

A. GENERAL OVERVIEW

The Federal Aviation Administration (FAA) created the airport master planning process to provide airport sponsors with a means to conduct systematic and comprehensive evaluations of their capacity to meet existing and future aviation demand at their facilities. The Airport Master Plan, with its Airport Layout Plan (ALP) drawing set, is the centerpiece of the airport planning process at the local level since it presents anticipated infrastructure development needs of an airport during a 20-year planning horizon. Updates to adopted plans are usually necessary in order for an airport sponsor to respond to changing economic or operational realities as well as evolving environmental, technical and/or political conditions. It is typical for a general aviation airport sponsor to update their plan every ten years or at other appropriate times when aircraft operational or airfield conditions warrant. Several factors influence the development of airport infrastructure to achieve maximum aircraft utilization including:

- Meeting FAA airfield design standards
- Addressing growth in aviation activity
- Conforming to aviation safety, security and/or environmental guidelines
- Reconstructing existing infrastructure that is beyond its useful life
- Upgrading existing infrastructure to accommodate the introduction of more demanding aircraft

As more fully described in the following sections, a series of analyses and evaluations are utilized in the airport master planning process to fully address the justification for investment of federal, state, local and private funds in the development of airport facilities and infrastructure including:

- Inventory of Existing Facilities
- Forecasts of Aviation Demand
- Demand/Capacity Analysis and Determination of Facility Requirements



- Alternative Plan Concepts
- Environmental Overview
- Financial Plan
- Airport Development Plans

B. THE PLANNING PROCESS

The purpose of the Master Plan and ALP for the Chesterfield County Airport (FCI) is to provide the County with useful, understandable information and guidance in order to develop and maintain a safe and efficient airport. The ALP provides the Federal Aviation Administration (FAA), the Virginia Department of Aviation (DOAV), Chesterfield County and other interested stakeholders with information concerning planned development at FCI.

This Master Plan Update presents the results of data collection, forecasts, an alternatives analysis and recommendations for the continued development of FCI through the year 2027. The previous Master Plan Update was published in 1994. Since that time, many FAA design standards have changed and aircraft operations have increased significantly which warrant an update to the plan.

The Update is developed in conformance with FAA guidelines for conducting airport master plans and was financed jointly by the FAA, DOAV, and Chesterfield County. It concentrates on assessing existing conditions as well as future needs of FCI. This assessment, along with an inventory of existing airport facilities and operations (Chapter Two), serves as the foundation for analyzing future needs against the capacity of existing infrastructure to meet these needs. The Forecast of Aviation Demand (Chapter Three) examines the anticipated growth in aviation activity at FCI during the 20-year planning period while Facility Requirements (Chapter Four) compares existing facilities and capacities against the forecasted demand.

The Environmental Overview (Chapter Five) includes a report on all known environmental issues on airport property as well as on adjacent land.



Chapter Six, Alternative Development Concepts, presents three alternative concepts to accommodate the forecasted demand. Advantages and disadvantages, land requirements, and order of magnitude cost estimates for each alternative are presented along with a recommendation for selection of a preferred alternative for development.

The Airport Layout Plan (Chapter Seven) presents and discusses the ALP drawing set. These drawings graphically represent the existing conditions along with all planned airport improvements for FCI, including the preferred alternative for development, in the short term (0-5 years), intermediate term (5-10 years) and long-term (10-20 years). The plan set satisfies federal guidelines for airport development identified in the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5300-13, "Airport Design," including Changes 1-13.

The following is a list of sheets provided as part of the Airport Layout Plan (ALP) drawing set, which represent existing conditions along with all planned airport improvements for the 20-year (2008-2027) planning period:

- Cover Sheet
- Existing Airport Layout Drawing
- Airport Layout Plan (ALP)
- Terminal Area Plan (TAP)
- Airport Airspace Drawing
- Inner Portions of Approach Space (2 Sheets)
- Existing Land Use Map
- Future Land Use Map
- Airport Property Map (APM – formerly Exhibit A)

Chapter Eight, Cost Estimates, presents a recommended phased capital development program and provides a schedule of anticipated potential funding allocations from federal, state, local, and private sources to complete the same.



In order to assist the reader in fully understanding the overall context of this planning document, a glossary of common aviation related terms is provided in **Appendix A**.

