



IOWA AVIATION SYSTEM PLAN

AIRPORT SUMMARY REPORT

DES MOINES INTERNATIONAL AIRPORT

Prepared for:

IOWA DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION

2004

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“The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration (FAA) as approved under the Airport and Airway Improvement Act of 1982. The contents of this report reflect the views of the Consultant, which is responsible for the facts and accuracy of the data depicted herein, and do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable in accordance with applicable public laws.”

IOWA AVIATION SYSTEM PLAN - AIRPORT SUMMARY REPORT

This summary is intended to provide a general understanding of the specific information, findings and recommendations from the Iowa Aviation System Plan. An individual airport report was prepared for each public owned airport in Iowa.

INTRODUCTION

The Iowa Department of Transportation Office of Aviation, along with the System Plan Advisory Committee and consultant team, developed a strategic approach by which to identify and evaluate the needs of the Iowa aviation system within the period 2004 to 2024.

The Iowa aviation system is an integral component of the state's transportation network. The aviation system meets aviation and economic needs and links Iowa to the national transportation system. Aviation provides an important and efficient means of transportation for the movement of people and goods. The vision for the Iowa aviation system is to have safe, quality facilities and services that support transportation demands and meet economic development and quality of life needs in the state.

The primary goal of the system plan is to provide a framework that supports informed decisions related to planning and developing the Iowa aviation system. The objectives of this update of the Iowa Aviation System Plan are to:

- Identify and analyze aviation assets, including airspace, ground facilities and services, and needs of the state to assure that aviation performs its role in Iowa's economy and for its citizens.
- Provide continued guidance for development of a system of airports to meet the state's existing and future air transportation needs, projecting five, ten, and 20-year projects and giving guidance to meet needs.
- Build consensus among public policy makers, airport sponsors and users so that the plan's recommendations can be more readily accomplished.

Each airport was assigned to a functional classification. Facility and service objectives were developed for functional classifications. Based on existing facilities and services, recommendations were set forth for each airport.

SYSTEM GOALS

The following five goals and associated performance measures were identified and adopted to guide the Iowa aviation system development and establish the framework for the Iowa Aviation System Plan:

- **Development** – To provide an airport system that meets current and future customer needs.
- **Economic Support** – To promote an aviation system that sustains and enhances Iowa's economy.
- **Safety & Security** – To promote a safe and secure system of airports.
- **Accessibility** – To provide a system of airports that is accessible from both the ground and the air.
- **Education** – To support a system of airports that provides educational and career opportunities and promotes an understanding of the benefits of Iowa's air transportation system.

Performance Measure & Benchmark Summary	
<p>Performance Measure: Development</p> <p><i>Benchmarks</i></p> <ul style="list-style-type: none"> • Airports meeting aircraft storage objectives • Airports meeting aircraft parking objectives • Airports meeting auto parking objectives • Airports with Pavement Condition Index (PCI) rating of 70 or higher on primary runway • Airports with current master plan or Airport Layout Plan (ALP) • Airports included in a local comprehensive plan or with surrounding land use controls/zonings <p>Performance Measure: Economic Support</p> <p><i>Benchmarks</i></p> <ul style="list-style-type: none"> • Airports with jet fuel • Airports with a runway length of 5,500 feet or greater • Airports with rental car services • Airports with a courtesy car available • Airports with a 24-7 fueling (credit card or FBO) • Iowa employment within a 30-minute drive time of Commercial or Enhanced Service airport • Employment growth counties within 30-minute drive time of Commercial or Enhanced Service airport • Airports supporting air cargo • Airports with aircraft maintenance <p>Performance Measure: Safety and Security</p> <p><i>Benchmarks</i></p> <ul style="list-style-type: none"> • Airports with clear approaches to primary runway • Airports with wildlife management plans • Airports with emergency response plans • Airports with perimeter fencing • Airports with controlled access to airfield 	<p>Performance Measure: Accessibility</p> <p><i>Benchmarks</i></p> <ul style="list-style-type: none"> • Airports with precision approaches • Airports with any instrument approach • Airports with approach lighting system (ALS) • Airports with a precision approach and ALS • Iowa's Population within 30 minutes of any system airport • Iowa's population within 30 minutes of a Commercial or Enhanced Service airport • Iowa's population within 30 minutes of a General Service airport • Iowa's population within 30 minutes of an airport with a non-precision approach • Iowa's population within 30 minutes of an airport with a precision approach • Iowa's population within 30 minutes of an airport with onsite weather reporting equipment • Iowa's population within 60 minutes of an airport with one or more scheduled commercial airlines • Iowa's population within 120 minutes of an airport with two or more scheduled commercial airlines • Iowa's population within 120 minutes of an airport with two or more scheduled commercial airlines or 60 minutes of an airport with one or more scheduled commercial airlines <p>Performance Measure: Education</p> <p><i>Benchmarks</i></p> <ul style="list-style-type: none"> • Airports with on-site flight instruction • Aviation related training programs connected with local schools • Airports with public outreach/educational (following National Air Transportation Association (NATA,) National Business Aircraft Association (NBAA,) and Aircraft Owners and Pilots Association (AOPA) guidelines) programs, or hosting functions to bring the non-flying public to the airport

