2.0 FORECASTS OF AVIATION DEMAND

Aviation forecasts represent a key component in the master planning process. Based aircraft forecasts largely establish the need for aircraft storage space (e.g., hangars) and other landside developments at an airport, while operations forecasts help to determine the need for airside and landside improvements.

Forecasts were developed for based aircraft and operations at Hartford-Brainard Airport (HFD). The forecasts are presented in five-year intervals, with a base year of 2010 through to year 2030. This chapter describes the forecast methodologies and results. Note that the forecasts are based on an unconstrained growth scenario, which assumes that the airport will provide adequate facilities to accommodate growth, and that potential obstacles to growth (e.g., airport property, wetlands, land use compatibility, lack of public and private funding) can be overcome. This information is provided in the following sections:

- Airport Role
- Existing Design Aircraft & Operations
- Forecasting Methods
- Recommended Forecasts
- Derivative Forecasts
- Scenarios Forecasts
- Forecast Summary
- Future Design Aircraft

2.1 Airport Role

HFD serves corporate, public safety, and charter aircraft operating for business, training, law enforcement, medical evacuation, and recreational/personal purposes. HFD is classified as a "Reliever" facility and is included in the National Plan of Integrated Airport Systems (NPIAS). HFD relieves the commercial activity at Bradley International Airport (BDL) of the small general aviation (GA) traffic better served at HFD. According to the 2010 Strategic Plan, BDL is focusing on improving commercial service to the Hartford community and increasing cargo opportunities. As GA does not fit within BDL's long-term strategic goals, HFD needs to be prepared to accommodate these business and GA aircraft with the amenities they need and desire.

2.2 Existing Design Aircraft & Operations

Many airport facility requirements are predicated on the level of activity and the largest or most demanding aircraft forecast to regularly use the airport (at least 500 itinerant operations), which is referred to as the "design aircraft.", see the FAA Airport Improvement Handbook, Order 5100.38C and FAA Advisory Circular 150/5325-4B, Runway Length Requirements. Thus, the future design aircraft

is defined at the end of this chapter.

Based on operation data recorded at HFD, the existing design aircraft for the Airport is a "light jet" such as the Cessna CJ4. Light jet is an informal industry term that refers to corporate jets up to 20,000 lbs. takeoff weight, 6 to 8 passengers, and designed for use at smaller airports. The Cessna Citation fleet is by far the largest manufacturer of light jets (e.g., CJ series, Bravo/Encore, etc.). Other aircraft examples in this category include the Hawker Beechcraft 400 and a recent newcomer the Embraer Phenom 300. As discussed in Chapter 3, these aircraft are classified by FAA into Airport Reference Code (ARC) B-II.

Through discussions with airport management and tenants, site visits, and review of the FAA's Airport Master Record (i.e., SF 5010 Form), it is concluded that are a total of 154 based aircraft and 79,618 annual operations at HFD in 2011. The fleet mix consists of 137 single-engine, 11 multi-engine, 3 turboprops, 3 jets, and 3 helicopters. This information was used in the forecasts as the 2010 based year data.

2.3 Forecasting Methods

At HFD numerous approaches were investigated to forecast airport activity levels. The most common approaches generally incorporate regional population or economic conditions, industry trends, and past airport activity levels. The following approaches were applied for HFD:

- **Population (Regression) Forecasting Method** – Uses the population forecasts of Hartford County to develop the growth rates of HFD's based aircraft and operations.
- **CSASP Forecasting Method** – Uses the Connecticut Statewide Airport System Plan (CSASP) growth rate factors for based aircraft and operations at HFD.
- **FAA Aerospace Forecasting Method** – Uses the Federal Aviation Administration's (FAA) nationwide growth rates for Active Fleet and Hours Flown, which is based on both economic and industry trends.
- **Terminal Area Forecast Method** – Incorporates the current FAA Terminal Area Forecast (TAF) for HFD, which is based on economic and historical trends at the airports.