C. GOALS AND OBJECTIVES

As previously stated, the goal of this Master Plan Update is to provide the framework for future airport development in order to satisfy aviation demand in a cost effective feasible manner, while at the same time weighing all potential environmental and socioeconomic issues of the greater Chesterfield County region. To this end, the primary goal of this update is to examine the feasibility of providing a runway to accommodate the family of medium sized business jets currently based at the airport, represented by the Hawker 800 and Challenger 604. The Update will evaluate the runway length and pavement strength required to serve these critical aircraft based on established FAA design criteria. Consideration will also be given to the alternative development concept that will result in a preferred operational alternative. The preferred operational alternative will then become the basis for the ALP Update.

Beyond providing a runway to accommodate the critical aircraft, the Master Plan Update is expected to:

- Recommend a land acquisition program that will guide the County in its runway extension process and accommodate demand for the 20-year planning period.
- Analyze existing and potential penetrations to FAR Part 77 surfaces that may present a hazard to air navigation, and recommend actions to mitigate any obstructions to ensure the lowest possible safe instrument approach minimums for FCI.
- Recommend navigational aid (NAVAID) improvements and/or additional instrument approach procedures to better accommodate aircraft utilizing FCI during periods of reduced visibility.



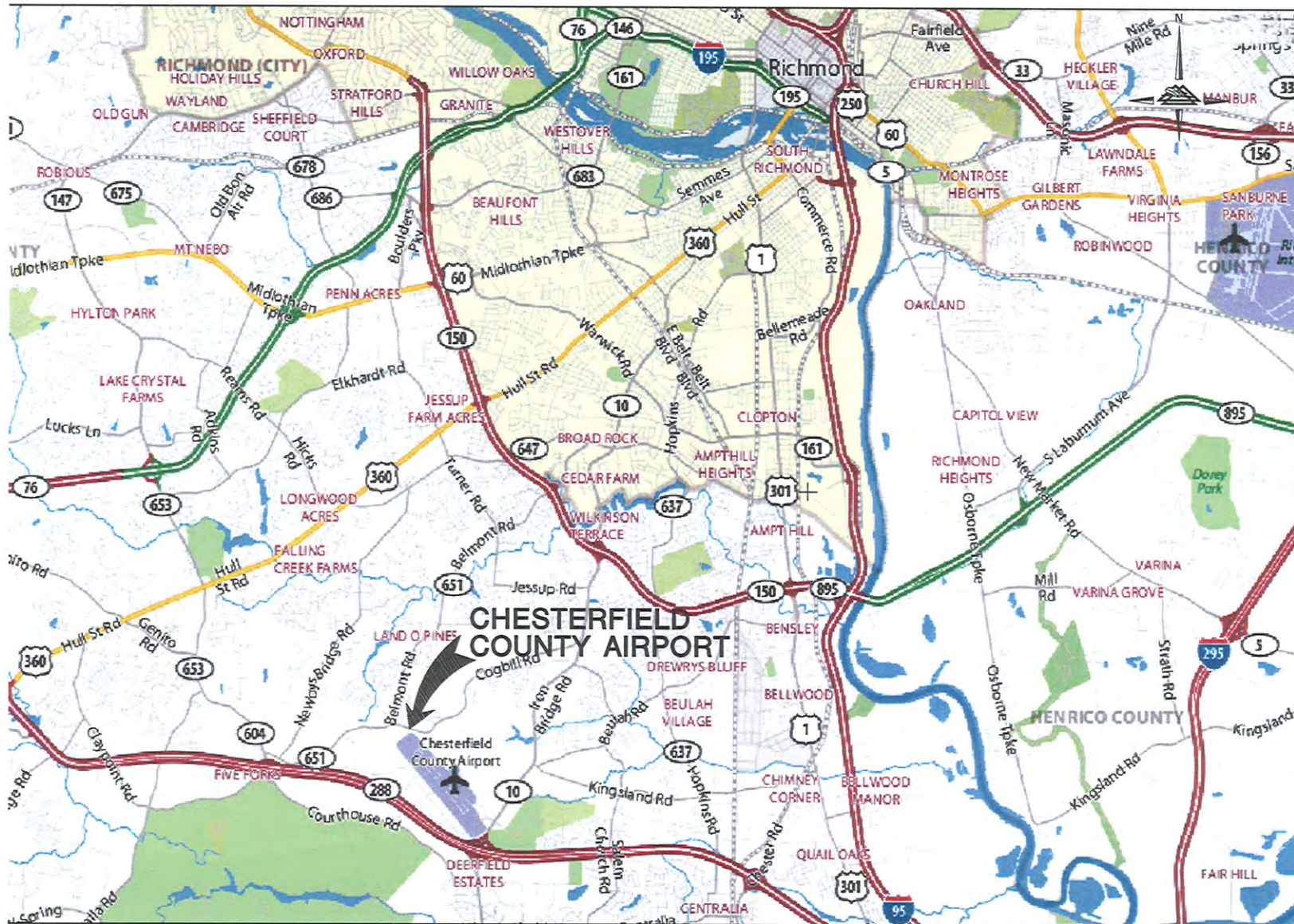
- Evaluate alternatives for development of additional hangar facilities during the 20-year planning period.
- Evaluate the need for an Air Traffic Control Tower (ATCT) and, if warranted, conduct a preliminary site analysis for its location.
- Evaluate the feasibility/need to construct both parallel and crosswind runways
- Evaluate surface access to the airport.
- Conduct a terminal area analysis.
- Evaluate the current non-standard separation between the runway and taxiway.