AIRPORT FUNCTIONAL ROLES

Airports within any transportation system contribute to meeting air transportation and economic needs in different ways and at varying levels. While each airport within a system contributes in some way, airports fill different roles. Because airports in the Iowa aviation system play different roles, their needs for facilities and services also vary accordingly.

With input from the Iowa DOT Office of Aviation and the System Plan Advisory Committee, each public owned airport in Iowa was assigned to one of five roles.

RECOMMENDED FUNCTIONAL AIRPORT ROLES

- **Commercial Service Airports** – these airports support some level of scheduled commercial airline service and they support a full range of general aviation aircraft to virtually all domestic and possibly some international destinations.
- **Enhanced Service Airports** – these airports support almost all general aviation aircraft, including most types of business jets; these airports generally serve as transportation centers and economic catalysts for the State.
Facility and service objectives: 5,500' x 100' runway, parallel taxiway, precision approach, approach lighting, AWOS/ASOS, covered aircraft storage, jet and aviation fuel, full service FBO, and ground transportation
- **General Service Airports** – these airports support most twin and single engine general aviation aircraft and may experience occasional use by business jets. These airports support regional and in-state air transportation needs and local economic development.
Facility and service objectives: 4,000' x 75' runway, partial parallel taxiway or turnarounds, non-precision approach, AWOS/ASOS, covered aircraft storage, jet and aviation fuel, limited service FBO, and ground transportation.
- **Basic Service Airports** – these airports support primarily single engine general aviation aircraft but may also sometimes accommodate smaller twin-engine general aviation aircraft. These airports support local air transportation, and special use aviation activities.
Facility and service objectives: 3,000' x 60' runway (paved), 2,500' runway (turf), exits as needed, visual approach, covered aircraft storage, and aviation fuel.
- **Basis Service II Airports** – These airports support local air transportation, special use aviation activities, and may duplicate services in the area.
No facility and service objectives are specified for these airports.

AIRPORT FACILITY AND SERVICE OBJECTIVE

Airport facility and service objectives were established for the functional roles. These objectives were developed with input from the Iowa DOT Office of Aviation and System Plan Advisory Committee. The facility and services objectives should not be considered a requirement or development standard. Current airport facilities and services were compared to the facility and service objectives. Where existing facilities and services do not meet or exceed the objectives, consideration may be given by the airport owner to develop future facility and services improvements. Development of some facilities would require local support and justification of need through development of an airport master plan or through the environmental documentation process.

No state or federal funding resources are guaranteed or committed by inclusion of specific facility and service improvements in this report.

Facility and service objectives for commercial service airports should, at minimum, equal those developed for enhanced service airports as well as recommendations set forth in a current Airport Master Plan.

Basic Service II airports should meet state minimum safety standards: Runway width 50', visual approach 20:1, wind indicator, and 24 hour public telephone. Additional facility and service objectives were not established for Basic Service II airports.

