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Appendices

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Plan

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Appendix A

ACRONYMS



AC Advisory Circular

ADA Americans with Disabilities Act
ADPM Average Day Peak Month
AIP Airport Improvement Program

ALP Airport Layout Plan

ALSF High Intensity Approach Lighting System with Sequenced Flashers

AOA Aircraft Operations Area

ASSET Airport System Strategic Evaluation Task
ASOS Automated Surface Observation System
AWOS Automated Weather Observation System

BEA Bureau of Economic Analysis
BTS Bureau of Transportation Statistics

CEDDS Complete Economic and Demographic Data Sources
DEED Department of Employment and Economic Development

DNR Department of Natural Resources
DOT Department of Transportation
EA Environmental Assessment

EAS Essential Air Service

FAA Federal Aviation Administration
FAR Federal Aviation Regulation
FBO Fixed Based Operator
FOD Foreign Object Debris
GA General Aviation

GAATA General Aviation and Air Taxi Activity

GIS Graphic Information Systems
HIRL High Intensity Runway Lights

ICAO International Civil Aviation Organization

IFR Instrument Flight Rules
ILS Instrument Landing System

LASAC Local Air Service Action Committee
LIRL Low Intensity Runway Lights

LSA Light Sport Aircraft

LTCP Long Term Comprehensive Plan MAC Metropolitan Airports Commission

MALSR Medium Intensity Approach Lights w/Runway Alignment Indicators

MALSF Medium Intensity Approach Lights w/Sequenced Flashers

MEP Multi-Engine Piston Aircraft

MnSASP Minnesota State Aviation System Plan
MnDOT Minnesota Department of Transportation
MPO Metropolitan Planning Organization

MSA Metropolitan Statistical Area

Appendix A

ACRONYMS



MSP Minneapolis-St. Paul International Airport

NAS National Airspace System

NAVAID Navigational Aid Nm Nautical Miles

NPIAS National Plan of Integrated Airport Systems

ODAL Omni-Directional Approach Lights
OD1A Origin and Destination Survey
PAPI Precision Approach Path Indicator

PCI Pavement Condition Index

RDC Regional Development Commission
REIL Runway End Identifier Lights

RITA Research and Innovative Technology Administration

RNAV/GPS Area Navigation

SAC SASP Advisory Committee
SASP State Aviation System Plan
SEP Single Engine Piston Aircraft

SF Square Feet SY Square Yards

TAC Technical Advisory Committee

TAF Terminal Area Forecast TCMA Twin Cities Metro Area

TED Transportation Economic Development TERPS Terminal Procedure Publications

TP Turboprop

TSA Transportation Security Administration

TZD Toward Zero Deaths
UAV Unmanned Aerial Vehicles

VFR Visual Flight Rules

APPENDIX A ACRONYMS PAGE A-2





Inventory Paper Survey	B-2
Inventory On-line Survey	B-12





SASP Inventory Paper Survey



2011 Minnesota State Aviation System Plan INVENTORY DATA REQUEST

1. GENERAL INFORMATION	
Airport Name	Date of Survey
Total Airport AcreageA	irport Identifier
FAA Site Number	
Airport Manager Name	Manager Phone
Manager Phone 2 Manager E-ma	il Manager E-mail 2
Manager Street Address	
City State Zip	-
If you are not the Airport Manager	
Name and position of person completing survey	
Phone	
2. AIRPORT CHARACTERISTICS	
Airport has (select all that apply) Rotating Bea	acon Segmented Circle Wind Cone
☐ Lighted Wind	d Cone
Weather Reporting (type) - ASOS (Automated Surfa	ce Observation System) – AWOS (Automated Weather
Observation System) Select a Value: ASOS,	AWOS, None
Airport Reference Code (i.e. A-1, B-I)	
Source Select a Value: Airport Master Plan, Airp	ort Layout Plan, Other
If source other, please explain	Date of Source
Design Critical Aircraft (Type)	
Source Select a Value: Airport Master Plan, Airp	ort Layout Plan, Other
If source other, please explain	Date of Source
3. CURRENT AIRPORT USEAGE	
A. The Airport is used for the following purposes (s	elect all that apply)
Scheduled Air Carrier	☐ Environmental Patrol
☐ On-demand Charter	☐ Civil Air Patrol
☐ Corporate/Business Flights	Location for Community Facilities
☐ Recreational Flying	Police or Law Enforcement Flights
☐ Emergency Medical (air ambulance, etc.)	☐ Flight Training

Page 1 of 10





Inventory Paper Survey (Continued)

	Gateway for VIP/High Pr Search and Rescue Aerial Photography/Surv Real Estate Tours Aerial Inspections (pipeli Staging Area for Commu Aerial Advertising/Banne Skydiving Other (Please Separate	eying ne, electric, etc) nity Events r Towing	☐ Shippii ☐ Prison ☐ Traffic ☐ Aviatio ☐ Forest	luled Cargo ing of Just-in-time Goods ier Transport or News Reporting on Museum t Fire Fighting ultural Spraying	
B.	Total number of off-airpo Distance to nearest off-a Total number of acres of Total combined acres do	inesses (please separate	- iles)	nas)	
C.	Number of Multi Engine	tion tion ther e Aircraft Based at Airport Aircraft Based at Airport ircraft Based at Airport _ s at Airport	ort		
	SERVICES PROVIDED Air Taxi Hangar Rental Tie Downs Jet A Fuel Sales Aircraft Repair-Major Aircraft Repair-Minor Restaurant Skydiving	AT THE AIRPORT U.S. Customs/Immig Aircraft Rental 100LL Fuel Sales Mogas Fuel Sales Avionics Sales/Repa Vending Taxis Courtesy Vehicle	ir C	General Aviation Facilities Pilot Lounge Aircraft Sales Restrooms Public Telephone Car Rental Public Transportation/Bus Service Other (Please separate by commas)	

