

## CHAPTER 2

# AVIATION FORECASTS

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### 201. INTRODUCTION

The overall objective of this Airport Feasibility Study is to determine the demand for aviation facilities and the alternatives available to serve this demand in the James City County Area.

As presented in Chapter One titled “Existing Conditions”, the Geographical Study Area was introduced and an analysis was performed to define the Area of Influence associated with area aviation demand. This was accomplished recognizing that there are other area airports that, to an extent, compete to serve an overlapping aviation market area.

Next, further analysis was accomplished to establish the primary Williamsburg – Jamestown Aviation Service Area, as previously presented in Exhibit 1-3 The established Williamsburg – Jamestown Aviation Service (or market) Area represents the primary geographical area not readily served by other area aviation facilities. It is noted that, considering the factors noted above, as well as reasonable driving times for users, and geographical constraints (such as the James River and York River), the defined Aviation Service Area is contained within an area remaining relatively close to the existing Williamsburg – Jamestown Airport. This factor allows previous demand projections for the Airport (and vicinity) to be considered here, along with new scenarios.

The purpose of this section now becomes one of establishing forecasts of aviation demand for the defined Williamsburg – Jamestown Aviation Service Area. The forecasts will be developed at 5-year intervals, beginning with the year 2010, and continuing through the year 2025. This time period was selected to generally conform to forecast time periods used in the 2006 Williamsburg – Jamestown Airport Layout Plan (ALP) Update Study and Narrative Report. Projections contained in the 2003 Virginia Air Transportation System Plan Study (VATSP) Update for the years 2015 and 2020 will also be considered here. Where comparative projection study years differ, extrapolation and other techniques will be used to provide a comprehensive data base.

The Williamsburg – Jamestown Aviation Service Area Forecasts will be established by conducting a comparison review of previous forecasts that have been developed for the Airport Area by other sources, along with three (3) new scenarios developed as part of this Study. A comparison review will then lead to the selection of a preferred forecast, which will then be used to determine various



airport facilities needed to serve anticipated demand, as well as the alternatives available to accommodate the demand.

It is noted that the Williamsburg – Jamestown Airport is not presently included in FAA’s National Plan of Integrated Airport Systems (NPIAS) Report. Therefore, no NPIAS or FAA Terminal Area Forecast (TAF) projections are available to assist this forecasting effort.

## 202. BASED AIRCRAFT FORECASTS

### A. Existing Forecasts and New Scenarios

Existing forecasts of based aircraft at the Williamsburg - Jamestown Airport are shown in Table 2-1. The previous Master Plan projections represent historic master plan data found in the 2003 System Plan VATSP Report. The 2003 VATSP projections represent the forecasts established during the System Plan Update. The 2006 ALP Update projections present the forecasts that were selected as part of the most recent Airport Layout Plan Update Study and Narrative Report.

It is noted that, with minor modification and extrapolation to the year 2025, the 2006 ALP Update Study selected the 2003 VATSP projections for use in the ALP update Study. This explains why the projection numbers are so similar.

Table 2-1			
EXISTING FORECASTS OF BASED AIRCRAFT			
Year	Previous Master Plan*	2003VATSP	2006 ALP Update**
Actual 2007	77	77	77
Forecast 2010	-	-	69
2015	60	76	75
2020	62	83	-
2025	-	-	89

\* As indicated in the 2003 VATSP Report.

\*\* With minor modification, the 2006 ALP Update uses the 2003 VATSP projections.

Because the 2006 ALP Update projections are predicated on the 2003 VATSP projections and the numbers are so similar, the 2006 ALP Update projections will be carried forward to represent both forecasts. The existing forecasts to be carried forward will next be adjusted as required to reflect an actual 2007 level of 77 aircraft based at the Williamsburg - Jamestown Airport, as determined during the inventory process for this Study. The growth rates contained in the existing forecasts were extrapolated to provide comprehensive projections for all key planning years over the 2010 to 2025 planning period. In some cases, growth rates were modified slightly and rounded to provide a linear projection.