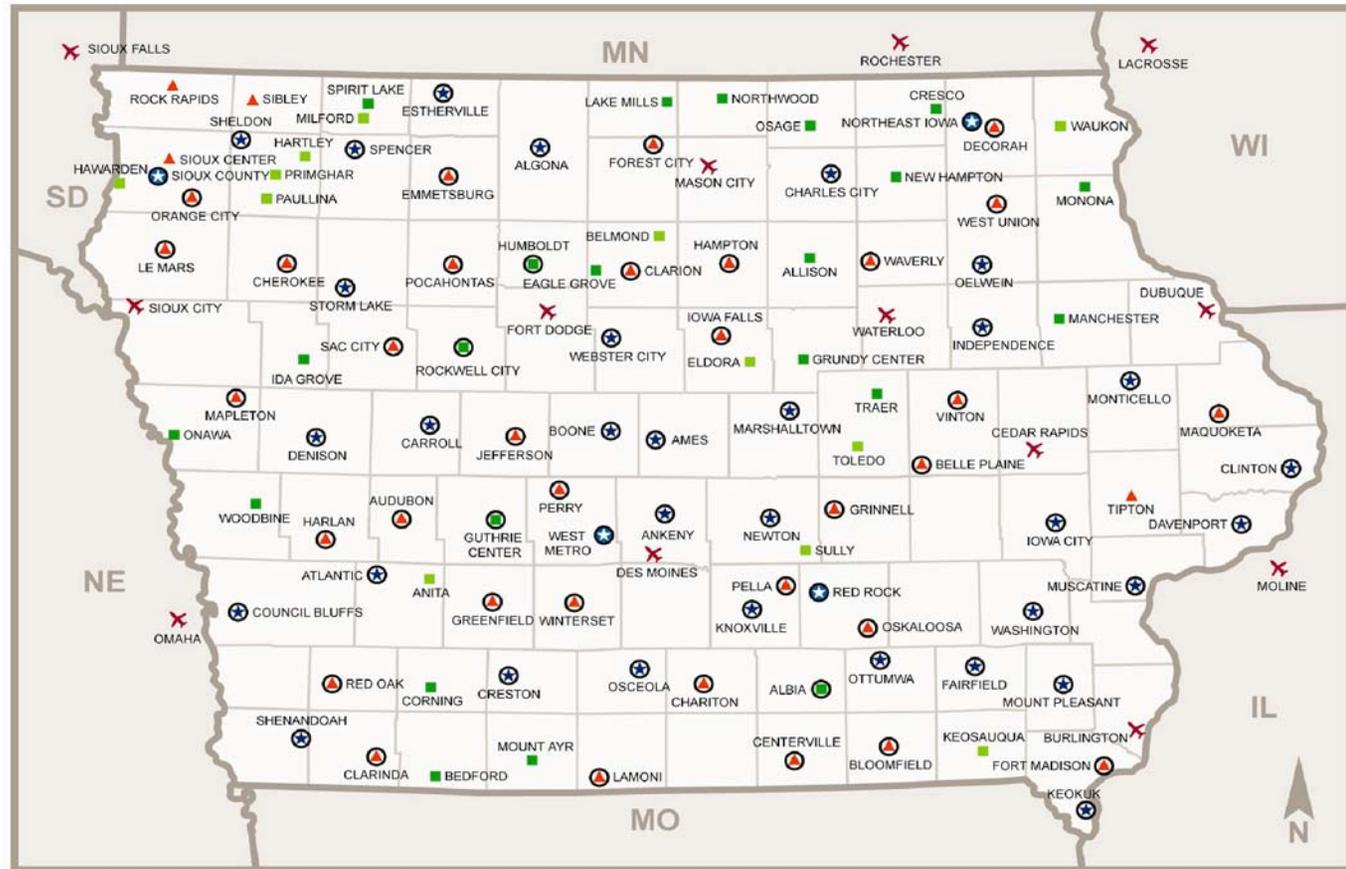
The following table sets forth the facility and service objectives for Enhanced Service, General Service, and Basic Service airports.

FACILITY AND SERVICE OBJECTIVES

	Enhanced Service Airports	General Service Airports	Basic Service Airports
Airport Reference Code (ARC)	C-II	B-II	B-I or Below
Runway Length (Primary)	Minimum 5,500 feet	Minimum Length 4,000 feet	3,000 feet Paved; 2500 feet Turf
Runway Width	100 feet	75 feet	60 feet Paved; 120 feet Turf
Taxiway	Full Parallel	Partial or Turnarounds	Exits as Needed
Approach	Precision	Non-Precision	Visual
Runway Lighting	MIRL/HIRL	MIRL	LIRL (Pilot Controlled)
Taxiway Lighting	MITL/HITL	LITL	Not An Objective
Weather Reporting	AWOS/ASOS	AWOS/ASOS	Not An Objective
Approach Aids	ALS	ALS	Not An Objective
Visual Guidance Slope Indicator (VGSI)	Both Runway Ends	Both Runway Ends	Not An Objective
Runway End Identifier Lights (REILS)	Both Runway Ends	Both Runway Ends	Not An Objective
Rotating Beacon	Rotating Beacon	Rotating Beacon	Not an Objective
Lighted Wind Indicator	Lighted Wind Indicator	Lighted Wind Indicator	Lighted Wind Indicator/Wind Sock
RCO Facilities	RCO Facilities	Not an Objective	Not an Objective
Other Pavement Strength	To Be Determined	To Be Determined	To Be Determined
Covered Storage	For 100% of Based Aircraft	100% of Based Aircraft	100% of Based Aircraft
Aircraft Apron	100% of Daily Transient	50% of Daily Transient	50% of Daily Transient
Terminal/Administration Bldg.	Yes	Not An Objective	Not An Objective
Auto Parking	Spaces equal to 100% of Based Aircraft (paved)	75% of Based Aircraft	50% of Based Aircraft
Fencing	Perimeter	Not An Objective	Not An Objective
Other	Building for Airport Maintenance Equipment	Not An Objective	Not An Objective
Fuel	100LL & Jet A - 24 Hour	100LL & Jet A 24 Hour (as needed)	100LL
FBO	Full Service - 24 Hour	Limited	Not An Objective
Ground Transportation	Rental Car, Taxi or Other	Courtesy Car/Off Site Rental Car	Not An Objective
Food Services	Vending	Vending	Not An Objective
Phone	Yes	Yes	Yes
Restroom	Yes	Yes	Yes
Pilot Lounge	Yes with Weather Reporting	Yes with Weather Reporting	Not An Objective
Security*	*	*	*
Snow Removal	Snow Removal	Snow Removal	Yes