2.3.1 Population Forecasting Method

Population is a key indicator of based aircraft and operations levels at GA airports. In general, as the population of an airport's service area increases or decreases, based aircraft and operations levels typically increase or decrease correspondingly. Table 2-1 shows the projected population forecast for Hartford County, and the State of Connecticut based on the Connecticut State Data Center.

The population forecasts, Table 2-1, were adjusted since the US Census Bureau's midyear estimates from 2001-2009 were tracking lower than the population recorded by the US Census in 2010. When 2009 and 2010 are examined, the increase based on the census figures shows an appreciable difference (increase); hence the estimates were running lower during the decade until

the 2010 Census was enumerated. This in turn skews the population projections slightly. The population forecasts were "adjusted" holding the growth rates to those contained in the population projections, and then projected from the actual 2010 Census enumeration.

Table 2-1 – Population Forecasts		
Area	**Hartford County**	**Connecticut**
2010	894,014	3,576,343
2015	896,341	3,666,650
2020	899,482	3,759,238
2025	904,802	3,854,163
2030	911,517	3,951,486
Change	2%	10%
AAGR	Variable by Year	0.50%

The population regression used the historic population and projections for Hartford County as shown in Table 2-2. Socioeconomic regression is based upon an assumed causal relationship between population, income, or employment and aviation activity in a particular area. To obtain this projection of demand, socioeconomic data are related via regression analysis to aviation activity. The resulting set of regression equations, coupled with independent projections of future socioeconomic data, produces a projection of aviation activity. Table 2-3 shows the results of this methodology for the based aircraft and annual operations at HFD.

Table 2-2 - Historical Population for Regression	
Year	**Population**
2001	861,183
2002	864,497
2003	868,343
2004	868,109
2005	870,039
2006	871,743
2007	874,107
2008	876,319
2009	879,835
2010	894,014
Source: CT State Data Center	

Table 2-3 - Population Forecasting Method		
Year	**Based Aircraft**	**Annual Operations**
2010	154	79,618
2015	156	80,652
2020	157	81,169
2025	161	83,237
2030	167	86,339
Change	**8%**	**8%**

2.3.2 CSASP Forecasting Method

The 2006 CSASP was developed by CTDOT in an effort "*to provide a comprehensive review of the current state aviation system, to support the continued operation and maintenance of Connecticut's airports, and to recommend modifications to the airport system to meet existing and projected aviation needs."*

The Average Annual Growth Rates (AAGR) used in the CSASP are based on a statewide forecast of registered aircraft and population. For the CSASP a based year of 2004 was used, with forecasts of based aircraft and operations to the year 2025. The growth rate was then extrapolated to 2030 for this study. The CSASP's AAGR of 0.85 percent for based aircraft and one percent for operations were applied to the updated activity data. The CSASP forecasts do not reflect the economic downturn in the economy that has occurred since 2008, and thus may be considered aggressive or optimistic. Table 2-4 displays the original forecast, which forecast 191 based aircraft in 2010. As there were only 154 based aircraft in 2010, the forecast data has been updated and shown in Table 2-5.

Table 2-4 - CSASP Forecasting Method		
Year	**Based Aircraft**	**Annual Operations**
2010	191	110,000
2015	199	119,000
2020	203	120,100
2025	208	137,800
2030	217	144,750
AAGR	**0.85%**	**1%**
Change	**14%**	**32%**

Table 2-5 - Updated CSASP Forecasting Method		
Year	**Based Aircraft**	**Annual Operations**
2010	154	79,618
2015	161	83,679
2020	168	87,948
2025	175	92,434
2030	182	97,149
AAGR	**0.85%**	**1%**
Change	**18%**	**22%**

As shown in Table 2-5, total based aircraft are forecast to increase from 154 in 2010 to 182 by 2030, with total operations increasing to approximately 97,149 by 2030.