D. GENERAL INFORMATION

1. Airport Location & Management

FCI is a general aviation reliever airport located approximately one mile north of Chesterfield, Virginia. Chesterfield is the county seat of Chesterfield County and is situated approximately 14 miles south of Richmond, Virginia. Access to the airport is via State Route 10 (Ironbridge Road) to Whitepine Road, then to Airfield Drive. Principal access to FCI from the Richmond Area is via Interstate 95 and State Route 288. Norfolk and Tidewater Virginia are located approximately 90 miles southeast of the airport via Interstate 64 while Washington, D.C. is located approximately 120 miles to the north, via Interstate 95. **Exhibit 1-1**, Airport Vicinity Map, identifies the immediate vicinity around the airport, while **Exhibit 1-2**, Airport Location Map, locates the airport relative to Chesterfield County.





VICINITY MAP CHESTERFIELD COUNTY AIRPORT

EXHIBIT
1-1



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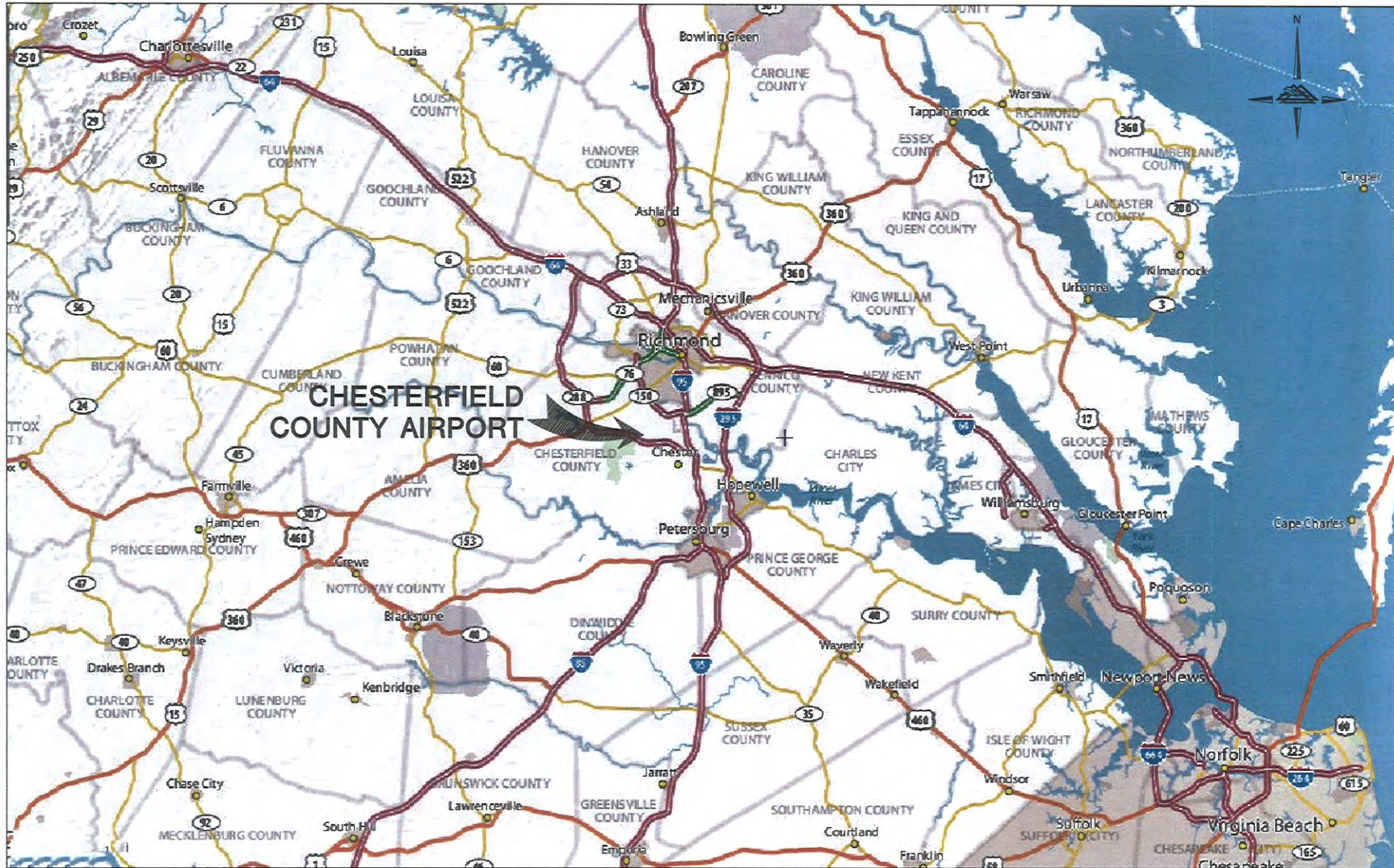
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OCTOBER 2010