*See the Iowa DOT Security Enhancement Guidelines.

Airports by System Role



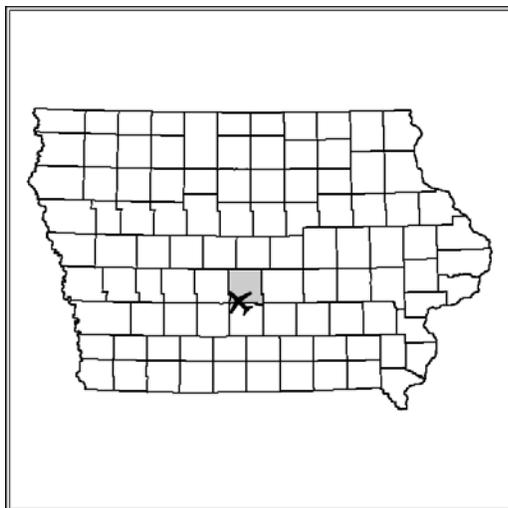
- ✕ Commercial Service Airports
- ★ Enhanced Service Airports
- ★ (with circle) New Enhanced Service Airports
- ▲ General Service Airports
- Basic Service Airports
- (with circle) Basic Service II Airports
- NPIAS

DES MOINES INTERNATIONAL AIRPORT (DSM) INDIVIDUAL SUMMARY REPORT

The airport opened at its present site in 1933. By 1984 the Airport had become a financially self-supportive enterprise operation within the City and, to this day, continues to be financially self-supporting with an annual operating budget of over \$20 million and an annual capital budget that varies from \$20 to \$30 million. In 1993, this advisory board was reformed into a policy making board (under Chapter 392 of the Iowa Code) to govern the operation of the airport as an “Administrative Agency” within the City government. As an “Administrative Agency,” the Des Moines International Airport is governed by a seven member board, appointed by the City Council.

The airport is classified in the National Plan of Integrated Airport Systems (NPIAS) as a small hub, primary airport and is identified in the Iowa Aviation System Plan as a Commercial Service airport. (A small hub is one that enplanes from 0.05 to 0.249 percent of the total U.S. passengers.) The Des Moines International Airport is the busiest commercial airport in the state currently enplaning over 900,000 passengers and 195,000,000 pounds of air cargo annually. The airport is also a major base for the Iowa Air National Guard and serves general aviation needs in central Iowa with 88 based aircraft.

LOCATION MAP



The Des Moines International Airport is a 2,232 acre facility located in the far southern portions of Polk County, within the corporate limits of the City of Des Moines. The airport is on the southwestern side of the city, approximately 4 miles southwest of the central business district. The airport is located approximately six miles east of Interstate 35, and is accessible via the Highway 5 bypass. The airport is bordered on the north by Watrous and McKinley Avenues, on the east by Fleur Drive, on the south by Army Post and to the west by Southwest 42nd and 46th Streets.

EXISTING FACILITIES

- **Runway Facilities**

The Des Moines International Airport supports two runway facilities. Runway 13L-31R is the primary runway. Oriented northwest to southeast, it is 9,001 feet in length, 150 feet in width. The pavement has a grooved asphalt surface and is strength-rated at 133,000 pounds for single wheel gear (SWL), 180,000 pounds for dual wheel gear (DWL), and 340,000 pounds for dual tandem gear (DTWL). The runway has precision instrument approaches to both ends. Runway 13L has an instrument landing system (ILS) with a CAT I approach. The minimums for this approach are 200-foot cloud ceilings and ¼-mile visibility. This approach is equipped with a medium intensity approach light system (MALSR). Runway 31R also has an ILS but is equipped for precision approaches down to CAT III minimums (600 feet visibility and 0 ceiling). The CAT III approach requires touchdown zone (TDZ) and centerline (CL) lighting as well as a CAT II approach light system with sequenced flashers (ALSF-2). The runway also has precision markings and HIRL. Runway 13L has a VASI-4 while Runway 31R is equipped with PAPI-4.

