Milford Airport – Fuller Field (4D8)

Airport Development Considerations

Milford Airport Commission

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Milford Airport (Fuller Field)

1 Introduction

Projecting future aviation demand is an important element in the airport planning process. Activity forecasts will be used in subsequent tasks to help justify future airside and land side facility developments. To estimate future aeronautical activity within the airport service area, consideration must be given to several variables to include:

- Historic and forecast aircraft ownership and activity trends statewide and nationally
- Aircraft ownership within the airport service area.
- Aircraft operations and purpose
- Airport service area demographics to include population and labor force characteristics.
- Airport facilities and availability and delivery of aeronautical services
- Airport role within the Iowa State Aviation System Plan and the National Plan of Integrated Airport Systems (NPIAS).

It is important to point out that activity forecasts are generally based on available information and perceived assumptions captured and discussed at a particular point in time. Aviation activity forecasts at rural general aviation airports are sensitive to such factors as hangar availability and lease costs, availability and delivery of aeronautical services and operations by a business that may choose to sell an airplane or acquire a less demanding airplane. Historic based aircraft and aircraft operations provide a base line from which future activity at the Milford (Fuller Field) can be projected. Because of these factors, aviation activity forecasts need to be monitored to ensure validity over time.

In preparing the aeronautical forecast, reference was made to several source documents that provide an overview of aviation trends.

- FAA Aerospace Forecast Fiscal Years 2021-2041
- FAA Terminal Area Forecast (TAF) 2020
- FAA National Based Aircraft Inventory Program
- FAA Traffic Flow Management System (TFMS)
- Iowa DOT Aviation System Plan 2020-2040
- FAA Aircraft Registry – Dickinson, Emmet, Osceola, Jackson, Clay, O'Brien, and Palo Alto Counties.

Projections of aviation activity for a combined facility (4D8, OF3) were prepared for the near-term (5 Year), mid- term (10 Year), and long-term (11-20 year). These projections are unconstrained and assume a single public owned airport may be develop and maintained.

The COVID pandemic, supply chain issues, inflationary trends and other national and global events have and will continue to have some impact on aircraft operational activity. The current cost to own and operation an airplane is a factor. Changing economic conditions to include

agricultural input costs and commodity prices will influence aviation activity. For example, there has been a recent trend by aerial applicators to cover crop application in addition to herbicides and pesticides.

2 National General Aviation Trends

The long-term outlook for general aviation activity (FY 2021 – 2041), forecasts an overall annual decrease in the number of fixed wing single (-0.9%) and multi-engine aircraft (-0.4%). The decrease in the number fixed wing piston powered aircraft is expected to be offset by an annual increase in the number of turboprop (0.6%) and jet (2.3%) aircraft. The FAA reports that the main drivers contributing to the decline in fixed wing piston powered airplane numbers are related to unfavorable pilot demographics, overall increasing cost of aircraft ownership, availability of lower cost alternatives for recreational usage and new aircraft deliveries not keeping up with an aging fleet. The turbine powered fleet is forecast to grow at an average annual rate of 1.6 percent a year within the period 2021 to 2042 with the turbo jet fleet increasing 2.3 percent a year. The FAA reports the drivers contributing to the increase in turbojets is related to corporate profits and growth in the U.S. GDP. The FAA forecast extends over a 20-year period and will experience times when the annual growth rates are not realized.

Table 1.1: U.S. Active General Aviation & Air Taxi Aircraft Fleet, Average Annual Change 2021-2041

Category	Avg. Annual Change
Fixed Wing Single Engine Piston	-0.9 %
Fixed Wing Multi-Engine Piston	-0. 4%
Fixed Wing Turboprop	0.6 %
Fixed Wing Turbojet	2.3 %
Rotorcraft Piston	0.9 %
Rotorcraft Turbine	1.6 %
Experimental	1.4 %
Light Sport	4.5 %

Source: FAA Aerospace Forecasts FY 2021-2041

The FAA forecasts the number of hours flown to increase an average of 0.6 percent per year through 2041. By category, fixed wing piston hours flown is forecast to decrease by 0.9 percent annually while turbine hours flown are forecast to increase. The forecast increase in turbine activity is based on an increase in the size of the business jet fleet. Hours flown by the turbo jet fleet are forecast to grow at an average annual rate of3.5 percent compared to turboprop airplanes at 1.0 percent. The pandemic years 2020 and 2021 realized a significant increase (21.6 %) in hours flown by turbojet airplanes used for corporate/business travel.