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Inventory Paper Survey (Continued)

5. AIRSIDE FACILITIES		
Please Add an Entry Below for Each Runway		
Designation (i.e. 17/35)		
Length (feet)		
Width (feet)		
Surface Type Select Asphalt, Asphalt-Concrete, C	oncrete, Turf, Other	
Other (Please Separate By Commas)		
Surface Treatment		
Select Grooved, Friction Course, Aggregate S	eal Coat, Rubberized Seal C	oat, Wire Comb, None, Othe
Other (Please Separate By Commas)		
Shoulder Select Paved, Unpaved, None		
Lights (Please Select One)	y runway lights)	
☐ MIRL (medium inte	ensity runway lights)	
☐ LIRL (low intensity	runway lights)	
Lights continued (Please Select All That Apply)	☐ Centerline Lights ☐ Non-standard	☐ Pilot Controlled☐ None
Parallel Taxiway Select Full, Partial, None		
Weight Bearing Capacity Under, Dual Dual Tander	m (DDT) Wheel Landing Gea	ır
Weight Bearing Capacity Under Dual Tandem (DT) Wheel Landing Gear	
Weight Bearing Capacity Under Dual Wheel (DW)	Landing Gear	
Weight Bearing Capacity Under Single Wheel (SW	/) Landing Gear	
Pavement Condition Index		
Runway End 1 (i.e. 17)		
Runway End 1 NAVAIDs (Please Select All That A	apply)	
	System with Rail)	
ODAL (Omnidirectional Approach Light Sys	stem)	
REIL (Runway End Identifier Lights)		
☐ PAPI (Precision Approach Path Indicator)		
☐ VASI (Visual Approach Slope Indicator)		
☐ Pilot Controlled		
Other (Please Separate By Commas)	_	
Runway End 1 Instrument Approach (Please Selection	ct All That Apply)	
☐ PI (Precision Instrument)		
APV - LPV - LNAV / VNAV		
APV - RNP		

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Inventory Paper Survey (Continued)

	☐ NPI (Non-Precision Instrument) ☐ NONE
Dun	way End 1 Macta Burguay Cafaty Area /DCA\ Standards
	way End 1 Meets Runway Safety Area (RSA) Standards S <i>elect</i> Yes, No, Yes With Exception, Do Not Know
	way End 1 Meets Clear Zone Standards
	Select Yes, No, Yes With Exception, Do Not Know
Expi	ain Runway 1 RSA and/or Clear Zone Exceptions
Run	way End 2 (i.e. 35)
Run	way End 2 NAVAIDs (Please <i>Select</i> All That Apply)
[MALSR (Medium-Intensity Approach Light System with Rail)
Ī	ODAL (Omnidirectional Approach Light System)
[REIL (Runway End Identifier Lights)
[PAPI (Precision Approach Path Indicator)
[☐ VASI (Visual Approach Slope Indicator)
[☐ Pilot Controlled
(Other (Please Separate By Commas)
Run	way End 2 Instrument Approach (Please Select All That Apply)
[☐ PI (Precision Instrument)
Ī	APV - LPV - LNAV / VNAV
[APV - RNP
ſ	□ NPI (Non-Precision Instrument)
-	NONE
Run	way End 2 Meets Runway Safety Area (RSA) Standards
	Select Yes, No, Yes With Exception, Do Not Know
	way End 2 Meets Clear Zone Standards
	Select Yes, No, Yes With Exception, Do Not Know
	ain Runway 2 RSA and/or Clear Zone Exceptions
6. I	LANDSIDE FACILITIES
A. A	Air Carrier Terminal
	Total Area (sq ft)
	Year Built
	ast Major Renovation Date
	Number of Loading Positions
	General Aviation Terminal

Page 4 of 10





Inventory Paper Survey (Continued)

	Total Area (sq ft)
	Year Built
	Last Major Renovation Date
C.	Administration Building
	Total Area (sq ft)
	Year Built
	Last Major Renovation Date
D.	Air Carrier Apron Area
	Total Area (sq yds)
E.	General Aviation Apron Area
	Total Area (sq yds)
F.	Air Cargo Hangar Facilities
	Total Area (sq ft)
	Year Built (Most Recent)
	Last Major Renovation Date
G.	Air Cargo Warehouse and Office Facilities
	Total Area (sq ft)
	Year Built (Most Recent)
	Last Major Renovation Date
H.	Air Cargo Apron Facilities
	Total Area (sq yds)
I.	Hangars
	T-Hangars
	Number of City Owned
	Number of Privately Owned
	Conventional Hangars
	Number of City Owned
	Number of Privately Owned
	Total Area (sq ft)
	Is there a waiting list for hangar space? Select a Value: Yes, No
	If so, number of aircraft on the list
	Number of aircraft owners on the wait list that would pay market price for new hangar space
	Number of Tie-downs for Transient Aircraft
	Paved
	Unpaved
	Number of Tie-downs for Based Aircraft
	Paved
	Unpaved
	Is there a waiting list for Tie-downs? Select a Value: Yes, No

Page **5** of **10**





Inventory Paper Survey (Continued)