2.3.3 FAA Aerospace Forecasting Method

The FAA publishes nationwide forecasts for GA activity that provides an AAGR by aircraft type by year. Their most recent publication is *Aerospace Forecasts Fiscal Years 2011-2031*. Thus, depending on the period of time between 2011 and 2031, a different AAGR was utilized. As discussed below, the variable AAGR were applied to existing based aircraft and operations levels at HFD, and applied through 2030 to determine the forecasts summarized in Table 2-6.

Table 2-6 - FAA Aerospace Forecasting Method		
Year	**Based Aircraft**	**Annual Operations**
2010	154	79,618
2015	152	78,138
2020	152	76,769
2025	154	76,657
2030	157	75,869
Change	**2%**	**-5%**

Based Aircraft – The based aircraft forecasts were developed using the FAA General Aviation Active Fleet Forecasts. The FAA forecasts the total GA aircraft fleet to increase at an AAGR of 0.9 percent nationwide (from 2010 to 2031), with the greatest growth forecast for rotorcraft, turbine, and light sport aircraft, and the lowest growth forecast for single- and multi-engine piston aircraft. Piston aircraft, the most common type based at HFD, were forecast as negative growth of -0.6 percent from 2010 to 2020 and 0.2 percent growth from 2010 to 2031. Under this method, the HFD based aircraft forecasts were developed using an AAGR of 0 percent for single- and multi-engine piston aircraft, but with positive growth rates for the other aircraft types. As such, the resulting based aircraft forecast increases slowly using this approach.

Operations – The operations forecasts were developed using the *FAA General Aviation Hours Flown Forecasts*. The FAA forecasts total GA hours flown to increase at an AAGR of 2.2

percent nationwide (from 2010 to 2031), with the greatest growth forecast for jet, rotorcraft, and light sport aircraft, and a negative growth forecast for single engine and multi-engine piston aircraft. While the overall growth was forecast at 2.2 percent, the large number of single and multi-engine aircraft at HFD produced an overall negative growth (i.e., a decline) in annual operations.

2.3.4 Terminal Area Forecasting

As shown in Table 2-7, the FAA publishes nationwide Terminal Area Forecasts (TAF) for individual airport historical and forecasted operational activity and based aircraft. This method relies upon the historical national share of activity as well as additional trends that affect the specific airport. At the time of this writing, the FAA is updating the AAGR for GA airports for both operations and based aircraft for the most recent forecasts. At this time, the TAF for HFD has not been updated to fully reflect the current conditions for both operations and based aircraft, but instead is based on conditions prior to the economic recession. While Table 2-7 displays the TAF forecasts utilizing the published growth rates, it should not be used as the main source of forecast data for this study.

Table 2-7 - FAA Terminal Area Forecasts (TAF) for HFD

	Based Aircraft	**Annual Operations**
2010	154	79,618
2015	170	76,986
2020	188	74,442
2025	208	71,981
2030	231	69,602
Change	**50%**	**-13%**
AAGR	**2.04%**	**-0.67%**

2.3.5 Summary & Evaluation of Forecasting Methods

As shown in Table 2-8, of the four forecasting methods, the CSASP forecasting method shows the greatest growth in based aircraft and operations. The FAA Aerospace Forecast method is the most conservative, showing little overall change.

Table 2-8 - Summary of Forecasting Methods								
	1. Population		**2. CSASP**		**3. FAA Aerospace**		**4. TAF**	
Year	**Based**	**Operations**	**Based**	**Operations**	**Based**	**Operations**	**Based**	**Operations**
2010	154	79,618	154	79,618	154	79,618	154	79,618
2015	156	80,652	161	83,679	152	78,138	170	76,986
2020	157	81,169	168	87,948	152	76,769	188	74,442
2025	161	83,237	175	92,434	154	76,657	208	71,981
2030	167	86,339	182	97,149	157	75,869	231	69,602
Change	**8%**	**8%**	**18%**	**22%**	**2%**	**-5%**	**50%**	**-13%**

2.4 Recommended Forecasts

Each of the four forecasting methods in Table 2-8 has a reasonable justification for its use, but also has limitations. The population method although rooted in a statistical analysis discounts the City of Hartford as a major economic center in the state. The CSASP projections did not account for the severe recession of 2008-2009 which significantly slowed aviation demand and development. The FAA Aerospace method as a macro-model nationally, reflects the economic conditions of the country and consequently tempered growth rates that produced lower forecasts for general aviation. As discussed above, while the TAF forecast reflects more positive expectation for economic recovery and allows some flexibility for planning airport improvements, it may not be basing its growth rates on the most current conditions for HFD.