Table 1.2: U.S. General Aviation & Air taxi Hours Flown Average Annual Change 2021-2041

Category	Avg. Annual Change
Fixed Wing Single Engine Piston	-0.7 %
Fixed Wing Multi-Engine Piston	-0.3 %
Fixed Wing Turbo prop	1.0 %
Fixed Wing Turbo jet	3.5 %
Rotorcraft Piston	1.9 %
Rotorcraft Turbine	2.1 %
Experimental	2.7 %
Light Sport	4.5 %

Source: FAA Aerospace Forecast FY 2021-2041

The pilot population has changed over time due in part to the pandemic as well as regulatory requirements. As of 2022, there is a reported shortage of pilots holding airline transport certificates. Over the 20-year planning horizon, FAA forecast the number of airline transport certificates to grown annually at 0.7 percent. The number of private pilot and commercial pilots are forecast to decrease at an annual rate of 0.4 percent and 0.1 percent respectively. The sport category is forecast to increase annual by 2.7 percent through 2041. The number of instrument rated pilots are forecast to grow at 0.4 percent annually within the period 2021 to 2041.

Table 1.3: U.S. Active Pilots by Type (Excluding Students) Average Annual Change 2021-2041

Category	Avg. Annual Change
Recreational	-3.4 %
Sport Pilot	2.7 %
Private	-0.4 %
Commercial	-0.1 %
Airline Transport	0.7 %
Rotorcraft Only	1.5 %
Glider only	0.6 %
Instrument Rated	0.4 %

Source: FAA Aerospace Forecast FY 2021-2041

3 Iowa General Aviation Trends

The 2020 Iowa Statewide Aviation System Plan (2020 SASP) reported that between 2000 and 2019, based aircraft in Iowa increased 0.3 percent per year on average. Within the same period, based general aviation aircraft within the Four state FAA Central Region declined by 0.2 percent. The 2020 Iowa State Aviation System Plan anticipates that based aircraft numbers and operations will reflect national trends.

- No growth in the national active fleet over the next 10 years (2020-2030)
- Slow recovery of general aviation aircraft shipments and billings

- Continued slow growth projected for general aviation activity

The decline in the number of active single engine piston powered airplanes will have an impact on future based aircraft numbers, especially at low activity rural airports. Further contributing to a decrease in activity at rural airports is an aging pilot population and increasing cost related to acquiring and maintaining an aircraft.

The Iowa DOT 2020 SASP based general aviation aircraft forecast assumed that the growth in based aircraft at each airport will be equal to the rate of projected population growth. Given this scenario, it is reasonable the number of registered aircraft will reflect population trends within the airport service area.

The 2020 SASP reported that of the 2,519 based aircraft in 2019, single engine aircraft made up 87 percent of the general aviation fleet followed by multi-engine aircraft at seven (7) percent and jet at five (5) percent.
The number of based GA aircraft within Iowa is forecast to experience a compound annual growth rate (CARG) of 0.10 percent.

Table 1.4: Based GA Aircraft /Operations – Iowa, 2019-2039

	2019	2024	2029	2039	CARG 2019-2039
Based GA Aircraft	2,520	2,540	2,550	2,570	0.10%
GA Aircraft Operations	905,150	918,520	932,090	959,830	0.29%

Source: Iowa DOT 2020 Iowa State Aviation System Plan July 2021

The 2020 SASP operational forecast were based in part from data derived from the five (5) towered airports and FAA 5010 data. The 2020 SASP assumed that statewide general aviation operational activity over the 20-year time horizon will be representative of general aviation operational activity forecasted at the five (5) towered airports.

The 2020 SASP identified several areas statewide where an increase in activity may be expected.

- Increase delivery of turbojet, turboprop, and rotorcraft aircraft as well as light sport and experimental aircraft.
- Increase in business flying and “on demand” charter.
- Increased flight training activity due in part to pilot shortage nationwide
- Increasing numbers of unmanned aerial vehicles
- Alternative fuels

Th 2020 SASP also identified several areas representing the downside.

- Population changes in rural areas of the state suggest fewer pilots and based aircraft.
- Cost of purchasing and maintaining an aircraft.
- Number of single engine piston powered airplanes trending downward.

4 Area Airports

Table 1.5 summarizes registered aircraft for a seven (7) county area. With the exception of Dickinson and O'Brien County, the remaining counties referenced in the Table 2.5 are served by one (1) public owned airport facility. O'Brien County is served by three (3) public owned airports (SHL,2Y0,1Y9) while Dickinson County is served by the Milford (Fuller Field) and Spirit Lake Municipal. Of the public owned airports shown in table 1.5, all are in the National Plan of Integrated Airport Systems (NPIAS) with the exception of Milford (4D8), Spirit Lake (0F3), Paulina (1Y9), Primghar (2Y0) and Sibley (ISB) airports.