Runway 5-23 is the crosswind runway and is oriented northeast to southwest. This runway is currently 9,003 feet long and 150 feet wide. It also has a grooved concrete/asphalt surface and is strength-rated at 133,000 pounds SWL, 180,000 pounds DWL, and 340,000 pounds DTL. The runway has precision markings on Runway 5, nonprecision markings on Runway 23, and HIRL. Both runway approaches are equipped with visual approach slop indicators (VASI-4's). Runway 5 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (MALSR) and a Category I instrument landing system with a 200-foot ceiling and one-half mile visibility. Runway 23 has a nonprecision VOR approach with a ceiling of 800 feet and ¼ mile visibility and is equipped with a runway end identifier light (REIL).

Both runways on the airport are served by full strength, 75 foot wide, parallel taxiways with medium intensity taxiway lighting (MITL). Taxiway D runs along the entire length on the north side of Runway 13L-31R. Taxiway P is a parallel taxiway running along the entire length on the south side of Runway 5-23. Airfield guidance signs are in place throughout the airport's runway and taxiway system.

The airport has a rotating beacon, light wind indicators, remote communications outlet (RCO), and an all weather observation station (ASOS).

- **Terminal Facilities**

Landside facilities at Des Moines International Airport include the airline passenger terminal complex, US Customs and Immigration facility, US Postal facility, air cargo facilities, general aviation facilities, military facilities, aircraft rescue and fire fighting facility, FAA facilities including an air traffic control tower and airway facilities office and airport maintenance facilities.

The airline passenger terminal complex is located on the east side of the airport with vehicle access from Fleur Drive. The passenger terminal includes over 200,000 square feet of enclosed space. The airside portion of the passenger terminal complex consists of a 156,000 square yard aircraft apron, 11 numbered gates with passenger board bridges on two, second level departure concourses (Concourses A and C) as well as 3 ground level board gates located below the A Concourse. The departure gates are supported by a security screening area along with a restaurant and gift shop located after the passenger screening area.

The landside portion of the terminal building consists of the main lobby, the departure area (ticketing), and the arrival area (baggage claim). The main lobby includes a restaurant, lounge, and gift shop and business center. The departure area also includes passenger ticketing, baggage make-up facilities, and airline offices. The exterior frontage includes a front curb canopy and a permanent enclosed skylap facility for curbside check-in of passenger baggage. The arrival area consists of passenger baggage claim facilities, rental car agency service desks, information center, hotel courtesy phones, and access to ground transportation.

There are two parking garages with over 1900 spaces located immediately east of the terminal access road and terminal building front curb area and two additional remote surface parking lots with over 1200 parking spaces available. The parking garages are connected to the terminal building by a second level, covered, pedestrian walkway (i.e. skywalk) while the remote lots have free shuttle bus services to and from the terminal building.

- **Air Cargo**

The airport's air cargo facilities include over 200,000 square yards of aircraft parking apron dedicated to air cargo, and approximately 100,000 square feet of warehouse space, located in two separate areas (175,000 square yards on the south cargo area and 25,000 square yards on the east air cargo apron). The east aircraft apron, just south of the passenger terminal building, is fronted by one warehouse facility, the US Postal facility and the US Customs and Immigration facility. The larger apron with warehouse/office/ maintenance facility is located on the south side of the airport and serves the majority of the freight traffic including the second-day regional hub activities of United Parcel Service.

- **General Aviation**

General aviation facilities are facilities necessary for handling general aviation aircraft, passengers, and cargo while on the ground. General aviation facilities primarily consist of hangars for aircraft, aircraft parking apron and terminal facilities. General aviation terminal facilities provide space for passenger waiting, pilots' lounge and flight planning, concessions, management, storage, and various other needs. At Des Moines general aviation facilities are located on three sides of the airport. Fixed base operator facilities are located on the north and east quadrants and aircraft storage facilities are located on the southwest side of the airport. There are also two major Des Moines area businesses with corporate hangars at the airport. These include the Meredith Publishing Company and Principal Financial Group.

Both corporate hangars are located on the north side of the airport. The Des Moines Independent School District also has a hangar/classroom facility located on the north side of the airport from which they operate a high school level aircraft maintenance program.