The adjusted existing forecasts are shown in Table 2-2, along with three new forecast scenarios developed as a part of this study. The new forecast scenarios are: 1) a National Market Share projection which considers that Aviation Service Area based aircraft levels might follow National US projections; 2) a Population Correlation projection which considers that Aviation Service Area based aircraft levels might follow James City County population growth projections; and 3) a Hangar Stimulation projection which considers that additional hangar development/availability may attract additional aircraft to the Aviation Service Area.

Table 2-2					
ADJUSTED FORECASTS OF BASED AIRCRAFT AND NEW SCENARIO PROJECTIONS					
Year	Previous Master Plan	2006 ALP Update/2003 VATSP	National Market Share	Population Correlation	Hangar Stimulation
<u>Actual</u> 2007	77	77	77	77	77
<u>Forecast</u> 2010	79	82	81	83	82
2015	82	88	87	92	100
2020	84	95	91	102	107
2025	86	102	95	111	114

### 1. National Market Share Projection

The publication “FAA Aerospace Forecast FY 2007 – 2020” indicates that, in 2007, there were a total of 231,343 active general aviation and air taxi aircraft in the US, and that this fleet is expected to increase at an average annual rate of 1.4 percent over the FAA forecast period to a total of 274,914 in the year 2020. With a 2007 based aircraft level of 77 aircraft at the Williamsburg - Jamestown Airport, this means that the Airport is currently capturing a 0.0333 percent market share of the National fleet. By extrapolating the FAA National Forecast to the year 2025 and assuming the 0.0333 percent market share will continue in future years, yields the National Market Share projection as previously shown in Table 2-2.

### 2. Population Correlation Projection

Future James City County Population projections were published by the James City County Planning Division in September of 2007. The projections indicate that in the year 2007, County population totaled 60,388 persons, and that County population is anticipated to increase to 87,298 persons in the year 2025. With a 2007 based aircraft level of 77 aircraft at the Williamsburg – Jamestown Airport, this translates to a per capita population factor of 0.001275. Assuming this per capita population factor continues over future years, yields the Population Correlation projection as previously shown in Table 2-2.



### 3. Hangar Stimulation Projection

Recent hangar development/availability at the Williamsburg – Jamestown Airport is viewed as having helped stimulate the growing number of based aircraft at the Airport. As an example, the 2006 ALP Update Study indicates that there were 60 aircraft based at the Airport in February 2005. This level of based aircraft has increased to 77 aircraft in November of 2007. This represents a 28 percent increase over a relatively short 33 month period, and it is noted that new hangar construction did occur at the Airport during this period. Since engineering plans already exist for the potential development of an additional 36 T-hangar spaces in the future and, according to the Airport owner, there are over 50 people on a waiting list for hangar spaces, in essence, this scenario states that the construction of 36 additional T-hangar spaces over the Study period would attract 36 additional based aircraft that would not have based at the Airport without the additional hangars. As previously shown in Table 2-2, to investigate this possibility, twelve aircraft have been added to the 2006 ALP Update/2003 VATSP projection scenario for each of the key years of 2015, 2020, and 2025 to create the Hangar Stimulation projection.

#### B. Selection of the Preferred Based Aircraft Forecast

Table 2-2 presented the adjusted based aircraft forecasts associated with the previous Master Plan Study, and the 2006 ALP Update Study/ 2003 VATSP Study. In addition, Table 2-2 also presented new based aircraft projections associated with the National Market Share, Population Correlation, and Hangar Stimulation scenarios.

This section now discusses and analyzes each of the adjusted based aircraft forecasts, and new based aircraft scenario projections, and leads to the selection of the preferred based aircraft forecast.

##### 1. Previous Master Plan Forecast

The Previous Master Plan Forecast (as adjusted) represents the most modest projection, and suggests that based aircraft at the Airport will grow from a 2007 level of 77 aircraft, to a 2025 level of 86 aircraft. This represents an overall growth rate of 11.7 percent, with an additional 9 aircraft projected to be based at the Airport over the year 2007 thru 2025 time period. This forecast is viewed as showing a very low level of growth over the future study period, which is inconsistent with more recent based aircraft growth rates experienced at the Airport, as previously discussed. This Forecast is considered to have a significant risk of underestimating Aviation Service Area demand.