A review of all four forecasting methods reflects an averaging of the national and local economic conditions and presents a situation that more reasonably reflect the future expectations for the economy and the aviation industry as a whole. Table 2-9 shows the recommended forecast for HFD. There is a growth of 14 aircraft with an increase of 6,000 annual operations by 2030.

Table 2-9 - Recommended Forecast		
Year	**Based Aircraft**	**Annual Operations**
2010	154	79,600
2015	157	80,700
2020	159	81,800
2025	163	83,700
2030	168	85,600
Change	**9%**	**8%**
Note: Operations rounded		

In addition, two scenarios are examined in Section 2.6 that could impact operational activity in the future, a runway extension and the closing of privately-owned airports within the service area of HFD.

Operations Per Based Aircraft (OPBA) is useful in determining the total number of annual operations at an airport. With this methodology, the projected number of based aircraft is multiplied by an appropriate ratio to yield the projected total annual general aviation aircraft operations. This measure accounts for operations performed by the based aircraft (local operations) and itinerant operations. It is typical for an OPBA to decrease as more aircraft operate at an airport due to increased activity. Table 2-10 displays the OPBA for the recommended forecast listed in Table 2-9.

Table 2-10 - Operations Per Based Aircraft Ratio	
2010	517
2015	514
2020	514
2025	513
2030	510

2.5 Derivative Forecasts

The derivative forecasts help to determine requirements for facilities and services at the airport. The derivative forecasts for HFD include:

- Fleet Mix
- Local and Itinerant Operations
- Peak Period Operations
    - Peak Month
    - Average Peak Day
    - Peak Hour
- General Aviation Enplaned Passengers

2.5.1 Fleet Mix

In the forecasting process, the based aircraft fleet mix is used to determine operational fleet forecasts. The fleet mix forecasting process typically involves examining historic records including the FAA 5010 forms, airport and FBO records and visual inspections. The based aircraft fleet can then be projected using regional and national trends of active fleet mix for comparison purposes.

For this study, the CSASP and FAA Aerospace forecasts were examined to determine the GA aircraft fleet trends over the 20-year planning period. Over time, assuming that airside and landside improvements are conducted, it is expected that higher performing aircraft will have an increased presence at HFD and become a larger percentage of the overall fleet. This is partially due to the development of the Very Light Jet (VLJ) and the increased use of turbine aircraft.

VLJs were designed to operate at airports with runways as short as 3,000 feet with a non-precision instrument approach and availability of Jet-A fuel. The clientele most likely to utilize a VLJ tend to be business oriented and expect a certain level of service at each airport they visit. HFD should ensure they provide the level of services VLJ owners are seeking should they decide to base their aircraft there.

Variations of VLJs arrived in the GA fleet after several years of development. Past orders for the Cessna Mustang, Phenom100, and the Eclipse Jet have demonstrated that a market does exist for the mission capabilities and cost efficiency that these aircraft have been designed to provide. As the current market downturn has affected all aspects of the economy including the VLJ industry (i.e., the Eclipse jet is no longer in production).

While not as strong as before, the existing backlog of VLJ category aircraft orders demonstrates that this class of aircraft is still viable. The FAA has stated in their Aerospace Forecast Fiscal Years 2010-2030: "The current forecast calls for 440 units to join the fleet over the next three years. With respect to other turbine aircraft the FAA forecasts suggest turboprop and jet aircraft as having the highest growth rates through 2030 compare to single and multi-engine piston aircraft. The average annual growth rate for turbine aircraft is 3.2 percent through 2030.