- **Military Facilities**

The 132nd Tactical Fighter Wing of the Iowa Air National Guard (IANG) occupies 171 acres of airport property at the northwest end of the airport. The IANG currently operates seventeen (17) F-16 aircraft from their facilities at the airport. Their airport facilities include hangars, offices, mess, medical, security, avionics and equipment and aircraft maintenance facilities along with such specialty facilities as an ammunition storage facility, engine run-up facility, ready alert facility for aircraft and crews and above ground fuel storage facilities. The Iowa Air National Guard has been a resident of the airport for over 60 years.

- **Fuel Facilities**

A consolidated fuel storage facility, owned and operated by a consortium of airlines, is located on the south side of the airport. The facility is managed by Signature Flight Support and has a storage capacity of 440,000 gallons of Jet A and 12,000 gallons of Avgas. Other fuel storage facilities on the airport include:

- East air cargo area -10,000 gallons of diesel fuel and 10,000 gallons of ethanol
- South air cargo area -10,000 gallons of diesel fuel and 10,000 gallons of ethanol
- City's field maintenance facility -10,000 gallons of diesel fuel and 10,000 gallons of ethanol
- FBO's -35,000 gallons of jet fuel and use of the airline's consolidated fuel storage facility
- Meredith Corporation Hangar -20,000 gallons of jet fuel
- Principal Financial Group -15,000 Gallons of jet fuel
- IANG -198,720 gallons of fuel storage for various types of fuel

- **Other Facilities**

The FAA owns and operates an air traffic control tower and an airway facilities office building both located on the north side of the airport. The airport owns and maintains an aircraft rescue and fire fighting (ARFF) facility also located on the north side of the airport with the facility used by the IANG in providing services to both military and civilian users of the airport. The airport also has field maintenance facilities and a storage yard located on the south side of the airport just southeast of the south air cargo facilities. These facilities are used for maintaining and storing airport maintenance equipment including tractors, snowblowers, snowplow, loaders, and various sizes of trucks.

- **Zoning**

Zoning in the vicinity of the airport is controlled by the City of Des Moines. According to the City of Des Moines Zoning Ordinance, the airport itself is zoned M-3, Limited Industrial District. Areas around the airport are zoned a mixture of residential and commercial. The Des Moines International Airport Height and Hazard Zoning Regulations were established by the city to monitor the height of structures

proposed for development within the various F.A.R. Part 77 airport height zones (horizontal, conical, approach, etc.) These regulations are administered by the city's zoning enforcement officer and enforced by the city's board of adjustment. A comprehensive land use plan known as Des Moines 2020 Community Character Plan has been adopted by the city. The plan depicts future land uses adjacent to the airport that will be compatible with safe operation of the airport.

EXISTING SERVICES

- **Commercial Services**

Currently nonstop scheduled commercial airline service is as follows:

Des Moines International

Carrier	Equipment	#Seats	Daily Departure	Non-stop Destination
Allegiant	MD-83	62	1	Las Vegas
Midwest	Boeing 717-200	88	1	Kansas City
Midwest	Boeing 717-200	88	1	Washington D.C.
Skyway/Midwest	Beech 1900	19	1	Milwaukee
Skyway/Midwest	Fairchild RJ	32	2	Milwaukee
Chautauqua/American	Embraer RJ-140	44	3	St. Louis
American Eagle	Embraer RJ-145	50	4	Chicago O'Hare
American Eagle	Embraer RJ-140	44	1	Chicago O'Hare
American Eagle	Canadair RJ 700	70	3	Dallas
American	MD-80	129	1	Dallas
American	Embraer RJ-145	50	1	Dallas
Chicago Express/ATA	Saab 340	34	5	Chicago/Midway
Express Jet/Continental	Embraer RJ-145	50	2	Houston
Freedom/America West	Canadair RJ-900	86	1	Las Vegas
Freedom/America West	Canadair RJ-900	86	2	Phoenix
Mesaba/Northwest	Avro RJ 85	89	2	Detroit
Mesaba/Northwest	Avro RJ 85	69	4	Minneapolis
Mesaba/Northwest	Saab 340	34	2	Minneapolis
Pinnacle/Northwest	Canadair RJ	50	2	Detroit
Pinnacle/Northwest	Canadair RJ	50	2	Memphis
Pinnacle/Northwest	Canadair RJ	50	1	Minneapolis
Northwest	DC9s	100	1	Minneapolis
Northwest	DC9	100	1	Minneapolis
Air Wisconsin/United	Canadair RJ	50	1	Chicago O'Hare
Air Wisconsin/United	Canadair RJ	50	1	Denver
Atlantic Coast/United	Canadair RJ	50	2	Chicago O'Hare
United	Boeing 737-300	149	1	Chicago O'Hare
United	Boeing 737-500	132	2	Chicago O'Hare
United	Boeing 737-500	149	3	Chicago O'Hare
United	Boeing 737-500	132	1	Chicago O'Hare
Comair/Delta	Canadair RJ	50	2	Atlanta
Comair/Delta	Canadair RJ-700	70	1	Atlanta
Comair/Delta	Canadair RJ	50	5	Cincinnati