Therefore, the Previous Master Plan Forecast (as adjusted) is not considered valid for potential selection and is not selected as the preferred based aircraft forecast.



## 2. 2006 ALP Update/2003 VATSP Forecast

This Forecast (as adjusted) suggests that based aircraft at the Airport will grow from a 2007 level of 77 aircraft, to a 2025 level of 102 aircraft. This represents an overall growth rate of 32.5 percent, with an additional 25 aircraft projected to be based at the Airport over the year 2007 thru 2025 time period. This forecast is viewed as showing a more moderate level of growth over the future study period, and better reflects recent levels of based aircraft growth experienced at the Airport.

This forecast is viewed as valid for potential selection.

## 3. National Market Share Projection

This Projection suggests that based aircraft at the Airport will grow from a 2007 level of 77 aircraft, to a 2025 level of 95 aircraft. This represents an overall growth rate of 23.4 percent, with an additional 18 aircraft projected to be based at the Airport over the year 2007 thru 2025 time period. Similar to the Previous Master Plan Forecast, this projection is viewed as showing a relatively low level of growth over the future study period, inconsistent with more recent based aircraft growth rates experienced at the Airport.

The National Market Share Projection is predicated on the growth of the number of active aircraft in the National US fleet (i.e. new aircraft produced are added to the forecast while retired or destroyed aircraft are removed from the forecast). As such, the projection does not fully account for factors that influence the owners of pre-existing active aircraft when considering a location to base their aircraft. Such factors include owners relocating to a new city, or seeking a different less congested airport.

Since the additional factors described above have been determined important to this Study, the National Market Share Projection is not considered valid for potential selection and is not selected as the preferred based aircraft forecast.

## 4. Population Correlation Projection

This projection suggests that based aircraft at the Airport will grow from a 2007 level of 77 aircraft, to a 2025 level of 111 aircraft. This represents an overall growth rate of 44.2 percent, with an additional 34 aircraft projected to be based at the Airport over the year 2007 thru 2025 time period.

This projection is viewed as valid for potential selection, and the fact that it is predicated on anticipated County population growth adds credibility to the projection.



## 5. Hangar Stimulation Projection

This Projection suggests that based aircraft at the Airport will grow from a 2007 level of 77 aircraft, to a 2025 level of 114 aircraft. This represents an overall growth rate of 48.1 percent, with an additional 37 aircraft projected to be based at the Airport over the year 2007 thru 2025 time period. While the growth rate associated with this Projection is very close to the growth rate of the previous Population Correlation Projection, the Hangar Stimulation Projection is based on three supplemental items, which are: 1) a review of the stimulation effect that recent hangar development has had on based aircraft levels; 2) information received regarding the current hangar waiting list for the Airport, and 3) the consideration of pending plans for additional hangar development at the Airport.

As previously indicated, engineering plans exist for the development of an additional 36 hangar spaces at the Airport. While potential construction and rental timing is unknown, for the purposes of this study, it is assumed that should this level of hangar development and rental occur over the study period, an additional 12 based aircraft (above the previous 2006 ALP Update/2003 VATSP Adjusted Forecast) could be attracted during each of the (2010-2015, 2015-2020 and 2020-2025) time periods.

As a result of the above analysis, the Hangar Stimulation Projection is considered to be valid for potential selection.

### **Preferred Based Aircraft Forecast**

Of the five forecast scenarios discussed above, three were considered valid for potential selection as the preferred based aircraft forecast. These three are:

- The 2006 ALP Update/2003 VATSP Forecast
- The Population Correlation Projection
- The Hangar Stimulation Projection

Of the three forecasts listed above for potential selection, the Population Correlation Projection is considered to best represent the based aircraft demand potential as associated with the defined Williamsburg – Jamestown Aviation Service Area, and is therefore selected as the preferred forecast.

