SECTION 3 – AVIATION DEMAND FORECASTS

3.1 INTRODUCTION

Aviation forecasts are time-based projections offering a 'reasonable expectation' of future Airport activity. The relationship between activity and projected demand indicates the type, extent, and timing of Airport improvements; including infrastructure, equipment, and service needs.

Forecasts are also used to determine operational peaking and capacity characteristics, identify the allocation of space for land and facilities, and also form the basis to determine the feasibility of various development alternatives.

The forecasts components for the Dare County Regional Airport Master Plan Update include:

- Based aircraft
- Critical aircraft family
- Aviation passengers/visitors
- Aircraft operations / usage
- Peak airport operations
- Airfield capacity

The 20-year demand forecasts have been segmented into the following three planning phases: 1) 'short-term' (2005-2010), 2) 'intermediate' (2011-2015) and, 3) 'long-term' (2016-2025).

The following outlines the steps in the forecast process:

❶ Identify Forecast Assumptions
❷ Develop Forecasts Using Trend and Statistical Methods
❸ Select Preferred Forecast
❹ Identify Future Critical Aircraft & FAA Airport Reference Code (ARC)
❺ Examine Airport Peak Activity Deficiencies
❻ Identify Airport Demand versus Capacity Issues

The forecasts reflect the most recent Airport user trends, user information, socio-economic patterns, competing airport services, and influences occurring within the general aviation industry. Overall, the forecast techniques employ various model conditions, whether an occurrence of past trends or an assumption of future factors, which might influence projections in some significant or substantial way. From this, the preferred forecast is selected.

3.2 FORECAST FACTORS AND ASSUMPTIONS

The following factors and assumptions are conditions of an unconstrained[1] forecast used to project based aircraft and annual aircraft operations for the Dare County Regional Airport:

- Upper-end development, increasing property values, and visitor affluency support trends towards greater reliance on air travel for first-time and repeat tourist travel to Dare County, including a spill-over to general aviation.

- Available area to meet hangar demand, including ±23 additional aircraft currently on the Airport's hangar waiting list.

- Establishment of a precision-type instrument approach with no additional restrictions to Special Use Airspace as required by the military.

- Proliferation of the industry trend towards more sophisticated and cost-effective aircraft, including the introduction of very-light jets and new single-engine turboprop models for fractional ownership programs.

- Competitive facilities, services, and pricing with surrounding public-use airports located in the northeast part of North Carolina, including ability to capture greater quantities of Jet-A fuel sales.

- Increased Airport use will result from: 1) attaining performance requirements for existing unmet business jet demand, 2) demand by new based aircraft, and 3) a continuation of on-airport commercial operators/users, including special aviation service organizations.

- Forecasts do not assume future activity by scheduled airline operator(s).

3.2.1 NATIONAL GA TRENDS

The general aviation industry, in terms of aircraft production and utilization, is growing at about 2% annually, with the business-class segment growing at a faster rate of 4% to 5% annually. These trends are supported by FAA aircraft registries, traffic count surveys, aircraft production and shipment schedules, used-aircraft market trends, pilot certifications/ratings, and corporate tax legislation on aircraft depreciations schedules.

Since 1990, fractional ownership programs have expanded from 60 to nearly 6,500 ownership programs. In the future, fractional ownership will likely expand into new markets, including the smaller turboprop fleet. Jet production will constitute the fastest growing segment of the business-class fleet.

[1] Assumes facilities are developed to meet all existing and future demand, and the potential for greater airport utilization as a response to providing needed infrastructures improvements – as demand warrants.

The following shows the FAA projected growth of the small, medium, and large-cabin business jet fleet over the next 10-years (2005-2015).

Business Jet Category	2005 % Fleet Growth (FAA)	2015 % Fleet Growth (FAA)
Small-Cabin Business Jets	6.2%	10.9% ↑
Medium to Large-Cabin Business Jets	3.7%	6.6% ↑

Source: FAA Aerospace Forecast, Table 31

Also, these aircraft are expected to operate more frequently than their piston counterparts, as noted by the FAA aircraft utilization rates shown below:

FAA Aircraft Annual Utilization Rates	
Single-Engine Aircraft	130 hours per year
Turbine Aircraft	331 hours per year
Fractional Turbine Aircraft	500 hours per year
Rotorcraft/Helicopters	310 hours per year

Source: FAA Forecasts (2005).

In addition, the use of smaller, more reliable and economical turboprop engines in single-engine airframes will bolster utilization. Similarly, the recent certification of ultra-small turbojet engines and airframes is expected to bring about a vigorous proliferation of business jet utilization, as represented by the new Cessna Citation Mustang and other jets currently undergoing FAA certification. Light-jets offer comparatively low purchase and operating costs, and are likely to become a substantial segment of the fractional ownership programs. These trends are likely to profoundly impact the industry within the next 5 to 10 years.