	If so, number of aircraft on the list
J.	Fuel Type
	Mogas Capacity (gallons)
	100LL Capacity (gallons)
	Jet A Capacity (gallons)
K.	Perimeter Fencing
	Select a Value: Full, Partial, None
L.	Auto Parking Spaces
	Number of Spaces
	Terminal
	GA
	Employee
M.	FBO
	Please Add an Entry Below for Each FBO
	FBO Name
	FBO Contact
	FBO Telephone
7.	CURRENT BASED AIRCRAFT
٠.	Please indicate NUMBER of aircraft
	Single Engine Piston
	Multi-Engine Piston
	Turboprop
	Jet
	Non-Military Helicopter
	Glider
	Ultralight
	Military Fixed Wing
	Military Helicopter
	Other (indicate number and specify types(s) separated by commas
_	CURRENT ORFRATIONAL DATA
8.	CURRENT OPERATIONAL DATA
	Definition of Operation: an aircraft takeoff or a landing
	Busiest Month for Airport Operations
	Typical Peak Hour Number of Operations in Busiest Month Number of Operations on Busiest Day Number of Annual Operations (2010)
	Number of Annual Operations (2010)
	Number of Affidat Operations (2010)

Page 6 of 10



Estimated percentage of annual airport operations (100%)



Inventory Paper Survey (Continued)

Local	
Itinerant	
Estimated percentage of annual airport operations (100%)	
Business	
Leisure	
Flight Training	
. AIRPORT TRENDS	
Over the last five years, describe general trends experienced in the following categories	
evel of Commercial Passenger Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of Cargo Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of GA Business/Corporate Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of GA Training/Student Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of GA Recreational Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
Over the next five years, describe anticipated trends in the following categories	
evel of Commercial Passenger Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of Cargo Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of GA Business/Corporate Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of GA Training/Student Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
evel of GA Recreational Activity	
Select a Value: Significant Increase, Increase, About the Same, Decrease, Significant Decrease, Not Applicable	
0. AIRPORT PLANNING	
current Airport Improvements Underway	
constraints to Future Airport Expansion (zoning, environmental concerns, local laws, ordinances, etc.)	_
irport Master Plan	_
Plan is Underway Select a Value: Yes, No	
Approval Date	
Page 7 of 10	





Inventory Paper Survey (Continued)

Airport Layout Plan	
Plan is Underway Select a Value: Yes, No	
Approval Date	
Airport Safety Zoning Ordinance	
Ordinance is Underway Select a Value: Yes, No	
Approval Date	
Is the approved ordinance zoned for (please select all that apply)	
☐ Existing Runway(s)	
☐ Proposed Runway(s)	
☐ Ultimate Runway(s)	
Municipal Comprehensive Plan	
Plan is Underway Select a Value: Yes, No	
Approval Date	
Does Plan Coordinate with Airport Zoning Select a Value: Yes, No	
Strengths of Airport in terms of its current and future status within Minnesota's system of airports	_
Weaknesses that limit Airport's present and future development	_
Opportunities that could enhance the role played by the Airport	
Threats that could jeopardize the Airport's ability to effectively fulfill its mission	_
	_
44 Airnort Adoquacy	
11. Airport Adequacy Note the Adequacy of the Following	
Please Note "Not Applicable" as appropriate and provide additional explanations in Section 12 General	
Comments/Information	
Runway Length Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not	
Applicable	
Runway Width	
Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not	
Applicable	
Airfield Pavement Condition	
Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not	
Applicable	
Runway Instrumentation	
Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable	

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INVENTORY SURVEY



Inventory Paper Survey (Continued)

Taxiway Layout

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Taxiway Width

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Taxiway Pavement Condition

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Airfield Lighting

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Airfield Signage

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Airfield Capacity

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Aircraft Parking/Storage Capacity

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Auto Parking

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Taxi Service

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Rental Car Service

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Availability of Courtesy Car

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Surface Access

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Integration of Multi-Modal

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Transportation Modes

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

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INVENTORY SURVEY



Inventory Paper Survey (Continued)

Terminal/FBO Size

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Terminal/FBO Condition

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Aviation Fuel Storage Capacity

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Minimal Air Traffic Conflicts

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

Minimal Airspace Conflicts

Select a Value: Totally Adequate, Reasonably Adequate, Neutral, Somewhat Inadequate, Totally Inadequate, Not Applicable

12. General Comments/Information

Please provide any additional comments and/or information here	

INVENTORY SURVEY



Inventory On-line Survey

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



Welcome

The Minnesota Department of Transportation (Mn/DOT) Office of Aeronautics is preparing the 2011 Minnesota State Aviation System Plan (SASP). The SASP is a comprehensive 20-year plan for the development of airports and aviation in Minnesota. As part of this plan, an inventory survey of all the SASP airports is being completed. Please complete the questionnaire as your input is vital to this planning effort.

Respondents that complete the survey by 5:00 p.m. CDT on Friday, April 22, 2011, will be entered into a drawing to win an iPad provided by HNTB (one entry per airport). All surveys must be completed by 5:00 p.m. CDT on Friday, April 29, 2011.

If you have questions about the survey or to request a hard copy to fill out, please contact Todd Wright, HNTB Corporation, at (952) 345-5971 or twright@hntb.com. You can also contact Dick Theisen, Mn/DOT Office of Aeronaulics, at (651) 234-7192 or Dick Theisen@state.mn.us for questions regarding the SASP. Additionally, staff will be available to answer your questions at the 2011 Minnesota Council of Airports Conference (April 13-15).

This survey is separated into 12 sections. You can work through each section in order, or jump from section to section using the navigation. Please provide any additional information or comments in section 12.

You must select SAVE DATA on each page to record your edits and additions. Your updates will be available for further review or changes if you return to that page.

When you have completed all pages of the survey, select the SUBMIT SURVEY button to submit your completed survey. After submitting, you will no longer have access to the survey. Submittals before 5:00 p.m. CDT on Friday, April 22, will be entered into the iPad drawing.