This selection is predicated on the information and data presented above, and review comments received from the review agencies and the Community Airport Committee. Here it was considered that the 2006 ALP Update/2003 VATSP Forecast does not reflect the latest socioeconomic projections published in September 2007; and the Hangar Stimulation Projection is dependent on a number of variables which may not occur in the future to validate the projection.



### C. Projected Based Aircraft by Type

Projected based aircraft by type for the Williamsburg – Jamestown Aviation Service Area are shown below in Table 2-3. Three primary reference sources were used to develop the projections: 1) recent and current Airport records of based aircraft by type; 2) information obtained from the Based Aircraft Owner and Renter Pilot Surveys; and 3) information contained in the publication FAA Aerospace Forecast – Fiscal Years 2007-2020.

The projections indicate that single-engine piston aircraft are anticipated to continue to be the predominant aircraft type based at the Airport. The level of twin-engine piston aircraft is anticipated to remain essentially constrained over the study period do to the high operating costs and the relatively nominal performance associated with these aircraft types. It is noted that a small number of diesel powered single and twin-engine piston aircraft are entering the fleet. However, the reliability and cost efficiency of the diesel aircraft engine has not been proven yet, and it is unclear if larger more substantial numbers will enter the US fleet.

In concert with FAA forecasts, the based aircraft projections show an increasing percentage of single-engine and twin-engine turboprop aircraft, and recognize the emergence of the small, personal, Very Light Jet (VLJ) aircraft. Lastly, the projection recognizes the potential for a small number of rotorcraft to potentially be based at the Airport in the future.

Table 2-3							
PROJECTED BASED AIRCRAFT BY TYPE							
Year	Single Engine		Multi-Engine		Jet	Rotor	Total
	Piston	Turboprop	Piston	Turboprop			
<u>Actual</u> 2007	74	1	2	0	0	0	77
<u>Forecast</u> 2010	78	1	3	1	0	0	83
2015	82	2	3	2	2	1	92
2020	89	3	3	3	3	1	102
2025	94	4	3	4	4	2	111

## 203. AIRCRAFT OPERATIONS

### A. Introduction

During the inventory process for this Study, it was determined that the Airport Owner maintains substantial records regarding various categories of aircraft activity occurring at the Airport.

In an effort to produce the most reliable forecasts possible, the data contained in these Airport records were used extensively, along with information extracted from the Based Aircraft Owner, Renter Pilot, and Visiting Aircraft Surveys as



conducted for this Study. National aircraft activity projections found in the publication “FAA Aerospace Forecast Fiscal Years 2007 – 2020” were also used to develop the forecasts that will be presented below.

The forecast categories to be presented have been formulated to meet the specific requirements of this Study. When reviewing the forecasts, the following generalized definitions should be kept in mind:

- 1) *A Based Aircraft Operation* means a takeoff or a landing performed by an aircraft based at the airport.
- 2) *A Transient Aircraft Operation* means a takeoff or a landing performed at the airport by an aircraft visiting the area.
- 3) *An Itinerant Operation* means a takeoff by an aircraft with the intent of leaving the local area and landing at the destination airport; or a landing by an aircraft arriving from an originating airport normally located beyond the local area.
- 4) *A Local Operation* means an operation performed by an aircraft which:
  - ➔ Operates in the local traffic pattern (such as a Touch and Go operation), or within sight of the departure airport;
  - ➔ Are known to be departing for, or arriving from flight in local practice areas located within a 20-mile radius of the departure airport, or
  - ➔ Execute simulated instrument approaches or low passes at the airport.

**B. Based Aircraft Itinerant Operations By Type**

As shown below in Table 2-4, itinerant operations conducted by based aircraft are anticipated to grow from a 2007 estimated level of 8,940 annual operations to a 2025 level of 14,700 annual operations. This represents an overall increase of 66 percent over the study period. These operational forecasts reflect the itinerant activity anticipated by a growing number of based aircraft and changing based aircraft type mix, as previously presented in Table 2-3.