Table 2-11 shows the forecasts fleet mix for HFD.

Table 2-11 - Fleet Mix

Year	Single Engine	Multi-Engine	Jet/Turboprop	Helicopter	Total
2010	136	11	5	2	154
2015	138	11	5	3	157
2020	139	11	6	3	159
2025	141	12	7	3	163
2030	143	13	8	4	168

2.5.2 Local and Itinerant Operations

Local operations are performed by aircraft that operate within the traffic pattern or take-off from the airport and stay within 20 miles of the airport. Itinerant operations are performed by aircraft arriving from (or departing to) an airport outside of the local area. Discussions with airport management and tenants revealed that the operations at HFD are fairly similar for both itinerant and local. Additionally, a review of FAA data for the past years showed an almost equal number of annual operations for both itinerant and local. Thus, a 50 percent local to 50 percent itinerant operational ratio was utilized in this study and shown in Table 2-12.

Table 2-12 - Local vs. Itinerant			
	Operations		
Year	Total	Local	Itinerant
2010	79,600	39,800	39,800
2015	80,700	40,350	40,350
2020	81,800	40,900	40,900
2025	83,700	41,850	41,850
2030	85,600	42,800	42,800
Note: 50% Local - 50% Itinerant			

2.4.3 Peak Period Operations

Peak period operations indicate the amount of activity that occurs during the busy times of the year and busy times of the day. Peak period operations can be used to determine the recommended size of administration/terminal buildings, itinerant apron spaces, and automobile parking lots. Peak month, day, and hour were forecast as follows:

- **Peak Month** - The peak month is the time of year where activity levels are higher than average month. Peak month operations were calculated by reviewing the last three complete years of ATCT counts for HFD, 2008-2010. Over that period the peak month average was 10.5 percent of annual operations. It is interesting to note that the peak month was different in each of the three years. See Table 2-13.

Table 2-13 - Peak Month Operations	
Year	Operations
2010	8,358
2015	8,474
2020	8,589
2025	8,789
2030	8,988

- **Average Peak Day –** The average peak day operations are defined as the average day during the peak month. It is calculated by dividing the peak month by 30**.** See Table 2-14.

Table 2-14 - Peak Day Operations	
Year	**Operations**
2010	279
2015	282
2020	286
2025	293
2030	300

- **Peak Hour Operations** – The hour during which most activity occurs on an average day. Total peak hour operations generally equate between 12 and 20 percent of the average day total operations. HFD's peak hour operations were calculated as 15 percent of the average day total operations. See Table 2-15.

Table 2-15 - Peak Hour Operations	
Year	**Operations**
2010	42
2015	42
2020	43
2025	44
2030	45

2.5.4 General Aviation Enplaned Passengers

Forecasts of annual general aviation enplaned passengers play an important role in determining such landside facilities as the general aviation terminal building sizes and the amount of automobile parking required. To forecast general aviation enplaned passengers, an aircraft occupancy rate is typically multiplied by the number of itinerant departures from the airport. The Aircraft Owners and Pilots Association (AOPA) estimate that an average of 2.5 passengers per general aviation departure is a reasonable estimate of GA aircraft occupancy. As shown in Table 2-15, this factor was applied to forecast itinerant departures. General aviation pilots and passengers include those traveling for all purposes including corporate/business, charter, air taxi, and other itinerant departures. Scheduled commercial airline departures do not apply for HFD.

Table 2-16 - Enplaned Passengers			
	Operations		
Year	**Total**	**Departures**	**PAX**
2010	79,600	39,800	99,500
2015	80,700	40,350	100,875
2020	81,800	40,900	102,250
2025	83,700	41,850	104,625
2030	85,600	42,800	107,000
PAX: Enplanements			

2.6 Scenario Forecasts

In preparing aviation forecasts, local conditions or events can influence the forecasts of aviation demand at an airport. To complete the evaluation of aviation demand, two different scenarios were evaluated to determine their potential impact on HFD. The first is a 583-foot extension of the runway to reach 5,000 feet and the second is the possible closure of privately-owned airports within the service area of HFD. In each instance, the scenario would play a significant role in changing the aircraft fleet and the number of based aircraft at HFD. This review allows the airport to assess the development implications to the airport were the scenario to occur.