The following browser versions are recommended for best performance:

- Internet Explorer 7+
- Firefox 3+
- Safari 4+
- Chrome 8+

Summaries of the survey responses will be included in the SASP report and GIS database being prepared as part of this study. For information about acronyms go to the Glossary of Airport Acronyms. Thank you for helping the Minnesota Department of Transportation obtain the most accurate picture of statewide airport conditions for this system

Continue to the Survey

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https://www.2011mnsaspsurvey.org/Welcome.aspx





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



	d. Our and Inform	-4:			
GENERAL INFORMATION	1. General Informa	ation			
AIRPORT CHARACTERISTICS	AIRPORT NAME			DATE C	F SURVEY
CURRENT AIRPORT USAGE					
SERVICES PROVIDED AT THE AIRPORT	TOTAL AIRPORT ACREAGE	AIRPORT IDENT	IFIER	FAA SIT	TE NUMBER
IRSIDE FACILITIES		TWM		11029.	9*A
ANDSIDE FACILITIES	AIRPORT MANAGER NAME		MANAGER PHON	ΙE	MANAGER PHONE 2
CURRENT BASED AIRCRAFT					
CURRENT OPERATIONAL DATA	MANAGER E-MAIL		MANAGER E-MAI	L 2	
IRPORT TRENDS					
IRPORT PLANNING	MANAGER STREET ADDRESS				
IRPORT ADEQUACY	CITY	STATE		ZIP	
BENERAL COMMENTS/INFORMATION					
Save Data	If you are not the Airport M	Manager:			
	NAME AND POSITION OF PERSO	ON COMPLETING SUF	RVEY		PHONE
Submit Survey					
By submitting this survey, you will no longer have access to the survey. Thank you for helping the Minnesota Department of Transportation obtain the most accurate picture of statewide airport conditions for this system plan.					

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Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



SENERAL INFORMATION	2. Airport Characteristics	
IRPORT CHARACTERISTICS	Airport has (select all that apply):	
CURRENT AIRPORT USAGE	ROTATING BEACON	
SERVICES PROVIDED AT THE AIRPORT	SEGMENTED CIRCLE	
AIRSIDE FACILITIES	■ WIND CONE	
ANDSIDE FACILITIES	LIGHTED WIND CONE	
CURRENT BASED AIRCRAFT	WEATHER REPORTING (TYPE) - ASOS (AUTOMATED SURFA	ACE OBSERVATION SYSTEM) - AWOS
CURRENT OPERATIONAL DATA	(AUTOMATED WEATHER OBSERVATION SYSTEM)	
NRPORT TRENDS		
NRPORT PLANNING	AIRPORT REFERENCE CODE (I.E. A-I, B-II)	SOURCE
NRPORT ADEQUACY		
GENERAL COMMENTS/INFORMATION	IF SOURCE OTHER, PLEASE EXPLAIN	DATE OF SOURCE
Save Data	DESIGN CRITICAL AIRCRAFT (TYPE)	SOURCE
Submit Survey	IF SOURCE OTHER, PLEASE EXPLAIN	DATE OF SOURCE
By submitting this survey, you will no longer have access to the survey. Thank you for helping the Minnesota Department of Transportation obtain the most accurate picture of statewide airport conditions for this system plan.		

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INVENTORY SURVEY



Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



GENERAL INFORMATION	3. Current Airport Usage
AIRPORT CHARACTERISTICS	A The Airport is used for the following purposes (select all that apply):
CURRENT AIRPORT USAGE	SCHEDULED AIR CARRIER
SERVICES PROVIDED AT THE AIRPORT	ON-DEMAND CHARTER
AIRSIDE FACILITIES	CORPORATE/BUSINESS FLIGHTS
LANDSIDE FACILITIES	RECREATIONAL FLYING
CURRENT BASED AIRCRAFT	☐ FLIGHT TRAINING
CURRENT OPERATIONAL DATA	SCHEDULED CARGO
AIRPORT TRENDS	SHIPPING OF JUST-IN-TIME GOODS
AIRPORT PLANNING	☐ PRISONER TRANSPORT
AIRPORT ADEQUACY	☐ TRAFFIC OR NEWS REPORTING
GENERAL COMMENTS/INFORMATION	☐ AVIATION MUSEUM
	☐ FOREST FIRE FIGHTING
Save Data	AGRICULTURAL SPRAYING
0.1-20	☐ ENVIRONMENTAL PATROLS
Submit Survey	☐ CIVIL AIR PATROL
By submitting this survey, you will no longer have access to the	☐ LOCATION FOR COMMUNITY FACILITIES
survey. Thank you for helping the Minnesota Department of	POLICE OR LAW ENFORCEMENT FLIGHTS
Transportation obtain the most accurate picture of statewide airport conditions for this system plan.	EMERGENCY MEDICAL (AIR AMBULANCE, ETC.)
conditions for this system plant	GATEWAY FOR VIP/HIGH PROFILE VISITORS
	SEARCH AND RESCUE
	AERIAL PHOTOGRAPHY/SURVEYING
	☐ REAL ESTATE TOURS
	AERIAL INSPECTIONS (PIPELINE, ELECTRIC, ETC.)
	STAGING AREA FOR COMMUNITY EVENTS
	☐ AERIAL ADVERTISING/BANNER TOWING
	OTHER (PLEASE SEPARATE BY COMMAS)