Not all airplanes registered in a county are necessarily based at a public owned airport located in the county. Some aircraft are based at private owned airports open to the public as well as private airstrips located on farms. To provide a comparison of registered by county to "based" at public/private owned, reference was made to the current (2022) FAA 5010 (http://www.airportiq5010.com) and the FAA Aircraft Registry (https://registry.faa.gov) Aircraft that are based at an airport supporting a turf runway may reposition the airplane during the winter months to an airport with a hard surfaced runway.

Within the seven (7) county area, there were 136 registered aircraft. There are 10 public owned airports reporting 137 based aircraft. The number of registered aircraft nearly equals the number of based aircraft reported at the 10 public owned airports.

1.5: Registered Aircraft/Based Aircraft – Public Owned Airport – Seven County Area 2022

County	Registered Aircraft	Based Aircraft
Dickinson	40	33 (0F3, 4D8)
Emmet	23	18 (EST)
Osceola	7	11 (ISB)
Jackson MN.	9	12 (MJQ)
Clay	25	31 (SPW)
O'Brien	20	22 (SHL,2Y0,1Y9)
Palo Alto	12	10 (EGQ)

Source: FAA Aircraft Registry July 2022; FAA Form 5010 July 2022

NOTE: Based aircraft numbers were taken from FAA Form 5010 must be verified. Non NPIAS airports are not required to participate in the National Based Aircraft Inventory Program. The National Based Aircraft Inventory Program data for a NPIAS airport is maintained by the airport owner's designated representative and is validated by FAA. Discrepancies (aircraft reported at more than one airport) are identified. The discrepancies reports must be resolved.

From Table 1.5 several observations may be made. There are six (6) more aircraft based at Spencer (SPW) than registered in Clay County. While Emmet County shows 5 more registered airplanes than the 18 based at Estherville (EST), it should note that Iowa Great Lakes College owns

11 of the 23 registered airplanes. As of June 2022, the FAA Registry reports 3,350 aircraft registered within the state.

The 2022 Iowa State Aviation System Plan forecasts the number of based airplanes and aircraft operations statewide to experience a modest increase within the period 2019 to 2029 followed by a decrease in based aircraft, but an increase in operations through 2039.

Table 1.6 Area Airports – Based Aircraft/Aircraft Operations – 2020 Iowa SASP, 2019-2039

Year	**2019**		**2024**		**2029**		**2039**	
Airport ID	Based Aircraft	Aircraft Ops	Based Aircraft	Aircraft Ops	Based Aircraft	Aircraft Ops	Based Aircraft	Aircraft Ops
ISB - Sibley	11	2,750	11	2,791	10	2,832	10	2,916
0F3-Spirit Lake	19	4,200	19	4,262	19	4,325	19	4,454
4D8-Milford	15	3,850	15	3,907	15	3,965	16	4,083
EGQ- Emmetsburg	10	2,250	10	2,283	10	2,317	10	2,386
SPW- Spencer	35	11,420	35	11,589	34	11,760	34	12,110
EST- Estherville	19	9,450	19	9,590	18	9,731	17	10,021
MJQ-Jackson *	12	4,200	13	4,550	14	4,900	14	4,900
SHL-Sheldon	17	8,017	17	8,135	16	8,256	16	8,501
2Y0-Primghar	-	-	-	-	-	-	-	-
1Y9-Paulina	6	1,750	6	1,776	6	1,802	6	1,856
Total								

Source: Iowa DOT 2020 Iowa State Aviation System Plan July 2021 * Minnesota SASP currently being updated. Estimated based on current based (12) aircraft and 350 operations per based aircraft.

5 Milford (Fuller Field) / Spirit Lake Municipal Airports

The airport service area associated with the Milford/Spirit Lake Airports is defined as encompassing the entire Dickinson County geographic area (380.5 square miles). The U.S. Census Bureau's population estimate (7-1-21) placed Dickinson County's population at 17,851. There are 12 incorporated cities within Dickinson County of which Spirit Lake is the largest with a population of 5,420 (July 1, 2021-est.) followed by Milford with 3,347. While the airport service area population increased just over 0.8 percent from 2010, the Cities of Spirit Lake and Milford recorded a population increase of 12.4 % and 14.6 % respectively.