3.2.2 LOCAL GA TRENDS

The Dare County Regional Airport seems to have mirrored the economic growth of the County, adding 14 aircraft since 2003. This growth occurred despite the loss of hangars during Hurricane Isabel. At the end of 2004, 20-25 additional aircraft were on the Airport's hangar waiting list, demonstrating continued strong demand.

The following shows growth at the Airport from 1988:

Year	Based Aircraft	Average Annual Increase in Based Aircraft	Annual Civilian Aircraft Operations	(OPBA)
1988 to 2005	45 to 62	+1 aircraft per year	22,500 to 46,000	500 to 742

Note: Reported 1988 based aircraft = 45.
Note: Operations Per Based Aircraft (OPBA)

Much of the growth in based aircraft over the past several years is attributed to aircraft purchases by existing Airport owners and users. Since 1988, the Airport has added 17 aircraft, averaging 1 additional aircraft per year. Aircraft growth trends since 1988 have consequently been evaluated to determine longer term trends than those experienced from 2001-2004. For instance, the Operations Per Based Aircraft (OPBA), which is a simple gauge of operational activity measured against based aircraft, indicates that the Airport experiences a higher utilization rate as compared with general aviation airports nationwide.

From local-area indicators, this growth at the Airport appears to be linked not only to the County's population growth of about 2% to 5% annually, but also to the income and wealth as represented by the County's rapidly growing tax base, visitor spending, and economic impacts from tourism.

3.3 FORECASTS OF BASED AIRCRAFT

Table 3-1 summarizes the results of the methods used to forecast based aircraft at the Dare County Regional Airport, including the most recent projections from the 2003 Airport Terminal Area Study.

Preferred Forecast (Method D): The *Population Regression* uses a linear regression to forecast activity by incorporating the independent variable "county population" and the dependent variable "based aircraft" from 1970 to the present. In addition, the regression was adjusted to reflect a reasonable timeline for construction of additional hangars to incrementally meet the on-going 20 to 25 aircraft hangar waiting list, which were equally distributed throughout the 20-year forecast period. The pure regression growth rate was 1.6% annually, and 2.8% when including the hangar demand. Based aircraft are projected to increase from 62 to 109 in 2025; resulting in 1.15 additional based aircraft per year.

Table 3-1: Forecasts Comparison (Based Aircraft)

	Forecast Type	Forecast Description	20-Year Projection (2005 to 2025)	Hangar Waiting List Adjustment
A	Historical Growth Trend (%)	Aircraft Growth Rate (+ 2.8% per year)	62 to 109 (2.8%)	62 to 132 (3.8%)
B	Historical Growth Trend	Aircraft based on historical growth rate (1.5 aircraft per year)	62 to 82 (1.4%)	62 to 105 (2.6%)
C	2003 Terminal Area Study	Forecast extrapolation from 2003 TAS	62 to 92 (2.2%)	62 to 115 (3.2%)
D	Population Regression (1970-2004 Data)	County Population Variable to Based Acft. (1970-2004)	62 to 86 (1.6%)	62 to 109 (2.8%)
		AVERAGE OF TOTALS	62 to 92	62 to 115
* Percent (%) denotes average annual growth rate over the forecast period.				

Source: Talbert & Bright, Inc., Forecast Methods, 2/05

The following graphic illustrates the preferred "unconstrained" based aircraft forecast, including based aircraft totals dating back to 1960, as compared with a moving average trendline (dashed line).