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

TOTAL NUMBER OF ON-AIRPORT INDUSTRIAL PARKS			PARKS	TOTAL NUMBER OF OFF-AIRPORT INDUSTRIAL PARKS			
DISTANCE	TO NEARE	ST OFF-AIRPO	RT INDUSTRI	AL PARK (MILE	ES)		
	ABINED AC	RES OF ALL IN	DUSTRIAL	TOTAL	COMBINED ACRE	ES DEVELOPE	D
PARKS				_			
TENANTS C	R TYPES (OF BUSINESSE	ES (PLEASE S	EPARATE BY	COMMAS)		
AIRPORT U	SAGE BY II	NDUSTRIAL PA	ARK TENANTS	(PLEASE SEF	PARATE BY COM	MAS)	
c Majo	r Airport	Users and (Off-Airport [Dependent I	Business:		
Please Add	an Entry B	elow for Each	Businesses				
Company	Contact	Contact	Number of	Number of	Number of	Number of	Number of
	Name and	Telephone Number	Single Engine	Multi Engine	Turboprop Aircraft Based	Business Jets Based	Helicopter Based at
	Position		Aircraft	Aircraft		at Airport	Airport
			Based at Airport	Based at Airport			
Company:							
Contact Nan	me and Posi	tion:					
Contact Tele	phone Num	nber:					
Contact Tele	ephone Num	nber:					
		nber: e Aircraft Based	at Airport:				
			d at Airport:				
Number of S	Single Engin						
Number of S	Single Engin	e Aircraft Basec					
Number of S Number of I	Single Engin	e Aircraft Basec	at Airport:				
Number of S Number of I	Single Engin	e Aircraft Basec	at Airport:				
Number of S Number of M	Single Engin Multi Engine Furboprop A	e Aircraft Based e Aircraft Based Aircraft Based at	at Airport:				
Number of S Number of M	Single Engin Multi Engine Furboprop A	e Aircraft Basec	at Airport:				
Number of S Number of I Number of I	Single Engin Multi Engine Furboprop A Business Jets	e Aircraft Based Aircraft Based at	at Airport: Airport:				
Number of I Number of I Number of E	Single Engin Multi Engine Furboprop A Business Jets	e Aircraft Based e Aircraft Based Aircraft Based at	at Airport: Airport:				
Number of S Number of I Number of I	Single Engin Multi Engine Furboprop A Business Jets	e Aircraft Based Aircraft Based at	at Airport: Airport:				
Number of S Number of I Number of I	Single Engin Multi Engine Furboprop A Business Jets	e Aircraft Based Aircraft Based at	at Airport: Airport:				
Number of S Number of I Number of I	Single Engin Multi Engine Furboprop A Business Jets	e Aircraft Based Aircraft Based at	at Airport: Airport:				





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



GENERAL INFORMATION	4. Services Provided At The Airport			
AIRPORT CHARACTERISTICS	Select all that apply:			
CURRENT AIRPORT USAGE	U.S. CUSTOMS/IMMIGRATION			
SERVICES PROVIDED AT THE AIRPORT	☐ TIE DOWNS			
AIRSIDE FACILITIES	AIRCRAFT REPAIR - MAJOR			
LANDSIDE FACILITIES	AIRCRAFT REPAIR - MINOR			
CURRENT BASED AIRCRAFT	☐ RESTAURANT			
CURRENT OPERATIONAL DATA	VENDING			
AIRPORT TRENDS	☐ RESTROOMS			
AIRPORT PLANNING	☐ PILOT LOUNGE			
AIRPORT ADEQUACY	SKYDIVING			
GENERAL COMMENTS/INFORMATION	☐ GENERAL AVIATION FACILITIES			
	☐ AIRCRAFT RENTAL			
Save Data	☐ JET A FUEL SALES			
0.1-20	100LL FUEL SALES			
Submit Survey	MOGAS FUEL SALES			
By submitting this survey, you will no longer have access to the	AVIONICS SALES/REPAIR			
survey. Thank you for helping the Minnesota Department of	COURTESY VEHICLE			
Transportation obtain the most accurate picture of statewide airport	☐ AIR TAXI			
conditions for this system plan.	HANGAR RENTAL			
	☐ AIRCRAFT SALES			
	PUBLICTELEPHONE			
	☐ CAR RENTAL			
	PUBLICTRANSPORTATION/BUS SERVICE			
	TAXIS			
	OTHER (PLEASE SEPARATE BY COMMAS)			

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5. Airside Facilities	
Designation (i.e. 17/35)	
Length (feet):	
Width (feet):	
Surface Type:	Other (Please Separate By Commas):
Surface Treatment:	Other (Please Separate By Commas):
Shoulder:	
Lights (Please Select One):	
HIRL (High Intensity Runway Lights)	
MIRL (Medium Intensity Runway Lights	5)
LIRL (Low Intensity Runway Lights)	
Lights continued (Please Select All That	Apply):
Centerline Lights	
Pilot Controlled	
Non-Standard	
• None	
Parallel Taxiway:	
Weight Bearing Capacity Under Dual Dual Tande	em (DDT) Wheel Landing Gear:
Weight Bearing Capacity Under Dual Tandem (D	T) Wheel Landing Gear:
Weight Bearing Capacity Under Dual Wheel (DW	/) Landing Gear:
Weight Bearing Capacity Under Single Wheel (S	W) Landing Gear:
Pavement Condition Index:	





Runway End 1 (i.e. 17):
Runway End 1 NAVAIDs (Please Select All That Apply):
 MALSR (Medium-Intensity Approach Light System with Rail) ODAL (Omnidirectional Approach Light System) REIL (Runway End Identifier Lights) PAPI (Precision Approach Path Indicator) VASI (Visual Approach Slope Indicator) Pilot Controlled
Other (Please Separate By Commas): Runway End 1 Instrument Approach (Please Select All That Apply)
PI (Precision Instrument) APV - LPV - LNAV / VNAV APV - RNP NPI (Non-Precision Instrument) NONE
Runway End 1 Meets Runway Safety Area (RSA) Standards: Runway End 1 Meets Clear Zone Standards: Explain Runway 1 RSA and/or Clear Zone Exceptions:





Runway	End 2 (i.e. 35):
Runway	End 2 NAVAIDs (Please Select All That Apply):
	MALSR (Medium-Intensity Approach Light System with Rail) ODAL (Omnidirectional Approach Light System) REIL (Runway End Identifier Lights) PAPI (Precision Approach Path Indicator) VASI (Visual Approach Slope Indicator)
Other (Pl	ease Separate By Commas):
Runway	r End 2 Instrument Approach (Please Select All That Apply):
	PI (Precision Instrument) APV - LPV - LNAV / VNAV APV - RNP NPI (Non-Precision Instrument) NONE
Runway	End 2 Meets Runway Safety Area (RSA) Standards: End 2 Meets Clear Zone Standards: Runway 2 RSA and/or Clear Zone Exceptions:





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



Tventory ourvey			TWO TRAN
GENERAL INFORMATION	6. Landside Faci	lities	
NRPORT CHARACTERISTICS	A Air Carrier Terminal:		
:URRENT AIRPORT USAGE	TOTAL AREA (SQ FT)	YEAR BUILT	LAST MAJOR RENOVATION DAT
ERVICES PROVIDED AT THE AIRPORT			
IRSIDE FACILITIES	NUMBER OF LOADING POSITI	ONS	
ANDSIDE FACILITIES			
URRENT BASED AIRCRAFT	B General Aviation Ter	minal:	
URRENT OPERATIONAL DATA	TOTAL AREA (SQ FT)	YEAR BUILT	LAST MAJOR RENOVATION DA
IRPORT TRENDS			_
IRPORT PLANNING	c Administration Buildi	ng:	
IRPORT ADEQUACY	TOTAL AREA (SQ FT)	YEAR BUILT	LAST MAJOR RENOVATION DA
ENERAL COMMENTS/INFORMATION			
	D Air Carrier Apron Are	oar.	33334
Save Data	TOTAL AREA (SQ YDS)	sci.	
	TOTAL AREA (00 TD0)		
Submit Survey			
By submitting this survey, you will	E General Aviation Apr	on Area:	
no longer have access to the survey. Thank you for helping the	TOTAL AREA (SQ YDS)		
Minnesota Department of Transportation obtain the most			***************************************
accurate picture of statewide airport conditions for this system plan.	F Air Cargo Hangar Fa	cilities:	
	TOTAL AREA (SQ FT)	YEAR BUILT (MOST RECENT)	LAST MAJOR RENOVATION DAT
	G Air Cargo Warehous	e and Office Facilities:	
	TOTAL AREA (SQ FT)	YEAR BUILT (MOST RECENT)	LAST MAJOR RENOVATION DA
	H Air Cargo Apron Fac	ilities:	
	TOTAL AREA (SQ YDS)		
	101000000000000000000000000000000000000		
	I Hangars:		
	T-Hangars:		





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

NUMBER OF CITY OWNED	NUMBER OF PRIVATELY OWNED	
Conventional Hangars:		
NUMBER OF CITY OWNED	NUMBER OF PRIVATELY OWNED	TOTAL AREA (SQ FT)
IS THERE A WAITING LIST FOR	R HANGAR SPACE?	
IF SO, NUMBER OF AIRCRAFT	ON THE LIST	
NUMBER OF AIRCRAFT OWNE THAT WOULD PAY MARKET PR HANGAR SPACE		
Number of Tie-downs for Trans	sient Aircraft:	
PAVED UN	IPAVED	
Number of Tie-downs for Based	d Aircraft:	
IS THERE A WAITING LIST FOR	R TIE-DOWNS?	
IF SO, NUMBER OF AIRCRAFT	ON THE LIST	
J Fuel Type: MOGAS CAPACITY (GALLONS)	100LL CAPACITY (GALLONS)	JET A CAPACITY (GALLONS)
K Perimeter Fencing:		
L Auto Parking Spaces:		
TERMINAL GA	EMPLOYEE	





Inventory On-line Survey (Continued) Minnesota State Aviation System Plan

Please Add an Entry Below f	or Each FBO		
BO Name:]
BO Contact:			1
BO Telephone:			1
, ,			





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



ENERAL INFORMATION	7. Current Based Aircraft
IRPORT CHARACTERISTICS	Please indicate NUMBER of aircraft
CURRENT AIRPORT USAGE	SINGLE ENGINE PISTON
ERVICES PROVIDED AT THE AIRPORT	
IRSIDE FACILITIES	MULTI-ENGINE PISTON
ANDSIDE FACILITIES	
URRENT BASED AIRCRAFT	TURNARDA
CURRENT OPERATIONAL DATA	TURBOPROP
NRPORT TRENDS	
IRPORT PLANNING	JET
IRPORT ADEQUACY	
GENERAL COMMENTS/INFORMATION	NON-MILITARY HELICOPTER
Save Data	GLIDER
Submit Survey	ULTRALIGHT
By submitting this survey, you will	OLIRADONI
no longer have access to the survey. Thank you for helping the Minnesota Department of Transportation obtain the most accurate picture of statewide airport conditions for this system plan.	MILITARY FIXED WING
	MILITARY HELICOPTER
	OTHER (INDICATE NUMBER OF AND SPECIFY TYPE(S) SEPARATED BY COMMAS)

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Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



GENERAL INFORMATION AIRPORT CHARACTERISTICS CURRENT AIRPORT USAGE SERVICES PROVIDED AT THE AIRPORT	8. Current Ope Definition of Operation: an a	ircraft takeoff or a landing.	TYPICAL PEAK HOUR NUMBER OF OPERATIONS IN BUSIEST MONTH
AIRSIDE FACILITIES LANDSIDE FACILITIES CURRENT BASED AIRCRAFT	NUMBER OF OPERATIONS	ON BUSIEST DAY	NUMBER OF ANNUAL OPERATIONS (2010)
CURRENT OPERATIONAL DATA AIRPORT TRENDS	Estimated percentage	of annual airport op	erations (100%)
AIRPORT PLANNING AIRPORT ADEQUACY	Estimated percentage	of annual airport op	erations (100%)
GENERAL COMMENTS/INFORMATION Save Data	BUSINESS	LEISURE	FLIGHT TRAINING
Submit Survey By submitting this survey, you will			
no longer have access to the survey. Thank you for helping the Minnesota Department of Transportation obtain the most accurate picture of statewide airport conditions for this system plan.			