2.6.1 Scenario 1: Extension of Runway to 5,000'

According to aircraft manufacturer operational data, many light jets are designed to operate from runways shorter than 4,400 feet, including each of the jets discussed above. Nevertheless, most light jet operators in the Capital Region use Bradley International Airport (BDL) in lieu of HFD for three basic reasons. First, insurance underwriters for corporate jets typically prefer a 5,000 foot or greater runway length for safety purposes, which avoids higher premiums or reduced coverage. There are many corporate jets that may therefore avoid HFD due to a runway length of only 4,417 feet.

Second, air charter operators (that fly under FAR Part 135) have additional runway length requirements for safety reasons. For example, every corporate jet aircraft has certain runway length requirement for takeoff, which varies based on the passenger and fuel load and meteorological conditions (i.e., takeoff run distance). When operating Part 135, the runway must also be long enough for the aircraft to accelerate to takeoff speed, decelerate, and stop prior to the end of the runway (i.e., accelerate to stop distance). This required length is always longer then the takeoff run length.

A third reason for favoring BDL over HFD is the available facilities. BDL has precision instrument approaches, a 24-hour control tower, as well as more choices for aircraft services and maintenance. BDL is a commercial service airport, 12 nautical miles (NM) northwest, in Windsor Locks (15 miles from downtown Hartford). If facilities were improved at HFD, some jet operators may prefer to fly in and out of HFD due to its proximity to downtown Hartford, less

than 10 minutes away. HFD is also more convenient to other locations including East Hartford, West Hartford, Manchester, and locations to the south such a New Britain.

Additionally, a longer runway at HFD could relieve BDL of the GA traffic and based aircraft to focus on long-term strategic goals of expanding commercial airline and air cargo service. It is anticipated that a runway extension to 5,000 feet at HFD would increase the based jet forecast from 8 to 12 (50 percent increase), as shown in Table 2-17. There would also be a corresponding increase in aircraft operations to reflect the new based jets over the 20 year period. The scenario assumptions are based on the following:

- There are corporate jets at BDL number whose characteristics would be within the recommended ARC of B-II for HFD.

- With the longer runway and closer proximity to Hartford corporate jet owners would relocate to HFD for the convenience of reducing their driving time to downtown Hartford.

- HFD would maintain adequate navigational aids and other facilities and amenities to serve jet aircraft.

- The OPBA was held constant with the Recommended Forecast, as shown in Table 2-10, to include operations from the increased number of both based and itinerant jets. This is comparable to an estimated 1,000 additional annual itinerant operations that would operate out of HFD instead of BDL in 2030. Under this scenario the additional based aircraft and operations are all assumed to be jets.

Table 2-17 - Runway Extension Scenario

Year	Recommended Forecast		Scenario Forecast	
	Based Aircraft	**Annual Operations**	**Based Aircraft**	**Annual Operations**
2010	154	79,600	154	79,600
2015	157	80,700	157	80,700
2020	159	81,800	162	83,100
2025	163	83,700	167	85,700
2030	168	85,600	172	87,700
Change	**9%**	**8%**	**12%**	**10%**

Note: Operations rounded

2.6.2 Scenario 2: Private Airport Closures

There are currently three airport facilities in the Capital Region that are open to the public, but are privately-owned. Each of these are located within 15 NM of HFD. Because of land development pressures, property taxes, high maintenance costs and other financial issues, privately-owned airports have been closing throughout the nation and Connecticut is not immune

to such airport closures. The three private-owned airports include Simsbury, Ellington, and Skylark (in East Windsor), which combined store 147 based aircraft.