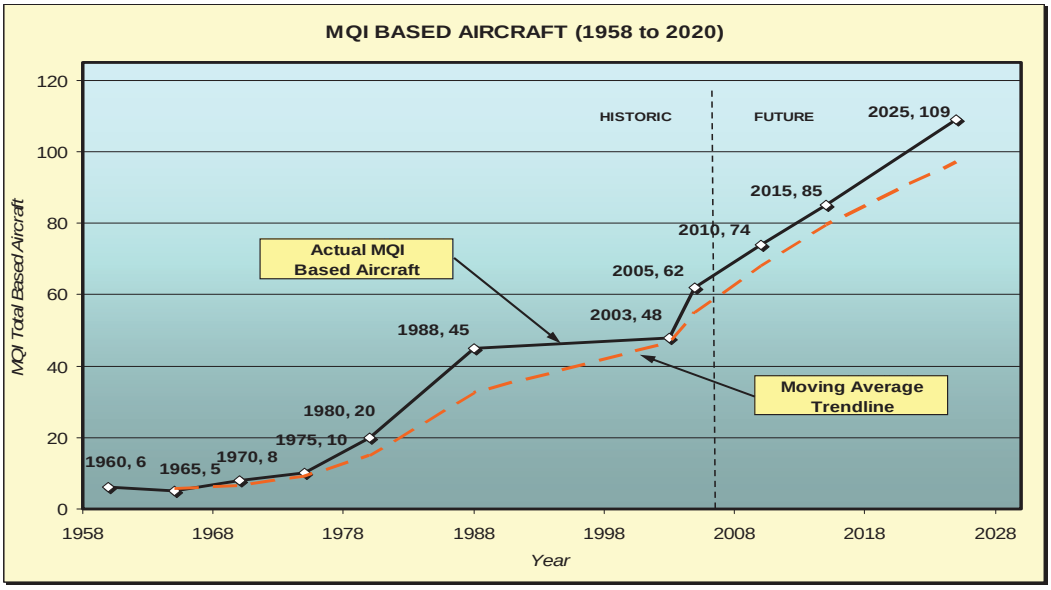


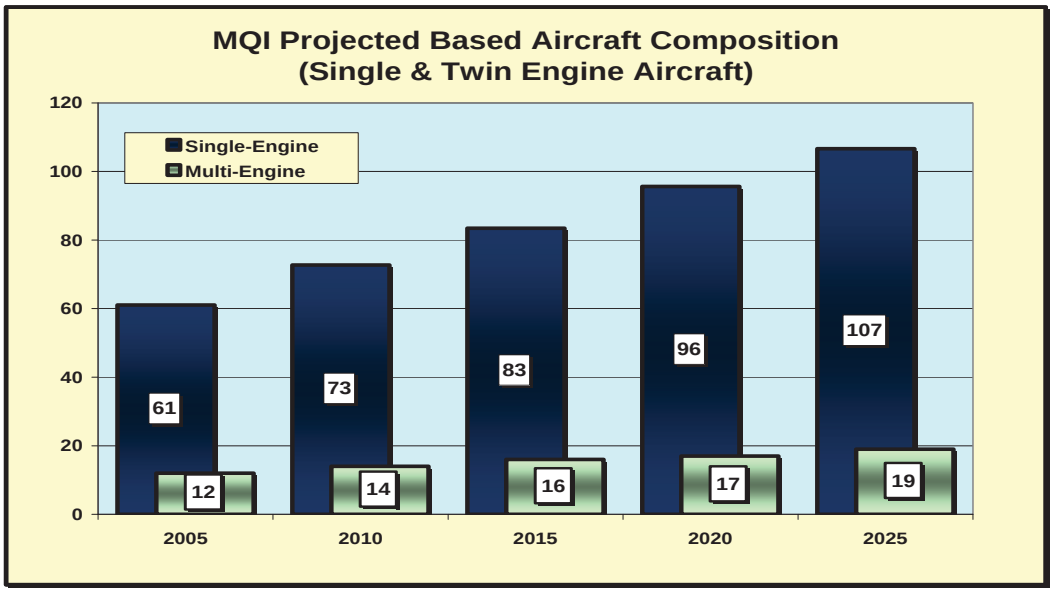
Table 3-2 shows a break-down of based aircraft projected, by type of aircraft, for the preferred forecast. Although the majority of based aircraft will continue to be single-engine aircraft, there is a very certain expectation for the based aircraft fleet to include more turboprops and small to medium-cabin business jets, including seasonally based.

Table 3-2: 'Unconstrained' Based Aircraft Fleet Mix Forecast

Aircraft Type (ARC Category)	2005	2010	2015	2020	2025
Single-Piston	49	59	67	79	88
Multi-Piston[1]	8	8	8	8	8
Turboprop	4	5	6	7	8
Business Jet	0	1	2	2	3
Helicopter	1	1	2	2	2
TOTAL FIXED-WING	62 61	74 (+12) 73	85 (+11) 83	98 (+13) 97	109 (+11) 107
SINGLE-ENGINE TWIN-ENGINE	49 (80%) 12 (20%)	59 14	67 16	79 17	88 (80%) 19 (20%)

Note: Other Aircraft (sailplanes and ultralights) not included as based aircraft.
[1] -The rate of multi-engine piston aircraft production is inadequate to replace those aircraft being taken out of commission.
[2]- Totals have been rounded.

Source: Talbert & Bright, Forecast Methods, February, 2005.