Table 1.7: Incorporated Cities Population 2021 *

City	Population
Arnolds Park	1,155
Lake Park	1,172
Milford	3,347
Okoboji	772
Spirit lake	5,420
Terril	335
Wahpeton	352
West Okoboji	315
Orleans	524
Superior	133
Incorporated Cities	13,525

Source: https://www.iowadatacenter.org. *July1, 2021Estimate

In 1970, Dickinson County supported a residential population of 12,565 increasing to 17,703 in 2020. The airport service area population based on population estimates developed by Woods & Poole projects a continual increase in population through 2040.

Table 1.8: Airport Service Area Population Trend 1970-2020

1970	1980	1990	2020	2010	2020	2030*	2040*
12,565	15,629	14,909	16,424	16,667	17,703	19,225	20,405

Source: http://www.iowadatacenter.org * Woods & Poole

As previously noted, the 2020 Iowa State Aviation Systems Plan concluded that County population change was the preferred projection for based aircraft because of the correlation between aircraft ownership and population size. *The 2020 SASP shows the number of aircraft based at 0F3 and 4D8 experiencing little change in number from 34 (2019) to 35 by 2039. Based on the airport service area population and aircraft registrants, there is a greater number of aircraft in Dickinson County that typically experienced elsewhere in Iowa.*

Within rural areas of the state, aircraft owners locate their aircraft at a given airport taking into consideration hangar availability, aircraft storage cost and aeronautical services provided at the airport. For example, having an A&P rated mechanic on site appears to attract an aircraft even when another public owned airport may be closer. Other factors may be the location of aerial applicators that operate several aircraft as well as other specialized service providers: instruction, charter, aircraft rental and avionics

There are two (2) airports located in Dickinson County. There is approximately three (3) nautical miles between the Milford and Spirit Lake Airports. As of 2022, there were 40 aircraft listed on the FAA Registry (http://registry.faa.gov/aircraftinquiry) for Dickinson County.

Table 1.9: Dickinson County Registered Aircraft by Zip Code 2022

	N Number	City	Make Model
1	126H	Milford	Beech 1967
2	135JA	Milford	Beech 1967
3	2159Y	Milford	Cessna 172D
4	28TX	Milford	Cessna 650
5	300KB	Milford	Cessna 150
6	3366U	Milford	Cessna 182F
7	4018Y	Milford	Ayres Corp.S2R-T11
8	408RG	Milford	Robinson R44 II
9	4988Y	Milford	PA-25-260
10	502BT	Milford	Ag. Tractor AT-502B
11	5037K	Milford	Bellanca 7GCBC
12	512F	Milford	Raytheon 400A
13	5553T	Milford	Cessna 172E
14	56177	Milford	PA-32-300
15	5755E	Milford	Cessna 150
16	583MA	Milford	STOL CH 750
17	731CQ	Milford	Cessna A 188B
18	8192C	Milford	PA-18-150
19	7940R	Arnolds Park	Phantom 3
20	925CT	Arnolds Park	CTSW

	N Number	City	Make Model
21	144CG	Spirit Lake	NX Cub 1 LLC
22	2085E	Spirit Lake	Firefly Balloon
23	2875H	Spirit Lake	Ercoupe415-C
24	3637W	Spirit Lake	PA-32-260
25	3680H	Spirit Lake	Ercoupe 415-C
26	3770D	Spirit Lake	North Am. AT-6D
27	441RP	Spirit Lake	Sonerai II L
28	4554H	Spirit Lake	PA-15
29	656BG	Spirit Lake	Diamond DA-40
30	6913G	Spirit Lake	Cessna 150
31	7825M	Spirit Lake	PA-12
32	8336N	Spirit Lake	Beech V35A
33	9060M	Spirit Lake	Cessna 182P
34	9742Y	Spirit Lake	Beech 35-B33
35	3PE	Okoboji	Beech 58
36	4044Q	Okoboji	PA-28-236
37	4477S	Okoboji	Beech A36
38	4880W	Okoboji	Europa Classic
39	98DP	Okoboji	A-1B
40	9563W	Lake Park	PA-28-235

Source: FAA Registry (June 12, 2022)

Of the 40 aircraft registered in Dickinson County, 18 (45%) reported a Milford mailing address while 14 (35%) reported a Spirit Lake mailing address. Five (13%) of the aircraft owners were in Okoboji with two (2) reporting an Arnolds Park address and one (1) a Lake Park address.

6 Based Aircraft- Combined 0F3 and 4D8

For planning and design purposes, FAA groups airplanes by the aircraft approach speed; wingspan and tail height (See Table 1.10 and 1.11). FAA further defines airplanes by maximum certificated takeoff weight. A small airplane is defined as an aircraft 12,500 pounds or less maximum certificated takeoff weight. All the aircraft based at the two (2) airports as of June 2022 are classified as small airplanes except for the seasonal Air Tractor 602A and 802A. The AT 802A has a maximum takeoff weight of 16,000 pounds and is considered a 'large" airplane.