Source: Des Moines International January 2004

In 2003 the airport accommodated over 900,000 enplaning passengers, 60% of the state's total enplaning passengers, with 63 daily departures. The airline services are provided from the passenger terminal building. Other major services provided from the passenger terminal include seven car rental companies, two restaurants/lounges, two gift shops, two ATM's, public information booth, business center, public conference rooms, curb side baggage check-in, common flight information display system (FIDS), public telephones, shared tenant telephone system and public wireless internet access.

The airport provides facilities and services to the following all-cargo carriers: United Parcel Service, Federal Express, DHL/Airborne Express, and Airnet Systems. In 2003 these carriers handled over 195,000,000 pounds of air cargo through the airport. This represented 79.7% of the total air cargo handled in the state during 2003.

Ground handling services for commercial passengers and all-cargo aircraft are provided at the airport by Swiss Port, Airport Terminal Services Inc., and Signature Flight Support.

- **General Aviation Services**

The airport is home to full service fixed-base operators (FBO) and one limited service FBO who provide aeronautical services to the general aviation public: Signature Flight Support, Elliott Flying Service, and Mid-America Jet Center. Aeronautical services provided by the FBO's include hangar rental, charter, aircraft rental, fuel (100LL, Jet A), power and airframe repair, aircraft sales, avionics sales and repair, and pilot instruction. FAR Part 135 charter operators are located on the airport. Each FBO has their own terminal facilities, which include pilot briefing room, restrooms, conference rooms, offices, pilot lounge, public lounge, and vending machines. The FBO's offer shuttle bus service and access to rental car services. Other off-site ground transportation is also available.

- **Other Services**

The airport is the only Port of Entry located in Iowa. As a Port of Entry, the Des Moines International Airport has on-site U.S. Customs, Immigration and U.S. Department of Agriculture inspectors. A customs facility, owned and maintained by the airport is provided for the convenience of shippers and travelers. The airport has an FAA operated air traffic control tower which provides services 24 hours per day, 7 days per week and aircraft rescue and fire fighting services, provided by the IANG, meeting FAR Part 139 requirements, available 24 hours per day, 7 days per week.

DES MOINES INTERNATIONAL AIRPORT (DSM)



Federal Role: Small Hub Primary Airport
State Role: Commercial Service Airport

CURRENT AND FORECAST DEMAND

Based aircraft at the airport totaled 88 aircraft in 2003 declining from a high of 239 in 1980. Of the 88 based aircraft, there were 44 single engine piston, seven multi-engine piston, fourteen (14) turbo prop, and twenty-three (23) turbojet aircraft. The number of based aircraft is forecast to increase to no fewer than 108 in 2022. Over the past two decades the number of general aviation based aircraft at the airport has declined by more than half. Most of the aircraft moving from the airport have been small, single engine aircraft. Some of these aircraft moved to a reliever airport that opened in 1993 on the north side of the metro area. More recently, some multi-engine propeller aircraft have also moved because of the closure of the airport's general aviation runway. It is reasonable to assume that Des Moines International Airport will continue to attract the majority of the business jet aircraft in the metropolitan area and should see the return of some of the lost general aviation activity when the airport's new 5,500 feet long general aviation runway is completed.

There were an estimated 96,118 total annual operations conducted in 2003. Of that total general aviation had 47,316 operations, commercial carriers had 43,601 operations, and the military had 5201 operations. The total number of operations is expected to increase to 150,971 in 2022.

OPERATIONAL ACTIVITY

	<u>2003</u>	<u>2007</u>	<u>2012</u>	<u>2022</u>	<u>% Change (2003-2022)</u>
Based Aircraft	88	92	97	108	23%
Annual Operations	96,118	139,959	146,093	150,971	57%
Itinerant Operations	41,120	52,056	52,056	54,983	34%
Local Operations	6,196	34,704	34,704	36,655	490%
Commercial Operations	43,316	47,998	54,132	54,132	25%
Military Operations	5,201	5,201	5,201	5,201	0%

The based aircraft mix and aircraft operational mix are expected to change over the 20 year planning period. Reference may be made to Chapter Four of the 2004-2024 Iowa Aviation System Plan for additional forecast data regarding:

- Based aircraft mix
- Operational mix
- Annual Instrument Approaches
- Annual Instrument Operations

AIRPORT FACILITY AND SERVICE NEEDS

The Des Moines International Airport has been classified as a Commercial Service airport and should provide facilities and services commensurate with its system role. Existing facilities and services at Des Moines meet or exceed system plan facility and service objectives.