3.4 FORECAST OF ANNUAL AIRCRAFT OPERATIONS

Table 3-3 summarizes the aircraft activity forecast methods developed for the Dare County Regional Airport throughout the 20-year planning period. Of the five forecast methods prepared, the average of the forecasts is 69,000 operations by the year 2025.

Preferred Operational Forecast (Method B): The *Fuel Sales* forecast was selected as the preferred forecast. Total operations are projected to increase from 46,000 to 64,000 by 2025 (1.7% per year). The preferred forecast rate of growth is independent of the existing hangar waiting list. Flight training activity is included in this forecast. The forecast was developed from fuel sales records dating back to 1988.

Table 3-3: Forecast Comparison (Annual Aircraft Operations)

#	Forecast Type	Forecast Description	20-Year Projection (2005 to 2025)
A	Historical Growth Trend %	Historical aircraft growth (2.8%) tied to constant OPBA of 742.	46,000 to 81,000 (2.8%)
B	Fuel Sales Trend	Operations trended based on historical fuel sales records.	46,000 to 64,000 (1.7%)
C	2003 Terminal Area Study	Forecast extrapolation from 2003 TAS	50,000 to 87,500 (3.0%)
D	Tourism Forecast	Operations as a proportion of total occupancy in the Outer Banks.	46,000 to 57,000 (1.1%)
E	Population Regression	County Population Variable tied to constant OPBA of 742.	46,000 to 63,500 (1.7%)
		AVERAGE OF TOTALS	46,000 to 70,600

Note: Forecast #s 1 and 5 are based on constant Operations Per Based Aircraft (742).
Note: % Growth is Average Annual Growth.
[1]- "Occupancy" includes all commercially-taxed lodging in the Outer Banks. Data collected from 1994 to the present from the Outer Banks Visitors Bureau.
[2]- Terminal Area Study extrapolation reflects year-to-year forecasts.

Source: Talbert & Bright, Forecast Methods, February, 2005.

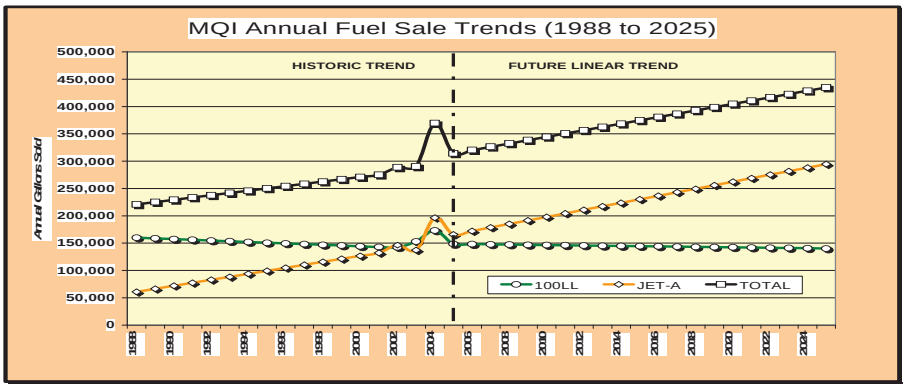
The fuel sales forecast demonstrates several key operational characteristics:

- Total fuel sales are increasing: Total fuel sales increased 67% from 1988 to 2004, in which 100-LL fuel sales increased 8.2% and Jet-A sales increased 222%.

- Turbine Traffic Purchase More Fuel Per Aircraft: In 2004, turbine aircraft took on an average of 85 gallons fuel per flight, while piston aircraft averaged 7 gallons per flight. This is consistent with fuel load capacities and aircraft utilization for turbine and piston aircraft. It also demonstrates potential increased price sensitivity for piston aircraft users relative to their turbine user counterparts (i.e. price inelasticity).

- Aircraft Fuelings: Fuel sales have grown despite increasing fuel costs. According to the US Department of Energy, the pre-tax price of Jet-A and 100-LL increased over 37% from 2001 to 2004 (US Energy Information Administration, 2005). This demonstrates continued strong demand for aviation in Dare County despite increasing costs for aircraft utilization.

The following graph shows MQI fuel sale trends since 1988:



Existing itinerant traffic is 50% of total operations. The following shows the annual forecast of 'local' versus 'itinerant' operations.

Local / Itinerant	2005	2010	2015	2020	2025
Local	23,000	25,000	27,500	29.600	32,000
Itinerant	23,000	25,000	27,500	29,600	32,000
TOTAL	46,000	50,000	55,000	59,500	64,000

Source: Traffic composition estimates from Airport Management Estimates, 1/2005

MQI Aircraft Charter Forecast:

As reported by the Airport, on-demand charter and fractional operations exceed 20% of total itinerant operations. In 2005, Outer Banks Airways and Dillon's Aviation (since replaced by Barrier Island Aviation, Ltd.) were based operators offering on-demand charter service. The following identifies charter activity from 2005 to 2025 using FAA surveyed charter utilization projections to estimate the growth of on-demand/charter/fractional ownership operations at the Airport.