Table 2-4							
BASED AIRCRAFT ITINERANT OPERATIONS							
	Single Engine		Multi-Engine				
Year	Piston	Turboprop	Piston	Turboprop	Jet	Rotor	Total
<u>Estimate</u> 2007	8,500	240	200	0	0	0	8,940
<u>Forecast</u> 2010	8,860	250	310	280	0	0	9,700
2015	9,890	500	320	560	500	110	11,880
2020	10,520	750	330	840	750	130	13,320
2025	10,980	1,000	340	1,120	1,000	260	14,700



### C. Transient Aircraft Itinerant Operations by Type

As shown below in Table 2-5, itinerant operations conducted by visiting aircraft are anticipated to grow from a 2007 estimated level of 6,240 annual operations to a 2025 level of 7,180 annual operations. This represents an overall increase of 15 percent over the study period. The forecast relies heavily on Airport Transient Aircraft Operational Records, as well as information extracted from the Visiting Aircraft Surveys.

Table 2-5							
TRANSIENT AIRCRAFT ITINERANT OPERATIONS							
Year	Single Engine		Multi-Engine		Jet	Rotor	Total
	Piston	Turboprop	Piston	Turboprop			
<u>Estimate</u> 2007	4,760	130	800	370	30	150	6,240
<u>Forecast</u> 2010	4,880	140	810	380	40	160	6,410
2015	5,000	160	820	400	70	180	6,630
2020	5,130	190	830	430	120	200	6,900
2025	5,250	220	840	460	190	220	7,180

### D. Local Operations By Aircraft Type

As shown below in Table 2-6, local operations are anticipated to grow from a 2007 estimated level of 6,900 annual operations to a 2025 level of 8,100 annual operations. This represents an overall increase of 17 percent over the study period. The forecast recognizes that the vast majority of local operations are conducted by single-engine piston aircraft during training and proficiency flights, and that the growing cost of fuel and use of advanced flight simulators will moderate growth.

Table 2-6							
LOCAL OPERATIONS BY AIRCRAFT TYPE							
Year	Single Engine		Multi-Engine		Jet	Rotor	Total
	Piston	Turboprop	Piston	Turboprop			
<u>Estimate</u> 2007	6,830	20	30	0	0	30	6,910
<u>Forecast</u> 2010	7,120	20	30	0	0	30	7,200
2015	7,400	30	30	0	0	40	7,500
2020	7,700	30	30	0	0	40	7,800
2025	8,000	30	30	0	0	40	8,100

*Note:* Touch and Go operations are a part of local operations, and are virtually all conducted by single-engine piston aircraft. It is estimated that 35 percent of all single-engine piston aircraft local operations will also be Touch and Go operations.



## E. Air Taxi, Air Tour, And Military Operations

### 1. Air Taxi Aircraft Operations

Air Taxi Operations are governed by Federal Aviation Regulation (FAR) Part 135. Also known as Air Charter Operations, this activity is conducted by operators who offer “on demand” air transportation service to the general public. Air Taxi Operations are conducted using various aircraft types. Historically, predominant aircraft types have included twin-engine piston, twin-engine turboprop, and jet aircraft. More recently, use of single-engine piston and single-engine turboprop aircraft have increased. As shown below in Table 2-7, based on Airport records, it is estimated that some 500 Air Taxi Aircraft Operations presently occur on an annual basis.

As also shown in Table 2-7, it is anticipated that Air Taxi operations will exhibit a strong growth trend over future years, reaching a level of 1,100 Air Taxi Aircraft Operations in the year 2025. This growth considers the recent introduction (and anticipated success) of the new on demand air taxi business model pioneered by Day Jet. Utilizing Very Light Jet (VLJ) aircraft and other new technologies, such Air Taxi operators are striving to offer the public reliable, more direct air transportation service - at reduced total travel time, and cost.

It should be noted that the Air Taxi Aircraft Operations projections shown in Table 2-7 have been integrated into the Based Aircraft Itinerant Operations By (Aircraft) Type forecast, as well as the Transient Aircraft Itinerant Operations By (Aircraft) Type Forecast, as previously presented.