Table 1.10 and 1.11: Aircraft Approach Categories and Airplane Design Group

Aircraft Approach Category (AAC)	Approach Speed
A	Less than 91 knots
B	91 knots but less than 121 knots
C	121 knots but less than 141 knots
D	141 knots but less than 166 knots
E	166 knots or more

Airplane Design Group (ADG)	Wingspan
I	Less than 49 feet
II	49 feet but less than 79 feet
III	79 feet but less than 118 feet
IV	118 feet but less than 171 feet
V	171 feet but less than 197 feet
VI	197 feet but less than 262 feet

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

Tables 1.12 identifies aircraft based at 0F3 and 4D8 by aircraft approach speed and wingspan. Of the aircraft, there are 32 aircraft with an approach speed under 91 knots and a wingspan under 49 feet (A-I). There are two aircraft with a wingspan greater than 49 feet but less than 79 feet and an approach speed under 91knots (A-II).

Table 1.12: Based Aircraft 4D8 and 0F3 - 2022

Airport		N Number	Make/Model	Type	ARC
4D8	1	3PE	Baron (1)	SE	A-I
“	2	?	Ultralight	SE	A-I
“	3	3680H	Aircoupe 415C	SE	A-I
“	4	560CR	Light Sport	SE	A-I
“	5	56177	PA32-300	SE	A-I
“	6	351KA	Cessna 400	SE	A-I
“	7	3104A	S2R-T34	SE	A-1
“	8	126H	Bonanza V-35	SE	A-I
“	9	3366U	Cessna 182	SE	A-I
“	10	70BD	Bonanza DUCE	SE	A-1
“	11	3637W	PA-32-260	SE	A-1
“	12	1036E	Aeronca 7AC	SE	A-I
“	13	2875H	Aircoupe	SE	A-I
“	14	789BN	(1)	SE	A-I
“	15	?	Bonanza	SE	A-I
0F3	16	9742Y	Beech 35-B33	SE	A-I
“	17				
“	18				
“	19				
“	20				
“	21				
“	22				
“	23				
“	24				
“	25				
“	26				
“	27				
“	28				
“	29				
“	30				
“	31				
“	32				
“	33				
“	34				

Source: Airport Managers:
Unvalidated – (Not entered in the FAA National Based Aircraft Data Base.)
Source FAA Form 5010: 0F3=Spirit Lake (19 Based). 4D8=Milford (15 Based). Total Based 34.
(1) Not suitable for operation----see FAA National Aircraft Registry (9-12-22)
Note: Spirit Lake to provide “N” Number for based aircraft.

The Milford Airport is used by aerial applicators. Within the period 2017 to 2021, product was applied to an average of 19,000 to 25,000 acres annually severing between 55 and 70 farm

operations. The local estimate for 2022 was placed 26,000 acres and 34 farm operations. These aircraft have a wingspan between 49 and 79 feet. (FAA Design Code II)

Table 1.13 Air Tractor 602 and 802A

Aircraft	Take-off weight	Wingspan	Stall Speed Flaps Up	Stall Speed Flaps Down	Stall Speed Usual Landed	ARC
AT 602	12,500 lbs.	56 ft.	86 Knots	71 knots	52 Knots	A-II
AT 802A	16,000 lbs.	59.2 ft.	92 knots	79 knots	54 knots	A-II
AT 402B	9,170 lbs.	51ft.	71 knots	59 knots	46 knots	A-II
AT 502B	9,400 lbs.	52 ft.	71 knots	59 knots	46 knots	A-II

Source: https://airtractor.com/aircraft

While most discussions focus on the activation activity associated with tourism and second homes, the benefit extended to the agricultural sector is no less significant. Farm operators are finding in addition to the application of herbicides, fungicides and insecticides, the use of cover crops to manage their farm operations and enhance productivity and minimize erosion.

The number of airplanes based at a "combined" airport will likely experience little change over the 20-year planning period.

Table 1.14 Based Aircraft 4D8 / OF3 (Combined Airport) 2022-2041

Year	Total	A-I	A-II	B-I	B-II	C-I	C-II	Other	TAF *	SASP**
2022	34	32	2	0	0	0	0	***	NA	4D8 -15/0F3 - 19 (2019-34)
2026	34-35	32	3	0	0	0	0	***	NA	4D8 -15/0F3 -19 (2024-34)
2031	34-36	31	3	2	0	0	0	***	NA	4D8 -15/0F3 -19 (2029-34)
2041	36-38	31	3	3	1	0	0	***	NA	4D8 -16/0F3 - 20 (2039-36)

Source: HDR: * FAA Terminal Area Forecast Not Available, ** 2020 Iowa SASP, *** Balloon, Glider, Helicopter
4D8=Milford. 0F3=Spirit Lake

The reported based aircraft at Milford and Spirit Lake represents 85 percent of the registered aircraft in Dickinson County.