On-Demand Charter Activity *	2005	2010	2015	2020	2025
Business Jets	350	390	420	450	470
Turboprops **	1,300	1,420	1,540	1,640	1,750
Twin Piston-Engine	3,000	3,270	3,540	3,780	4,020
Single Piston-Engine **	5,350	5,840	6,320	6,750	7,170
CHARTER ACTIVITY	10,000	10,900	11,800	12,600	13,400

* Fractional ownership operations are included with charter operations.
** Includes operations by transient and based charter aircraft.

MQI Military Activity Projection:

The following shows the projected activity by military aircraft (fixed-wing and rotorcraft). Military activity is not included in the Airport Master Plan demand forecasts; however, military traffic is anticipated to increase, particularly with future instrument procedure improvements, runway extension/strengthening.

Aircraft	2005	2010	2015	2020	2025
Military – Fixed Wing	350	435	525	525	615
Military – Rotorcraft	350	435	525	525	615
TOTAL	±750	±875	±1,050	±1,050	±1,225

MQI Business Jet Projection (Unconstrained / Constrained):

The FAA database on takeoff distances for 61 jets in the 12,200 jet fleet, evaluated against the percent of Category B, C/D jets unable to use less than 5,500' at 60% to 100% gross weight was the method for determining 'constrained' versus 'unconstrained' jet demand at Dare County. This method, affecting only jet activity, assumes a 5,500' length is 'unconstrained', while the 5,000' and 4,300' lengths are 'constrained'. The 2005 jet activity is ±700 operations, while the 2005 jet demand is ±2,400 operations. By 2025, the disparity between 5,500' unconstrained and 4,300' constrained reaches 4,000 annual jet operations. It should be noted that the 5,500' unconstrained projection was carried-forward into the preferred Airport operational forecast.

Aircraft	2005 Demand	2010	2015	2020	2025
Jets Operations @ 5,500+	2,400	3,100	4,000	5,000	6,200
Jets Operations @ 5,500	2,400*	2,850*	3,800*	4,700*	5,850*
Jets Operations @ 5,000	2,400	2,100	2,950	3,650	4,550
Jets Operations @ 4,300	2,400	1,150	1,300	1,500	1,700

* - Carried forward as the preferred jet forecast of annual operations.
Source: Talbert & Bright, Forecast Methods, February, 2005.

Table 3-4 summarizes the forecast of annual operations per aircraft type. The three (3) predominate categories of aircraft forecast to use the Airport are: 1) small single and twin-engine aircraft weighing less than 12,500 pounds; 2) large turbo-propeller aircraft weighing up to 12,500 pounds; and, 3) small to medium-cabin business jets weighing up to 30,000 pounds. Small single-engine aircraft will constitute the majority of traffic, with these planes typically seating less than 6 passengers.

Table 3-4: 'Unconstrained' 5,500' Operations Forecast Mix (Preferred)

Aircraft	2005	2010	2015	2020	2025
Single-Piston	35,500	36,050	38,800	41,100	43,050
Twin-Piston	6,000	6,300	6,500	6,700	6,800
Turbopropeller	3,500	4,400	5,400	6,500	7,700
Business Jets	700	2,850	3,800	4,700	5,850
Rotorcraft	300	400	500	500	600
TOTAL	46,000	50,000	55,000	59,500	64,000

Note: Military operations not counted as 'GA' activity. Activity is rounded.
Note: Values were tabulated using FAA/GAMA Forecast Growth Rates Per Aircraft Class (hours flown per year).

Source: Talbert & Bright, Forecast Methods, February, 2005.

Table 3-5 shows the number of forecast instrument operations[2], and actual instrument approaches conducted at the Dare County Regional Airport.

Table 3-5: Forecast of Instrument Activity (AIA)

Actual Instrument Approach (AIA's)	2005	2010	2015	2020	2025
Itinerant Traffic	1,430	1,560	1,710	1,840	1,990
Air Charter Traffic	1,100	1,200	1,320	1,420	1,540
Based Aircraft & Training	1,070	1,170	1,280	1,380	1,490
TOTAL AIA's	3,600	3,920	4,310	4,620	5,010

Note 1: Proportionate instrument activity was carried forward based on forecast increases in total activity.

Source: Talbert & Bright, Forecast Methods, February, 2005.