Table 2-7					
PROJECTED AIR TAXI OPERATIONS					
	Estimate	Forecast			
Year	2007	2010	2015	2020	2025
Operations	500	550	700	900	1,100

### 2. Air Tour Aircraft Operations

During previous years, the Williamsburg – Jamestown Airport offered formalized Air Tour flights of the Historic Triangle Area to the general public. A Cessna 206 and other fixed-wing aircraft were used to provide this service.

However, in recent years, with the advent of new security and environmental (noise) concerns, new Federal Aviation Regulation (FAR) Part 136 titled “Commercial Air Tours and National Park Air Tour” was adopted. This FAR set in place new rules and restrictions which no longer made the continuation of Air Tour flights at the Williamsburg - Jamestown Airport practicable.

Given the continuing national security and environmental concerns, it is not anticipated that the provisions of FAR Part 136 will be relaxed in the foreseeable future. Therefore, a return of formalized Air Tour flights at the Airport is not anticipated.

### 3. Military Aircraft Operations

Airport records indicate that, on an annual basis, some one hundred (100) Military Aircraft Operations are conducted at the Airport. These operations primarily represent US Military T34C (Turbo Mentor) aircraft conducting cross-country training flights. This nominal amount of activity is anticipated to remain steady and at the same level over the future study period.

It should be noted that the Military Aircraft Operations projections as discussed above have been integrated into the Transient Aircraft Itinerant Operations By (Aircraft) Type Forecast, as previously presented.



#### F. Forecast Summary Table

Table 2-8 provides a summary of the prominent forecast projections established in this section.

Table 2-8				
FORECAST SUMMARY TABLE				
	2010	2015	2020	2025
<b>Based Aircraft</b>	83	92	102	111
<b>Based Aircraft Itinerant Operations</b>	9,700	11,880	13,320	14,700
<b>Transient Aircraft Itinerant Operations</b>	6,410	6,630	6,900	7,180
<b>Local Aircraft Operations</b>	7,200	7,500	7,800	8,100
<b>Total Aircraft Operations</b>	23,310	26,010	28,020	29,980

#### 204. PROJECTED CRITICAL DESIGN AIRPLANES

This section is intended to project and define the more demanding, or “critical to airport design” airplane, or family grouping of airplanes, anticipated to use the airport on a regular basis. FAA has developed a Substantial Use Threshold to more technically define “regular basis”. This Threshold requires that critical

design airplanes perform at least 500 or more annual itinerant operations (composed of both landings and takeoffs) at the airport. The intent here is to discourage more significant amounts of airport facility expansion where such expansion will only benefit a relatively few airport users, and not prove to be cost effective.

With regard to the Williamsburg – Jamestown Aviation Service Area (and Airport), the current family grouping of critical airplane types is composed of various models of Twin-Engine Turboprop Airplanes, and Light Jet Airplanes. Representative types are:

- The Beechcraft King Air B200GT Twin-Engine Turboprop. This airplane has a Wing Span of 54.5 Feet, a Length of 43.8 Feet, and a Height of 14.8 Feet. With a Gross Weight of 12,500 Pounds, it offers a Normal Cruise Speed of 336 MPH, and has a Maximum Landing Weight Approach Speed of less than 121 Knots.



- The Cessna Citation CJ2 Twin-Engine Turbofan Jet. This airplane has a Wing Span of 49.8 Feet, a Length of 47.7 Feet, and a Height of 14 feet. With a Gross Weight of 12,500 Pounds, it offers a Normal Cruise Speed of 481 MPH, and has a Maximum Landing Weight Approach Speed of less than 121 Knots.



While the family grouping of critical airplane types is not anticipated to appreciably change in the future from what it is today, it is considered that one additional new airplane type should be added to the family.

As previously discussed in this Report, by most expert accounts, the emergence of the Very Light Jet (VLJ) is anticipated to represent a significant factor, influencing the mix of traffic at numerous community/business market area orientated general aviation airports in the US. As such, and as shown below, the Eclipse 500 VLJ is selected as the representative type to be added to the family grouping of critical airplane types.