7 Aircraft Operations

An aircraft operation is defined as either a takeoff or landing. The 2020 Iowa SASP based its projection on the assumption that airports within the state would maintain their market share of the total general aviation operations at towered airports and FAA's projected growth in general aviation operations. Based on this scenario, the 2020 Iowa SASP concluded that general aviation operations would increase 0.29 per year within the period 2019 to 2039.

Table 1.15: Aircraft Operations 0F3 and 4D8

Airport	Based Aircraft (CARG 2019-2939)	2019	2024	2029	2038	GA Operations (CARG 2019-2039)
4D8	0.16%	3,850	3,907	3,965	4,083	0.29%
0F3	0.16%	4,200	4,262	4,325	4,454	0.29%
Combined Operations	-	8,050	8,169	8,290	8,537	-
Based Aircraft	-	34	34	34	36	-
Ops. /Based AC	-	236	240	244	237	-

Source: Iowa DOT: 2020 Iowa State Aviation Systems Plan. July 2021

The 2020 Iowa SASP projected the number of operations per based aircraft at would 0F3 and 4D8 would increase from 236 operations in 2019 to a projected 244 by 2029. Operations per based aircraft are reasonable. While FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems has been cancelled and replaced by FAA Order 5090.5 Formulation of the NPIAS and ACIP, it still provides some insight into activity at rural airports. FAA Order 5090.3C provided "operations per based aircraft" (OPBS) factors for several categories of including rural airports with minimal traffic (250 OPS/Based Aircraft) and those with more itinerant traffic (350 ops/based aircraft). The 2020 SASP projected operations from 2019 to 2038 is reasonable.

The FAA Form 5010 for 4D8 shows 3,850 total annual operations of which 3,089 (80%) were reported as itinerant operations with the balance referred to as local operations. A local operation is defined as an aircraft that operates within the local traffic pattern or within sight of an air traffic control tower; is known to be departing to for or arriving from local practice areas within 30-mile radius of the airport; or executes simulated instrument approaches or low passes at the airport. The higher number of itinerant operations reflects the number of operations by aerial applicators serving Dickinson County as well as minimal instructional activity. The FAA Form 5010 for 0F3 shows 4,200 operations of which 2,387 (57%) were reported as itinerant operations. The larger number of local operations at 0F3 would suggest more instructional activity than at 4D8. For purposes of this report, 70 percent of the total annual operation at a replacement airport are expected to consist of itinerant operations.

The FAA Traffic Flow Management System (TFMS) now provides more insight into aircraft operational activity. TFMS is designed to provide information on traffic county by airport. It includes data for flights under instrument flight rule (IFR) and captured by FAA enroute computes and ground-based radar. Most VFR and some en-route IFR traffic are not captured. TFMS data is created when pilots file a flight plan and or flights are detected by the National Airspace System (NAS). Automatic Depended Surveillance-Broadcast (ADS-B) data for properly equipped aircraft will provide additional information. ADS-B is the foundation of NextGen by moving from ground-based radar and navigational aids to precise tracking using satellite signals.

While TFMS data counts do not capture all the activity at 0F3 and 4D8, it does provide insight into operations where a flight plan was created. As previously noted, most VFR traffic is not captured, the counts do however provide an insight into aircraft using the airports.

Nearly all the aircraft operations are by small airplanes or those with a maximum takeoff weight 12,500 pounds or less. Nearly all have a wingspan under 79 feet and an approach speed less than 121 knots. Representative airplanes from the TFMS data using the Spirit Lake and Milford Airports are noted in the following tables.

Table 1.16: Representative Airplanes (Fleet Mix) Spirit Lake 2018 – 2021

Make/Model	Operations	ARC
Beech King Air 350	7	B-II
Beech King Air200	14	B-II
Beech King Air 90	11	B-I
Cessna 421	2	B-I
Cessna 425	17	B-I
Cessna Citation V/Ultra/Encore	52	B-II
Mooney M-20C	43	A-I
Cessna 182	11	A-I
TBM-7	A-I	163
TBM-850	A-I	43
TBM	A-I	4
Cirrus SR 22	A-I	156
Pilatus PC-12	A-II	79
Piper PA-34	A-I	45
Piper 32	A-I	24
Beech Bonanza	A-I	19

Source: FAA TFMS 2018-2021

Table 1.17: Representative Airplanes (Fleet Mix) Milford 2018-2021

Make/Model	Operations	ARC
Cessna 210	53	A-I
Lancair LC-41	50	A-I
Piper Cherokee Six	54	A-I
Cirrus SR-22	23	A-I
Beech Bonanza 35	A-I	8
Cessna 182	A-I	29
Mooney M-20C	A-I	7
Eurocopter EC-145	NA	2

Source: FAA TFMS 2018-2021

The representative fleet mix suggests that an airport developed to accommodate large airplanes with an approach speed less than 121 knots and a wingspan less than 79 feet would provide a reasonable level of service.