[2] Note 2: Forecast based on unconstrained condition – IFR flight plans are completed and canceled after executing the full approach. An instrument approach is defined as an approach to an airport, with intent to land in accordance with an instrument flight rule (IFR), when visibility is less than three nautical miles and/or the cloud ceiling is at or below the minimum initial approach altitude. Military operations are not included in the AIA forecast.

3.5 FORECAST OF CRITICAL AIRCRAFT

Table 3-6 defines the forecast mix exclusively for jet activity, which represent the most demanding types of aircraft using the Airport. The critical aircraft is the largest airplane within a composite family of aircraft conducting at least 500 annual operations (combination of 250 takeoffs and landings) per year at the Airport. The critical aircraft bears particular importance, as it is evaluated with respect to size, speed and weight, and serves as the basis for determining the Airport's design, structure, and equipment needs for both airfield and terminal area facilities.

The level of activity by Category B, C and D jet traffic was carefully examined throughout the 20-year period. The jet activity was projected using actual-logged Airport records, and application of jet utilization and fleet data published by the FAA and NBAA. Business jet categories defined by the Airport Reference Code (ARC):

Approach Category	Aircraft Approach Speed
A	Less than 90 knots
B (Small Jets)	91 to 120 knots
C (Medium Jets)	121 to 140 knots
D (Large to Ultra-Large Jets)	141 to 165 knots

Design Group	Aircraft Wingspan
I (Small Jets)	Less than 49'
II (Small to Large Jets)	50' to 79'
III (Ultra-Large Jets)	80' to 117'

Table 3.6 shows an unconstrained forecast for business jet operations. This assumes a trend toward the national business jet utilization average for Category B, C, and D jets. It is also assumed that one or more Category B jets would be based at the Airport, either permanently or seasonally, upon extension of the runway.

Table 3-6: Unconstrained Forecast of Business Jet Activity

Business Jet Type (ARC Category)	Existing	2010	2015	2020	2025
CAT B - Itinerant	530	1,200	1,400	1,650	2,000
CAT B - MQI Based	- -	300	750	1,150	1,550
CAT C - Itinerant	120	850	1,000	1,100	1,400
CAT D - Itinerant	30	500	650	800	900
TOTAL	700	2,850	3,800	4,700	5,850

ARC B jets: ± 74% of total forecast jet operations trending toward 45%
ARC C jets: ± 24% of total forecast jet operations trending toward 33%
ARC D jets: ± 3% of total forecast jet operations trending toward 22%

Source: Talbert & Bright, Forecast Methods, July 2004. Dare County Fuel Records.

Based on unconstrained demand, the jet activity forecast clearly indicates that a Category C/D jet would become the 'critical' aircraft within 5 to 10 years.

The following is a list of Category B, C, and D business-class aircraft, including jets:

- ARC B - Piston Aircraft	- ARC B - Turbine (Turboprop & Jets)	- ARC C/D - Turbine (Business Jets)
Twin-Engine (Piston) Beech (Baron Series) Beech (Duke) Cessna 404 (Titan) Beechcraft (Duke Series) Beech (King Air B100) Cessna 414 (Chancellor) Cessna 402 (Businessliner) Cessna 421 (Golden Eagle) Piper PA-30-310 (Navajo) Piper (Chieftan) Piper PA-60-602P (Aerostar)	Single-Engine (ARC B-I) Cessna Caravan Twin-Propeller (ARC B-II) Piper PA-42 Cheyenne III Beechcraft King Air Series Beechcraft Queen Air Rockwell Shrike Mitsubishi (MU-II) Marquis ARC B-II+10 Passengers Beechcraft (B300/350) Cessna 425 Conquest II Small-Cabin Business Jets Lear (Various Models) Dassault (Falcon 10) Rockwell (Sabre 40/60) Cessna Citation 550/560 Raytheon/Hawker 800XP/1000 Dassault Falcon 20/ 50 Dassault Falcon 900/ 900EX Westwind Astra SP/SPX	Medium-Cabin Jets (ARC C) Cessna 650 Series Cessna 680 Series Cessna 750 Series Learjet 24/25/31A/45/54/55/60 Challenger 600/604 Raytheon/Hawker 600/ 700 Raytheon/Hawker 2000/2000EX IAI Jet Commander IAI Westwind I/ II Gulfstream Galaxy Rockwell Sabreliner 75A Gulfstream G-III Large-Cabin Jets (ARC D) Bombardier Global Express Gulfstream 400 & 500 Lear 35/36

The following is an overview of the 20-year critical aircraft forecast:

Short-Term Critical Aircraft: Category B business jets are the critical aircraft family for the Dare County Regional Airport in the next 3 to 5 years. Fuel sale records clearly support this segment of business jet activity at MQI. Category B jets constitute the majority of jet traffic resulting from itinerant users. The Cessna Citation series is currently the most popular small-cabin business jet (ARC B-II) in production and realistically represents the performance demands of most business jet aircraft currently using the Dare County Regional Airport. Also, some type of flight-sharing program associated with a major user based at the Dare County Regional Airport (fractional ownership, joint or co-owned aircraft, remote corporate based aircraft) is a possible scenario for jet activity.