- The Eclipse 500 Twin-Engine Turbofan VLJ. This airplane has a Wing Span of 37.9 Feet, a Length of 33.5 Feet, and a Height of 11 Feet. With a Gross Weight of 6,029 Pounds, it offers a Normal Cruise Speed of 426 MPH, and has a Maximum Landing Weight Approach Speed of less than 121 Knots.





With regard to Midsize and Large Cabin Business and Corporate Jet Aircraft, it is anticipated that some of the operators of these Aircraft will may continue to prefer to use the Newport News Williamsburg International Airport to accommodate their operations.

The Newport News Airport is well suited to accommodate operations by these larger Business and Corporate Aircraft, and offers: an FAA Air Traffic Control Tower for arrival/departure, sequencing and enhanced communications; precision instrument approaches for all weather operations; adequate runway length to reduce the need for enroute fuel stops during long haul length trips; and Fixed Base Operator (FBO) facilities with the equipment and resources necessary to handle/service these types of larger aircraft. Many corporate flight departments require the above items when selecting an airport.

In addition, (for the larger business/corporate jet operator), the optimum 30 minute driving time from the Newport News Williamsburg International Airport to the center of the Williamsburg – Jamestown Aviation Service area is considered to be quite reasonable. And for those operators of Midsize and Large Cabin Business and Corporate Jet Aircraft that originate or have ground destinations in the northern part of the Williamsburg – Jamestown Aviation Service area, it is noted that the runway length has been recently extended to 5,000 feet at the Middle Peninsula Regional Airport. Once this runway extension is accomplished along with other planned improvements, the Middle Peninsula Airport will be better able to serve larger Business and Corporate aircraft, and offer a somewhat more efficient driving time to the northern part of the Williamsburg – Jamestown Aviation Service Area.

With regard to the Newport News Williamsburg International Airport, it is further noted that this facility continues to expand its role as a major Commercial (airline) Service and Corporate Aviation Airport. However, this Airport is currently reaching available airside and landside capacities, and it is important that capacity be available to allow the Airport to serve its primary role.

It therefore becomes important that a stable general aviation airport facility be available within the Williamsburg – Jamestown Aviation Service Area to accommodate related Aviation Service Area demand. If this does not occur, it is anticipated that a large amount of Williamsburg – Jamestown Aviation Service Area demand will be shifted to the Newport News Williamsburg International Airport, further complicating capacity concerns at the Newport News Airport.

Alternatives to provide for a stable general aviation airport to accommodate Williamsburg – Jamestown Aviation Service Area demand will be investigated later in this Study.



**205. Airport Reference Code Selection**

As defined in FAA Advisory Circular 150/5300-13 (Change 12) titled “Airport Design”, the Airport Reference Code (ARC) is a coding system used to relate airport design criteria to the operational and physical characteristics of airplanes anticipated to operate at an airport. As shown in Table 2-9 and Table 2-10, the ARC is made up of: 1) Aircraft Approach Category (AAC), which is based on maximum landing weight approach speed; and 2) Airplane Design Group (ADG), which is based on both airplane wing span and tail height.

Table 2-9	
AIRCRAFT APPROACH CATEGORY	
Category	Speed
A	<91 knots
B	91 knots - <121 knots
C	121 knots - <141 knots
D	141 knots - <166 knots
E	166 knots or more

Table 2-10		
AIRPLANE DESIGN GROUP		
Group #	Tail Height	Wingspan (feet)
I	<20	<49
II	20 - <30	49 - <79
III	30 - <45	79 - <118
IV	45 - <60	118 - <171
V	60 - <66	171 - <214
VI	66 - <80	214 - <262

Based on the Projected Family Grouping of Critical Airplane Types defined above, and the criteria contained in Table 2-9 and Table 2-10, an Airport Reference Code (ARC) of B-II is selected as most appropriate and applicable to the Williamsburg – Jamestown Aviation Service Area (and Airport).