Rivers
- Wetlands

This review is neither intended to replace nor substitute for required NEPA reviews for associated federal actions.

1.7.1 Biotic Resources

Biotic Resources on the Airport property and in the vicinity fall into three general categories: landscaped urban lands on and adjacent to Airport property; wildlife habitat associated with expanses of airfield and other undeveloped areas of grassland and wetlands on and in the vicinity of Airport property; and wetland and aquatic habitats. The “Federally-listed Endangered and Threatened Species” and “Wetlands” sections discuss these conditions in more detail.

1.7.2 Coastal Zone Management

The Virginia Coastal Zone Management (CZM) Program was established in 1986 to manage Virginia’s “coastal zone,” which includes 29 counties, 17 cities, and 42 incorporated towns located from Virginia’s shoreline to 100 miles inland. The Virginia CZM program is a voluntary partnership between the National Oceanic and Atmospheric Administration (NOAA) and U.S. coastal states and territories, which are authorized by the Federal Coastal Zone Management Act.

The CZM program is comprised of several state agencies and governments tasked with enforcing laws, regulations, and policies, aimed at protected coastal resources such as wetland areas in the case of Newport News/Williamsburg International Airport. Future actions should minimize or avoid any type of impact to the wetland areas on or immediately surrounding the Airport.

1.7.3 Air Quality

The Environmental Protection Agency's (EPA) responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer are defined by the Clean Air Act (CAA). The CAA established six criteria pollutants (carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM-10 and PM-2.5), and sulfur dioxide (SO₂) and required the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for these criteria pollutants. EPA has classified certain areas as attainment, non-attainment, or unclassifiable based on ability to meet the national or secondary ambient air quality standard for that pollutant.

Ozone is a primary pollutant concern for many areas in the United States, as well as Virginia because of the health impacts associated with the heart and respiratory system. As of September 16, 2010, there are nine non-attainment areas located in Virginia according to the EPA's Greenbook for 8-hour Ozone. However, Newport News/Williamsburg International Airport is not located within one of these designated non-attainment areas. Thus, the area meets the national ambient air quality standard for 8-hour Ozone and no further air quality initiatives are necessary to meet federal air quality standards.

1.7.3.1 Greenhouse Gas Emissions

This basic, planning level calculation to quantify the greenhouse gas emission produced at the Airport is neither intended to replace nor substitute a complete greenhouse gas emissions inventory. A "carbon footprint" is the measurable greenhouse gas emission impact on the environment. This measure relates to the amount of greenhouse gases (GHG) and CO₂ equivalencies produced through burning fossil fuels to support airport activity. There are six Kyoto pollutants considered in a GHG evaluation. These gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydro fluorocarbons (HFC), and perfluorocarbon (PFC).

Since the majority of GHG emissions at airports are generated by aircraft, and ground access vehicles (GAV), these are the two elements evaluated. For aircraft and GAV, only three Kyoto pollutants (CO₂, CH₄, and N₂O) are released as emissions. Aircraft and GAV emissions are based on activity information and then multiplied by the appropriate GHG emission factors to determine quantities.

There are several accepted methods to calculate aircraft and GAV emissions. The method used to calculate aircraft emissions follows Aircraft Method 1, from Intergovernmental Panel on Climate Change (IPCC), which relies on the use of an airport's total aircraft fuel sales data and appropriate emission factors to calculate total emissions for all departure flights. In 2009, the Newport News/Williamsburg International Airport sold approximately 7.8 million gallons of aircraft fuel.

The calculation of ground vehicle emissions follows GAV Method 1, from the IPCC, which uses the average vehicle mile travel (VMT) estimated with appropriate emission factors for the average vehicle. In 2009, 259,031 vehicles accessed the Airport parking area. These same vehicles travel approximately 24 miles (origin-destination), totaling 6.2 million vehicle miles traveled in 2009.

Based on the methods described above, and depicted in Table 1-12, it is estimated that the Airport emitted approximately 78,000 million tons (MT) of greenhouse gasses in 2009; 77,500 MT of carbon dioxide, 3 MT of methane, and 2 MT of nitrous oxide. These figures are tools to quantify a benchmark of emissions in order to suggest future sustainable practices that may reduce emissions.

Table 1-12
ESTIMATED CARBON FOOTPRINT

Description		Volumes	
Jet A 2009		7,768,107	gal.
		21.10	lb CO2/gal.
		0.27	gr CH4/gal.
		0.21	gr N2O/gal.
Avgas 2009		100,403	gal.
		18.36	lb CO2/gal.
		7.04	gr CH4/gal.
		0.11	gr N2O/gal.
GVA 2009		259,031	gva.
		6,216,744	vmt.
		19.56	lb CO2/gal.
Metric Conversions		0.0004536	MT/lb
		0.0000010	MT/gr
<u>Totals</u>			
Aviation Fuel Consumption		7,868,510	gal.
Vehicle Fuel Consumption		271,474	gal.
		77,577	MT of CO2
Estimated	Emissions	2.80	MT of CH4
		1.64	MT of N2O

Source: Reynolds, Smith and Hills, Inc., 2010

1.7.4 Compatible Land Use

FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures* states that the compatibility of existing and planned land uses in the vicinity of an airport are usually associated with the extent of the Airport's noise impacts. Therefore, assurances that zoning laws, current infrastructure, and the adoption of new zoning regulations must be compatible with the airport location and forecast noise contours should be in place to insure compliance.