Airport improvements identified by the airport that may be anticipated in the future include:

- Rebuild existing main runway (Runway 13-31)
- Acquire in fee title land to the west side of the Airport
- Construct a new general aviation runway parallel and space at 4,300 feet to Runway 13-31
- Increase number of 2nd level departure gates in the passenger terminal complex
- Expand concession areas in the 2nd level departure areas of the passenger terminal building
- Increase the size of the security screening area of the passenger terminal building
- Construct new in-line passenger baggage screening facility
- Construct additional field maintenance storage facilities
- Expand air cargo facilities on the south side of the airport
- Construct new west side general aviation facilities
- Construct new FAA air traffic control tower at mid-field location
- Construct new ARFF facility at mid-field location
- Plan for new mid-field passenger terminal

The opinion of probable cost is based on 2003 unit pricing.

OTHER RECOMMENDATIONS

With the change of security procedures since events of September 11, 2001, additional lanes need to be installed, equipped and staffed at the passenger screening area to reduce wait times and long lines. Also an in-line baggage screening system is needed in order to remove the congestion from the passenger terminal, main lobby area.

Consideration is being given to the phased construction of a third runway parallel to the airport's existing main runway. The initial phase will construct a new runway 5,500 feet in length to be used primarily by general aviation aircraft with plans to ultimately extend the new runway to 9000 feet for use by the commercial carriers as well. With the construction of this new general aviation runway the west side of the airport will become available for construction of new general aviation facilities. Also the airport has purchased sufficient land southwest of Runway 5-23 to permit that runway to be further extended if the need were to arise for the airport be asked to accommodate large transport aircraft desiring to flight fully load aircraft to international destinations.

Description	Prior Period	Authorized Project
	Actuals	Cost FY05-FY10
Land Acquisition - Runway 5/23 Extension	\$ 2,000,000	\$ 2,200,000
SW Development	\$ -	\$ 7,100,000
Passenger Loading Bridges	\$ 1,200,000	\$ 3,100,000
Construction - Runway 5/23 Extension	\$ 2,706,000	\$ 3,776,000
Miscellaneous Pavement Repairs	\$ 500,000	\$ 1,750,000
Chiller Update - Concourse	\$ -	\$ 450,000
Storm Water Improvements	\$ 268,000	\$ 468,000
Future Expansion & Development	\$ 490,000	\$ 940,000
Terminal Holdroom Expansion	\$ 1,050,000	\$ 7,910,000
Field Maintenance Facility	\$ 82,500	\$ 1,252,500
Terminal Area Landscaping	\$ 125,000	\$ 225,000
Land Acquisition - Runway 13R/31L	\$ 1,225,000	\$ 11,547,222
Security Improvements	\$ 961,340	\$ 1,052,451
Rehabilitation of Runway 13/31	\$ 2,074,000	\$ 7,325,000
West GA Development	\$ -	\$ 3,365,000
South Apron Cargo Building #32	\$ 1,525,625	\$ 2,184,219
Campus Network Infrastructure	\$ -	\$ 50,000
Canopy over Field Maintenance Fuel Island	\$ -	\$ 75,000
Full Depth Replacement of N. Elliott Aprons	\$ -	\$ 800,000
AACS Field Equipment Upgrade	\$ -	\$ 450,000
Full Depth Replacement of AirNet Aprons	\$ -	\$ 200,000
Full Depth Replacement of Signature Front Apron	\$ -	\$ 1,100,000
Outbound Baggage Make-up Belts	\$ -	\$ 325,000
Security Screening Area Expansion	\$ 460,000	\$ 4,060,000
Southeast Service Road Relocation	\$ 40,000	\$ 3,440,000
Airport Vehicle Enclosure	\$ 75,000	\$ 100,000
Airport Campus Telephone	\$ -	\$ 600,000
Airport Common Use Terminal Facilities	\$ -	\$ 500,000
Construction Runway 13R-31L	\$ -	\$ 36,000,000
Erosion Control	\$ -	\$ 40,000
Vehicle Fueling-Carwash	\$ -	\$ 750,000
Grand Total	\$ 14,782,465	\$ 103,135,392

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Airport Summary Reports can be found on the Office of Aviation website: www.iawings.com