Long-Term Critical Aircraft: Unconstrained, the Category C/D business jet demand would exceed 500 annual operations within 5 to 10 years. At the present 4,300' length, Category C/D jets would not be expected to conduct 500 annual operations, and a Category C/D jet would not be based at the Airport. Because a 'representative' Category C jet model is defined as the future critical aircraft, 'composite' ARC C standards are applied for long-term airport planning and design purposes. These aircraft have substantially different performance characteristics, payloads, and operating costs than the types of jets predominately using the Airport.

3.6 FORECAST OF AIRPORT REFERENCE CODE (ARC)

Table 3-7, using information from the critical aircraft information in Table 3-6, identifies the Airport Reference Code (ARC) forecast during each of the forecast periods. The ARC is a system established by the FAA to relate airport geometric and design criteria to the operational and physical characteristics of the critical aircraft, or representative aircraft family, currently operating or intending to operate at the Airport. This determines the minimum safety area and separation standards.

Table 3-7: Airport Reference Code (ARC) & Representative Critical Aircraft (Unconstrained)

Phase 1 ARC (0-5 Years)	Phase 2 ARC (6 to 10 Years)	Phase 3 ARC (10-20 Years)
ARC B-II Small-Cabin Jet Cessna 560 Citation	ARC B-II Medium-Cabin Jet Hawker 800 Series	ARC C-II Medium- to Large-Cabin Jet Cessna 750 Citation

Source: TBI, Designated Airport Reference Code (ARC) Forecast, February 2005.

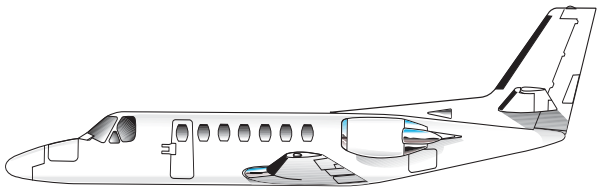
The following lists critical aircraft information, as identified in Table 3-6:

Aircraft Type & ARC (Planning Period)	Wing Span	Aircraft Length	Aircraft Height	Seats	Max. Gross Takeoff Weight	App. Speed (knots)
Critical (1) Cessna Citation ARC B-II	52.2'	48.9'	15.2'	4-6	18,000	108
Critical (2) Hawker Series ARC B-II	51.4'	53.9'	17.1'	7-10	31,000	130
Critical (3) Cessna Citation ARC C-II	63.10'	72.2'	19.2'	10+	36,400	131

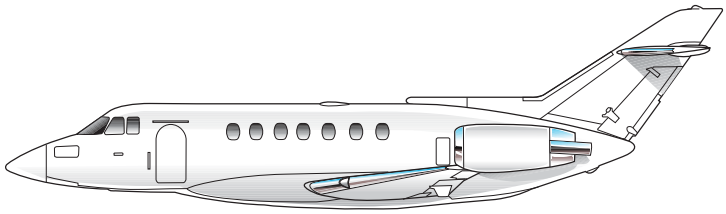
Note 1: Takeoff weight indicates maximum takeoff and ramp weight, respectively.

The following is a depiction of the critical aircraft described in Table 3-6.

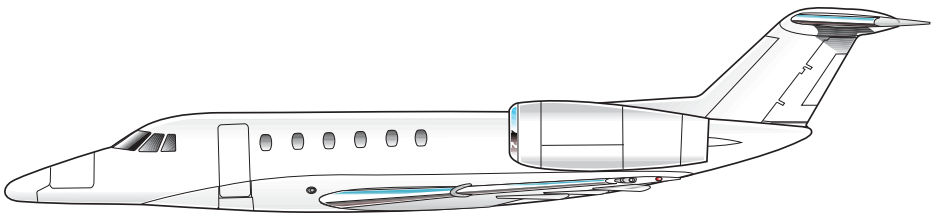
EXISTING - CRITICAL AIRCRAFT TYPE
ARC B-II (Small Cabin – 4 to 6 Passengers)
Cessna Citation 560 Series Business Jet (± 500 Ann. Ops.)