While there may be occasional activity by airplanes with an approach speed up to but not including 141 knots, the development of an airport to ARC C – II standards may be questionable in the foreseeable future.

8 Addendum NO 1- 2003 Airport Feasibility Study

The McClure Engineering Company completed an update to their 2003 Airport Feasibility Study in October 2021. Revisions and changes to the 2003 study were summarized and presented in in Addendum NO 1 entitled Iowa Great Lakes Region Airfield Feasibility/Evaluation Study-Update.

The update identified two (2) airport sites that could potentially be developed.

North Site: Diamond Lake Township (Section 33, T-100N, R-37W)
South Site: Lakeville Township (Section 27, T-99N, R-37W)

The Addendum also set forth a phasing scenario for each site and a proposed implementation strategy. It was noted that the City of Milford did not participate in study and had no input into the two (2) sites considered for airport development.

9 City of Milford - Position Statement

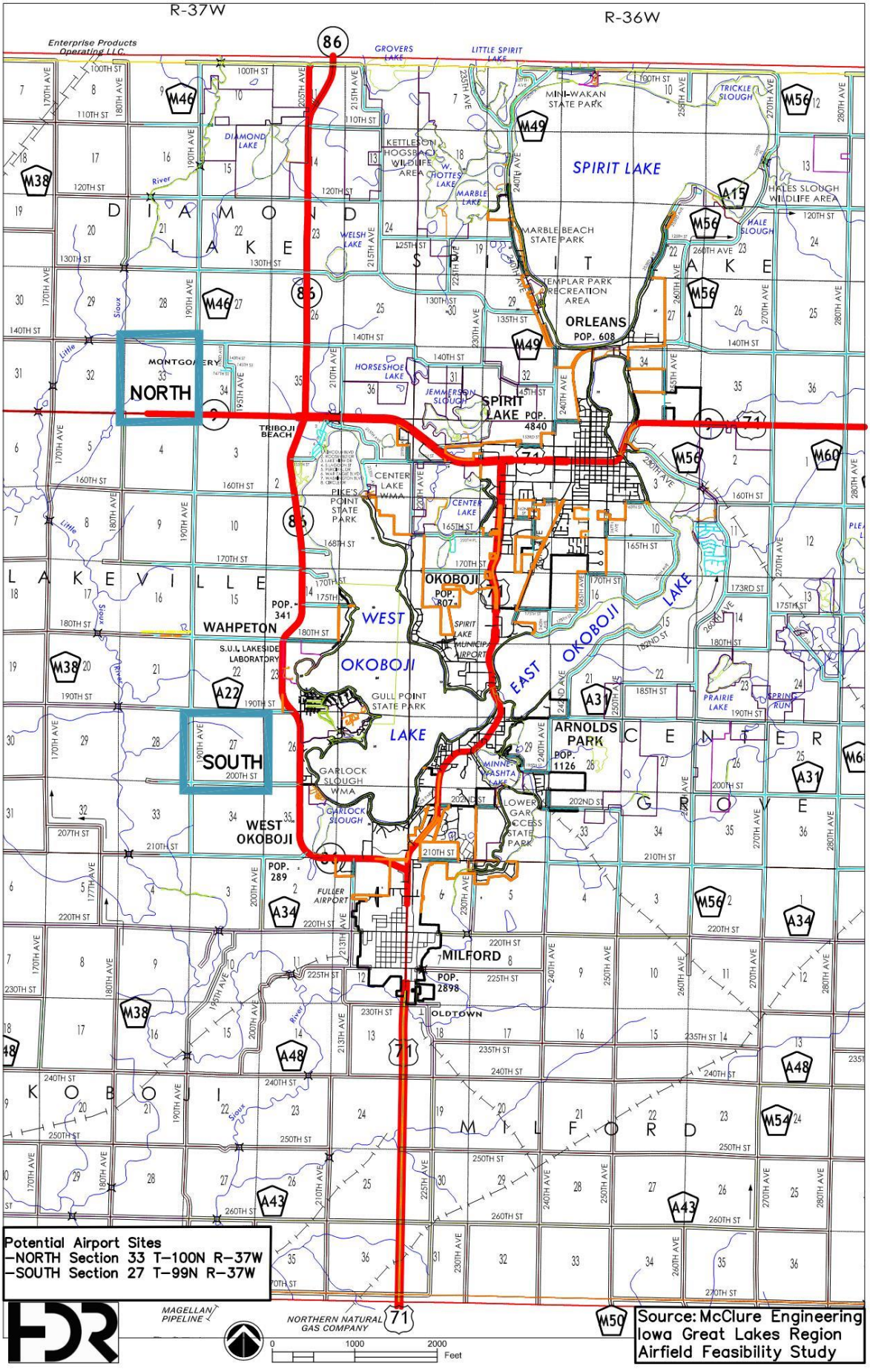
- The City of Milford supports the concept of a single public owned airport in Dickinson County.
- It was noted that the City of Milford did not participate in the preparation of McClure study entitled: Addendum NO 1: Iowa Great Lakes Regional Airfield Feasibility/Evaluation Study that identified the two (2) candidate sites.
- With respect to a preferred site, Milford would appear best served by the South Site or an alternative site in the immediate vicinity of the South Site.
    - The City of Milford would support the phasing scenario beginning with a runway 3,200 feet in length and ultimately developed to 4,200 feet
    - The City of Milford (based on foreseeable aeronautical activity) supports an airport developed to accommodate large airplanes with an approach speed less than 121 knots and a wingspan less than 79 feet. The City of Milford recognizes the need to accommodate aircraft and operations that support local business, tourism, and the agricultural sector.