The Airport property is within the City of Newport News limits, which borders both Newport News and York Counties. The City of Newport News has zoning authority at the Airport as well as at the runway approach and departure ends beyond the airport boundary. The zoning for the Airport and surrounding property includes height restrictions, which are consistent with Federal Aviation Regulations Part 77, *Objects Affecting Navigable Airspace*.

1.7.5 Federally-listed Endangered and Threatened Species

Provisions have been set forth in the environmental process for the protection of fish, wildlife, and plants of local and national significance. The Endangered Species Act, the Sikes Act, the Fish and Wildlife Coordination Act, the Fish and Wildlife Conservation Act, and the Migratory Bird Treaty Act are among these provisions.

The only federally-listed threatened species within the City of Newport News and York County is the Small Whorled Pogonia, which is classified as a flowering plant. The Brown Pelican and Arctic Peregrine Falcon are listed in the recovery stage, meaning they had been previously, but are no longer federally listed as threatened or endangered species to the City of Newport News and York County.

1.7.6 Floodplains

Executive Order 11988, *Floodplain Management* directs federal agencies to take action to reduce the risk of flood loss, minimize the impacts of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial floodplains. Floodplains are defined as "lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in a given year" (100-year floodplain). Therefore, the objective would be to avoid, to the extent practicable, any impacts within the 100-year floodplain.

The two special flood zones are located to the northeast perimeter boundary of the Airport and include Zone A and Zone X. Zone A includes a 100-year floodplain where no based flood elevations have been determined. Zone X includes 500-year floodplains, those 100-year floodplains with average depths less than one foot or a drainage basin less than one square mile, and 100-year floodplains protected by levees.

1.7.7 Hazardous Materials

Federal, state, and local laws regulate the use, storage, transport, or disposal of hazardous materials. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials may create pathways to allow contaminants to impact human health and the environment.

Aircraft fuel represents the largest quantity of hazardous material used at the Airport. A common waste generated at the Airport is used motor oil associated with aircraft, vehicle, and ground equipment maintenance at the Airport. Other than the hazardous waste associated with the Airport's current aviation activity, there are no significant hazardous materials or waste impacts involving property on or eligible for the National Priority List (NPL).

1.7.8 Historical and Archeological Resources

The National Historic Preservation Act (NHPA) of 1966 established the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places (NRHP) within the National Park Service (NPS). Section 106 of the NRHP requires federal agencies to consider the effects of their undertaking on properties on or eligible for inclusion in the NRHP. Compliance with Section 106 requires consultation with the ACHP, the State Historic Preservation Officer (SHPO), and/or the Tribal Historic Preservation Officer (THPO) if there is a potential adverse effect to historic properties on or eligible for listing on the NHRP. According to the *Runway 25 Extension Environmental Assessment*, no archeological or cultural sites have been recorded within the Area of Potential Affect (APE) based on data collected by Virginia's Department of Historic Resources. However, numerous sites have been recorded in York County and the City of Newport News for the study area within a 2 mile radius of an APE.

1.7.9 Water Quality

The Federal Water Pollution Control Act (FWPCA) provides the authority to establish water quality standards, control discharges, develop waste management treatment plans and practices, prevent or minimize the loss of wetlands, location with regard to an aquifer or sensitive ecological area, and regulate other issues concerning water quality. In Virginia, the Department of Environmental Quality administers the federal program as the Virginia Pollutant Discharge Elimination System (VPDES) permit program. Under the program, Newport News/Williamsburg International Airport has been issued VPDES permits since the Airport discharges storm water from "Industrial Activities." Most of the activities that adversely affect water quality fall under the "transportation category" of the EPA's classification for industrial activity.

Since Harwood's Mill Reservoir is the closest water body accepting water runoff from the Airport, at approximately 1,000 feet off the departure end of Runway 7, future actions should minimize any impact on contaminants Harwood's Mill Reservoir and Lucas Creek from "Industrial Activities" associated with Airport activity. The VPDES program allows the Airport to meet water quality regulations as they pertain to this and other neighboring water sources.

1.7.10 Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968, as amended (Act), describes those river segments designated as, or eligible to be included in, the Wild and Scenic Rivers System. Impacts should be avoided or minimized to the extent possible when the rivers or river segments that fall under this Act may be affected by a Proposed Action. In addition, the President's 1979 Environmental Message Directive on Wild and Scenic Rivers directs federal agencies to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory as having potential for designation under the Wild and Scenic Rivers Act.

There are no designated Wild and Scenic Rivers located in the State of Virginia. Thus, no future impact of any potential development alternatives is likely.

1.7.11 Wetlands

Executive Order 11990, *Protection of Wetlands*, defines wetlands as “those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.” Federal agencies are required to minimize the destruction, loss, or degradation of wetlands.

The U.S. Fish and Wildlife Service’s National Wetland Inventory has mapped wetlands located within the airport property. Most of the designated wetlands located on Airport property include freshwater emergent and freshwater forested/shrub. Future development should avoid and minimize any impacts to these areas.