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	Overthe	last five vests	describe the	reneral transle	aversion and in	the fell		
1 .	Over the	iast live years,	describe the g	general trends	experienced in	the roll	owing categ	ones.

	Significant Increase	Increase	About the Same	Decrease	Significant Decrease
Level of Commercial Passenger Activity Level of Cargo Activity Level of GA Business/Corporate Activity Level of GA Training/Student Activity Level of GA Recreational Activity					
b. Over the <u>next five years</u> , describe ar	nticipated trends	in the followin	g categories:		
	Significant Increase	Increase	About the Same	Decrease	Significant Decrease
Level of Commercial Passenger Activity Level of Cargo Activity					
Level of GA Business/Corporate Activity					
Level of GA Training/Student Activity Level of GA Recreational Activity					





Minnesota State Aviation System Planventory On-line Survey (Continued)

2011 Minnesota State Aviation System Plan **Inventory Survey** 10. Airport Planning GENERAL INFORMATION CURRENT AIRPORT IMPROVEMENTS UNDERWAY AIRPORT CHARACTERISTICS CURRENT AIRPORT USAGE CONSTRAINTS TO FUTURE AIRPORT EXPANSION (ZONING, ENVIRONMENTAL CONCERNS, LOCAL LAWS, SERVICES PROVIDED AT THE AIRPORT AIRSIDE FACILITIES LANDSIDE FACILITIES Airport Master Plan CURRENT BASED AIRCRAFT PLAN IS UNDERWAY: CURRENT OPERATIONAL DATA AIRPORT TRENDS APPROVAL DATE AIRPORT PLANNING AIRPORT ADEQUACY Airport Layout Plan GENERAL COMMENTS/INFORMATION PLAN IS UNDERWAY: APPROVAL DATE Save Data Submit Survey Airport Safety Zoning Ordinance By submitting this survey, you will ORDINANCE IS UNDERWAY no longer have access to the survey. Thank you for helping the Minnesota Department of APPROVAL DATE Transportation obtain the most accurate picture of statewide airport conditions for this system plan. IS THE APPROVED ORDINANCE ZONED FOR (please select all that apply): EXISTING RUNWAY(S) PROPOSED RUNWAY(S) ULTIMATE RUNWAY(S) Municipal Comprehensive Plan PLAN IS UNDERWAY: DOES PLAN COORDINATE WITH AIRPORT ZONING:

https://www.2011mnsaspsurvey.org/Survey.aspx

Appendix B INVENTORY SURVEY



Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

STRENGTHS OF ARPORT IN TERMS OF ITS CURRENT AND FUTURE STATUS WITHIN MINNESOTA'S SYSTEM OF AIRPORTS
WEAKNESSES THAT LIMIT AIRPORT'S PRESENT AND FUTURE DEVELOPMENT
OPPORTUNITIES THAT COULD ENHANCE THE ROLE PLAYED BY THE AIRPORT
OPPORTONITIES THAT COULD ENHANCE THE ROLE PLATED BY THE AIRPORT
THREATS THAT COULD JEOPARDIZE THE AIRPORT'S ABILITY TO EFFECTIVELY FULFILL ITS MISSION

Appendix B





Inventory On-line Survey (Continued)

11. AIRPORT ADEQUACY

Note the Adequacy of the Following.

Please Note "Not Applicable" as appropriate and provide additional explanations in Section 12 General Comments/Information.

	Totally Adequate	Reasonably Adequate	Neutral	Somewhat Inadequate	Totally Inadequate
Runway Length Runway Width Airfield Pavement Condition Runway Instrumentation	- Adequate	- Adequate			
Taxiway Layout Taxiway Width Taxiway Pavement Condition	<u>=</u>				
Airfield Lighting Airfield Signage Airfield Capacity					
Aircraft Parking/Storage Capacity Auto Parking	<u> </u>		\equiv	=	=
Taxi Service Rental Car Service Availability of Courtesy Car	=				
Surface Access Integration of Multi-Modal Transportation Modes	_		<u> </u>	=	
Terminal/FBO Size Terminal/FBO Condition	=				
Aviation Fuel Storage Capacity					
Minimal Air Traffic Conflicts Minimal Airspace Conflicts			\equiv		

Appendix B





Inventory On-line Survey (Continued)

Minnesota State Aviation System Plan

2011 Minnesota State Aviation System Plan

Inventory Survey



GENERAL INFORMATION	12. General Comments/Information	
AIRPORT CHARACTERISTICS	PLEASE PROVIDE ANY ADDITIONAL COMMENTS AND/OR INFORMATION HERE:	
CURRENT AIRPORT USAGE		
SERVICES PROVIDED AT THE AIRPORT		
AIRSIDE FACILITIES		
ANDSIDE FACILITIES		
CURRENT BASED AIRCRAFT		
CURRENT OPERATIONAL DATA		
AIRPORT TRENDS		
AIRPORT PLANNING		
AIRPORT ADEQUACY		
GENERAL COMMENTS/INFORMATION		
Save Data		
0010 0 000		
Submit Survey		
By submitting this survey, you will		
no longer have access to the		
survey. Thank you for helping the		
Minnesota Department of		
Transportation obtain the most accurate picture of statewide airport		

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FORECAST TECHNICAL REPORT

C.1 Introduction

The purpose of this appendix is to provide more detailed information on the assumptions and methodologies used to develop the forecasts presented in **Chapter 3: Forecast**. These forecasts are used identify future capacity shortfalls, calculate future costs, estimate future revenue streams, and measure and enhance the overall benefit of aviation to the state.