2005 TO 2010 - CRITICAL BASED AIRCRAFT TYPE
ARC B-II (Medium Cabin – 6 to 10 Passengers)
Hawker 800 Series Business Jet (± 500 Ann. Ops.)



2010+ - CRITICAL TRANSIENT AIRCRAFT TYPE
ARC C-II (Medium Cabin – 8 to 12 passengers)
Cessna Citation 750 Series Business Jet (± 500 Ann. Ops.)



3.7 AIRPORT PEAKING CHARACTERISTICS (AIRCRAFT & PASSENGERS)

Table 3-8 identifies general aviation peaking activity used to determine the allocation of space for various terminal facilities (i.e., terminal building, aircraft parking and auto parking). Specifically, the peak hour flights (PHF) and design hour passenger (DHP) are used to identify user space requirements during the average day of the peak month. The peaking activity is calculated using standard FAA demand/capacity guidelines. A 'composite' DHP is used to more heavily weight 'itinerant' users, which typically require more aircraft and passenger processing space than 'local' users.

Table3-8: Aircraft Operational Peaking (Average Day of Peak Month)

General Aviation Peaking Characteristics				
Peaking Element	2010	2015	2020	2025
Local - Annual Operations	25,000	27,500	29,750	32,000
Local - Peak Month Operations	3,750	4,125	4,463	4,800
Local - Peak Day Operations	123	135	146	157
Local - Peak Hour Operations	14.8	16.2	17.5	18.8
Itinerant - Annual Itinerant Operations	25,000	27,500	29,750	32,000
Itinerant - Peak Month Operations	5,000	5,500	5,950	6,400
Itinerant - Peak Day Operations	164	180	195	210
Itinerant - Peak Hour Operations	24.6	27.0	29.3	31.5
Total Annual Pilot and Passengers	63,125	69,438	75,119	80,800
Composite Design Hour Passenger	41.3	45.3	49.1	52.9

Aggregate Peak Month: (Annual Operations) * (15% Local) + (Annual Ops) * (20% Itinerant)
Aggregate Peak Average Day: (Peak Month Operations)/30.4
Aggregate Peak Hour: (Peak Day Operations) * (12%) + (Peak Day Operations) * (15%)
Composite Design Hour Passenger: Average (Weighted Local & Itinerant Peak Passengers)

Note: 'Operations' = 'Flights' x 2
Note: Local operational peaking includes touch & go activity.

Source: Talbert & Bright, Inc.

In 2005, the Airport processes about 42,000 pilots & passengers, about 30 per hour during the peak operating periods. Airport management estimates that MQI currently experiences in excess of 300 operations per day during peak travel times. Projecting this, the Airport could anticipate nearly 70,000 to 80,000 pilot & passenger visitors annually through the terminal within the next 10 to 20 years.

Table 3-9 identifies the automobile traffic associated with the general aviation peaking activity, measured as Average Daily Traffic (ADT). Both based operators and itinerant users generate auto traffic. The Airport now experiences about 30,000 auto trips, with an average daily traffic count of 80 trips, and 10 trips during the peak hours. By the year 2025, the Airport could anticipate nearly 60,000 auto trips, and about 160 daily traffic movements along the Airport Entrance Road during the peak traffic months. Based operator auto traffic primarily occurs on the southeast portion of the Airport near the hangar area.

Table3-9: Airport Automobile Traffic

Equivalent Average Daily Traffic (ADT)	2010	2015	2025
Based Aircraft	34	40	52
Itinerant Flights	41	45	53
Airport Employees	5	8	10
Airport Based Employees & Tenants	10	16	21
Utility / Delivery / Service Vehicle Traffic (%)	1	2	2
Average Daily Traffic (ADT)	92	111	138
Peak Hour Traffic (12% of ADT)	11	13	17
Total Annual Airport Auto Traffic	33,600	40,350	50,300

Note: ADT – Average Daily Traffic (rounding may affect numbers)
Note: 'Trip' = 'Movement / 2

Source: Talbert & Bright, Inc.

3.8 AIRPORT (AIRFIELD) CAPACITY

An intersecting dual runway with a full-parallel taxiway system provides a throughput capacity of nearly 215,000 aircraft operations, or 107,500 flights per year. The forecast of 64,000 annual operations at the Dare County Regional Airport by the year 2025 consumes about 30% of the Airport's operational capacity (215,000 / 64,000 = 30%). Furthermore, operations during IFR conditions do not represent an airfield capacity issue.

For planning purposes, capacity does not become a significant operational issue until reaching 60% to 80%. There are consequently no pervasive airfield capacity or delay problems; however, there may be situations during peak hour operations where delay is experienced due to certain ground maneuvering or ATC holds.