CHESTERFIELD COUNTY AIRPORT

LOCATION MAP CHESTERFIELD COUNTY AIRPORT

EXHIBIT
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FCI is owned and operated by the County of Chesterfield, Virginia. The County operates as a County Administrator form of government and is governed by a five member Board of Supervisors. A full-time airport manager is appointed by the County Administrator to oversee the day-to-day operations of the facility. A staff of an additional four full time employees and two part time employees provide overall administrative, maintenance, and service functions for FCI.

FCI also has an Airport Advisory Board to advise the Board of Supervisors on matters pertaining to the airport. The board consists of six members from each magisterial district and one Ex Officio member from the County. Members are appointed by the Board of Supervisors and serve three-year terms.

2. Airport History

The current location of the Chesterfield County Airport was determined through a site selection study completed in 1969. Construction of the airport began in 1972 after completion and approval of an Environmental Impact Assessment Report (EIAR) while the airport was officially dedicated in October 1973. The facilities developed as part of the original construction project included:

- Acquisition of 556 acres of land
- Construction of a 3,700' x 75' runway (Runway 15-33)
- Construction of 5,135' x 40' wide parallel and connecting taxiways
- Construction of a 28,133 SY aircraft apron area
- Installation of Medium Intensity Runway Lights (MIRLs)
- Installation of Medium Intensity Taxiway Lights (MITLs)
- Construction of the airport access road
- Pavement marking and installation of a wind cone, 36" rotating beacon, segmented circle, and airport fencing
- Installation of Visual Approach Slope Indicators (VASI-2s) and Runway End Identification Lights (REILs) on both runway ends



- Construction of a fuel farm service road

Since the airport was originally completed in 1973, a number of projects have been accomplished including the construction of hangar facilities, a terminal building, automobile parking areas, and installation of navigational aids. Moreover, the runway has been extended on two (2) occasions to meet the growing needs of the aircraft using FCI. In 1974, the runway and parallel taxiway were extended 700 feet to the south to provide a total runway length of 4,400 feet while in 1983 the runway was extended to its current length of 5,500 feet. Federal and state grant in aid funding have played a pivotal role in the development of FCI. A detailed list of various FAA/DOAV grants, including amounts, dates, and a brief description of each project, is provided in **Appendix B**.