Under this scenario, it is assumed that all three of privately-owned airports will close prior to 2030. Thus, nearly 150 based aircraft would be displaced to neighboring airports. The address of based aircraft owners of the three privately-owned airports were input into a mapping software by zip code to calculate distances and approximate driving times to the closest airport. Approximately 50 percent of the owners were closer to HFD than any surrounding GA airport, such as Windham, CT (IJD) or Barnes, MA (BAF). As such, it is expected that up to 50 percent of the aircraft may relocate to HFD; the remaining based aircraft owners would most likely relocate to other airports as storage facilities were available or sell their aircraft. As shown in Table 2-18, an additional 75 aircraft are anticipated to be based at HFD by 2030 in this scenario. The OPBA was kept consistent with the Recommended Forecast, as shown in Table 2-10, to include operations from the increased number of based aircraft.

If these privately-owned airports close, there are significant challenges to find a location with the applicable facilities to base these aircraft. Additional pressure for tie down and hangar space will require the airport to examine its full development capability to accommodate these aircraft.

Table 2-18 - Private Airport Closures Allocation Scenario

Year	Recommended Forecast		Scenario Forecast	
	Based Aircraft	**Annual Operations**	**Based Aircraft**	**Annual Operations**
2010	154	79,600	154	79,600
2015	157	80,700	157	80,700
2020	159	81,800	184	94,600
2025	163	83,700	213	109,300
2030	168	85,600	243	123,900
Change	**9%**	**8%**	**58%**	**56%**
Note: Operations rounded				

2.6.3 Growth Potential at HFD

If both of these scenarios were to take place, HFD would see a large increase in based aircraft and operations, as shown in Table 2-19. More importantly they are considerable ramifications to outline the airport's facility requirements should one or both of these scenarios occur in the future. For scenario two, if the airport closures include only one or two airports, this would still have major impacts for HFD. For long term planning purposes, this discussion will be helpful to evaluate the airport's overall needs in the events either scenario comes into play at HFD.

Table 2-19 - Potential Growth at HFD					
Year	**Recommended Forecast**		**Potential Growth Forecast**		**Change**
	Based Aircraft	**Annual Operations**	**Based Aircraft**	**Annual Operations**	
2010	154	79,600	154	79,600	**0%**
2015	157	80,700	157	80,700	**0%**
2020	159	81,800	187	95,900	**17%**
2025	163	83,700	217	111,300	**33%**
2030	168	85,600	247	126,000	**47%**
Change	**9%**	**8%**	**60%**	**58%**	
Note: Operations rounded					

2.7 Forecast Summary

Local economic strength and socioeconomic growth are key indicators for general aviation activity. The population, employment and personal income in Hartford County are anticipated to maintain slow to moderate grow throughout the 20 year period. These trends suggest modest but positive indicators for continued increase in demand for general aviation services at HFD.

Table 2-20 - Forecast Summary					
	2010	**2015**	**2020**	**2025**	**2030**
Based Aircraft					
Single Engine	136	138	139	141	143
Multi-Engine	11	11	12	13	14
Jet / Turboprop	5	5	5	6	7
Helicopter	2	3	3	3	4
Total	**154**	**157**	**159**	**163**	**168**
Operations					
Annual	79,600	80,700	81,800	83,700	85,600
Local	39,800	40,350	40,900	41,850	42,800
Itinerant	39,800	40,350	40,900	41,850	42,800
Peak Hour	37	37	38	39	39

2.8 Future Design Aircraft

The Design Aircraft is defined as the largest or most demanding aircraft forecast to regularly use an airport (at least 500 annual operations). The existing Design Aircraft was identified in Section 2.2 as a light jet, such as the Cessna CJ4. The future Design Aircraft for HFD is not expected to change, including the designated ARC B-II (see Chapter 3). However, additional activity by light jets, as well as some mid-size jets is anticipated, particularly if runway improvements or an extension can be accomplished at HFD.