    - The City of Milford believes that land acquired for the replacement airport be public owned. While property interests may be initially acquired by the private sector, the land having an aeronautical purpose must be deeded to the public entity created to own and operate the replacement airport. The newly created public entity if other than the City of Milford may lease land to the private sector for the purpose of constructing hangars or other vertical revenue generating facilities.
- The City of Milford is willing to work with other governmental entities to develop an airport to replace the Milford Airport and the Spirit Lake Airport. The City of Milford believes that a single public owned airport will have enough based airplanes to support a fixed base operator and enable to the airport to provide a range of aeronautical services that will sustain the airport well into the future.

- The City of Milford will require that a replacement airport for the existing Milford Airport (Fuller Field) be operational before the existing airport-Fuller Field is closed.

    - The City of Milford is willing to close and dispose of the existing Fuller Field airport assets and to invest revenue from the disposal of assets less related costs in development of a new airport.

There are obviously several implementation and financing scenarios that may be considered. It should be recognized (based on prior studies/discussion) inclusion in the NPIAS is unlikely and financial support from Iowa DOT will be limited.


R-37W
R-36W
Enterprise Products Operating LLC
GROVERS LAKE
LITTLE SPIRIT LAKE
MINI-WAKAN STATE PARK
TRICKLE SLOUGH
DIAMOND LAKE
KETTLESON HOGSBACK WILDLIFE AREA
W. OTTES LAKE
MARBLE LAKE
SPIRIT LAKE
HALES SLOUGH WILDLIFE AREA
MARBLE BEACH STATE PARK
MALE SLOUGH
WELSH LAKE
TEMPLAR PARK RECREATION AREA
ORLEANS
POP. 608
HORSESHOE LAKE
JEMMERSON SLOUGH
SPIRIT LAKE POP. 4840
NORTH
TRIBOJI BEACH
CENTER LAKE WMA
PIKE'S POINT STATE PARK
CENTER LAKE
OKOBOJI
POP. 807
WAHPETON
POP. 341
WEST OKOBOJI LAKE
SPIRIT LAKE MUNICIPAL AIRPORT
EAST OKOBOJI LAKE
S.U.I. LAKESIDE LABORATORY
GULL POINT STATE PARK
PRAIRIE LAKE
SPRING RUN
ARNOLDS PARK
POP. 1126
SOUTH
GARLOCK SLOUGH WMA
MINNE-WASHTA LAKE
LOWER GAR ACCESS STATE PARK
WEST OKOBOJI
POP. 289
FULLER AIRPORT
MILFORD
POP. 2898
OLDTOWN
Potential Airport Sites
–NORTH Section 33 T–100N R–37W
–SOUTH Section 27 T–99N R–37W
MAGELLAN PIPELINE
NORTHERN NATURAL GAS COMPANY
0 1000 2000 Feet
Source: McClure Engineering
Iowa Great Lakes Region
Airfield Feasibility Study