3. Airport Role

The National Plan of Integrated Airport Systems (NPIAS) is a planning document utilized by the FAA to identify the nation's airport needs over a 10-year planning period as well as to identify the service level and role of all airports in the federal airport system. Likewise, the Virginia Air Transportation System Plan (VATSP) identifies the state's airport needs. FCI is identified by both NPIAS and VATSP as a reliever airport.

It is important to understand that airports contained in the NPIAS are categorized by their role. The role reflects one of five basic airport service levels which describe the type of service that the airport is expected to provide to the community. The service level also represents funding categories for the distribution of federal aid. The five basic service levels include:

1. Commercial Service – Primary
2. Commercial Service – Non-primary
3. Commercial Service which also serves as a reliever
4. Reliever Airport
5. General Aviation Airport



The VATSP “identifies airport function, primary economic role, optimal Airport Reference Code (ARC), and to a lesser extent, funding category eligibility.” The VATSP classifies airports in the following categories:

1. Commercial Service (CS)
2. Reliever (RL)
3. General Aviation Regional (GR)
4. General Aviation Community (GC)
5. Local Service (LO)

In addition to defining the role of the airport, the FAA has a system to correlate airport design criteria to the operating (approach speed) and physical (wingspan) characteristics of the most demanding aircraft currently using or expected to use an airport with greater than 500 annual operations. This airport classification system is contained in FAA Advisory Circular (AC) 150/5300-13, Airport Design. The Airport Reference Code (ARC) system is comprised of two components. The first component, depicted by a letter (A-E), designates the aircraft approach category, determined by approach speed. The second component, depicted by a roman numeral (I-VI), designates the airplane design group, determined by the wingspan. **Table 1-1** identifies the Aircraft Approach Categories and Aircraft Design Groups that have been established by the FAA.

Table 1-1
Approach Categories and Design Groups

Approach Category	Aircraft Design Group
A - Less than 90 knots	I - Wing span less than 48 feet
B - 91 to 120 knots	II - Wing span 49 feet to 78 feet
C - 121 to 140 knots	III - Wing span 79 feet to 117 feet
D - 141 to 165 knots	IV - Wing span 118 feet 170 feet
E - Greater than 165 knots	V - Wing span 171 feet to 196 feet
	VI - Wing span 197 feet to 262 feet

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

Because of the aircraft currently utilizing and based at FCI, the NPIAS and the VATSP categorize this facility as a reliever airport to Richmond International Airport in the general aviation category. The airport reference code as listed on the currently approved



Airport Layout Plan (ALP) is C-II, and the critical aircraft is noted as the Gulfstream III. Examples of aircraft that may typically operate at a C-II airport and their respective airport reference code classifications are listed in **Table 1-2**.

Table 1-2
Chesterfield County Airport
Typical Aircraft

Aircraft	ARC	Approach Speed (Knots)	Wing Span (ft.)	Max Takeoff Weight (lbs.)
Cessna 150	A-I	55	33	1,600
Cessna 172	A-I	61	36	2,658
Beech Bonanza F33A	A-I	70	34	3,400
Piper Navajo	B-I	100	41	6,200
Beech Baron 58P	B-I	101	38	6,200
Cessna Citation I	B-I	108	47	11,850
Raytheon Beechjet	B-I	105	44	16,100
Cessna Conquest 441	B-II	100	50	9,925
Beech King Air B200	B-II	103	55	12,500
Citation V	B-II	98	52	15,900
Dassault Falcon 20	B-II	107	54	28,660
HS-125 Series 700	C-I	125	47	24,200
Cessna 650 Citation	C-II	131	54	21,000
Hawker 800	C-II	127	52	28,000
Bombardier CL-600	C-II	125	62	41,250
Challenger 604	C-II	125	64	47,600
Grumman G-III*	C-II	136	78	68,700
Gates Learjet 35	D-I	143	40	18,300
Grumman G-IV	D-II	145	78	71,780

Note: * denotes critical aircraft from previously approved Master Plan (1994)
 Sources: FAA AC 150/5300-13, Airport Design
 Delta Airport Consultants, Inc.

In summary, FCI is a thriving general aviation reliever airport serving a broad business and personal aviation community as evidenced by the fact that, as reported to DOAV in January 2009, 130 aircraft are currently based at the airport and it accommodates approximately 82,500 civilian and military flight operations airport each year. These operations include single-engine and twin-engine aircraft used for business, pleasure and flight training as well as significant corporate jet traffic.