This appendix is organized as follows: baseline activity levels are established, and parameters that potentially have an impact on air traffic level are discussed. Major forecast assumptions are then discussed. Forecast passenger demand and commercial operations are estimated afterwards. Cargo volume and operations are then projected employing various forecasting techniques. The next section focuses on future GA fleet mix and operations. The last section provides peak hour activity forecasts.

C.2 Base Year Activity Level

Base year passenger enplanements and airline operations were obtained from the FAA TAF, BTS T100 and airport records. The cargo statistics were primarily based on the BTS T100 and airport records. The base year passenger and cargo activity levels were established by compiling data from these data sources. Base year GA data for system airports were provided by the Minnesota Department of Transportation (DOT) through an inventory survey.

In the forecast, the GA aircraft and operations were analyzed for each of the following aircraft categories:

- Single Engine Piston (SEP)
- Multi-Engine Piston (MEP)
- Turboprop (TP)
- Jet (JET)
- Light Sport Aircraft (LSA)
- Military (MIL)
- Other (OTH) such as helicopters and gliders

Data for MSP and the MAC relievers were obtained from the previous Long Term Comprehensive Plans (LTCPs) prepared by HNTB in 2006 and 2009. The based aircraft and operations at the six MAC reliever airports were adjusted to match the state survey results. However, after consulting with MAC staff, the statistics for MSP were kept without adjustment as they are believed to better reflect current operations. Figure C-1 and Figure C-2 illustrate the total base year aircraft and operation statistics at system airports. A detailed based aircraft breakdown is shown in Table C-1 on page C-33.

The state inventory survey also provides operations by type (local and itinerant) and purpose (business, leisure and training). To assess facility requirements in the future, it is necessary to estimate operations generated by each aircraft category.



FORECAST TECHNICAL REPORT

Figure C-1: Number of Based Aircraft in Minnesota – Base Year 2010 Pinecreek Warroad Hallock Roseau Karlstad International Falls Baudette Stephen Littlefork Grygla Warren Waskish (Orr Big Falls Thief River Falls Crookston **Grand Marais** Cook Red Lake Falls Ely Bigfork Fertile Bagley Bemidji Hibbing Eveleth Silver Bay Grand Rapids Mahnomen Walker Park Rapids Hawley Moorhead McGregor Cloquet Duluth Sky Harbor Pelican Rapids Brainerd Fergus Falls Legend Elbow Lake Little Falls Alexandria 0 - 25Wheaton Long Prairie 26 - 50 Glenwood Sauk Centre Princeton 51 - 100 Ortonville Cambridge 101 - 200 Appleton Litchfield Madison Willmar 201 - 450 Winsted Montevideo St. Paul Hutchinson Granite Falls Olivia South St. Paul Canby Hector Minneapolis-St. Paul Glencoe Redwood Falls Marshall Le Sueur Red Wing New Ulm Tracy Springfield Mankato Sleepy Eye Winona Pipestone Slayton Windom Waseca Worthington Wells Albert Lea Preston Fairmont Austin

Sources: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



FORECAST TECHNICAL REPORT

Figure C-2: Number of GA Operations in Minnesota – Base Year 2010 Pinecreek Warroad Hallock Roseau Karlstad International Falls Baudette Stephen Littlefork Grygla Warren Waskish (Orr hief River Falls Big Falls Grand Marais Red Lake Falls Bigfork Bowstring Bemidji Hibbing Silver Bay **Grand Rapids** Mahnomen Walker Park Rapids Hawley Backus Longville Moorhead McGregor Cloquet Pelican Rapids Duluth Sky Harbor Fergus Falls Legend Little Falls Alexandria 200 - 5,000 Wheaton Herman 5,001 - 10,000 Glenwood Princeton 10,001 - 25,000 Starbuck Ortonville Cambridge 25,001 - 50,000 Appleton Litchfield Madison Murdock 50,001 - 102,500 Montevideo St. Paul Hutchinson Olivia South St. Paul Granite Falls Flying Cloud Minneapolis-St. Paul Glencoe Marshall Red Wing New Ulm Tracy Springfield watonna Sleepy Eye Winona Pipestone Slayton Waseca Dodge Center Rushford Worthington Jackson Vells Albert Lea Fairmont Caledonia Blue Earth

Sources: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



FORECAST TECHNICAL REPORT

To convert the number of based aircraft to operations, an operation rate table was developed. The operation rate is the ratio of operations to based aircraft for each category. The operation rate for each aircraft category was calculated using the Federal Aviation Administration (FAA) General Aviation and Air Taxi Activity survey (GAATA). This rate was multiplied by the based aircraft to estimate operations. The results were then adjusted proportionally to match the inventory survey operations at each system airport.

Table C-2 on page C-34 demonstrates the baseline operation breakdowns at each system airport. It also includes operations by trip type including local operations and itinerant operations and purpose including business, leisure and training operations.

The inventory survey gathered percentage by trip type and purpose data for most airports. For airports where such information is missing, the following assumptions were made: First, for facilities without based aircraft, all operations were assumed to be itinerant leisure trips. Airports without based aircraft tend to be very small, and usually cannot accommodate the higher performance aircraft favored by business general aviation. Second, the FAA Terminal Area Forecast (TAF) provides historical and forecast data for airports in the National Plan of Integrated Airport Systems (NPIAS). If the airport in question had local / itinerant operation breakdowns from the FAA TAF, they were used. Finally, if the airport did not have local / itinerant operation breakdowns from the TAF, then the overall average breakdown from the other system airports was applied to the airport.

C.3 Previous Forecasts

C.3.1 2006 State Aviation Systems Plan

The most recent state aviation system plan for Minnesota was completed in 2006ⁱⁱⁱ. Since then the aviation industry has witnessed one of the most severe recessions in history. Passenger demand

dropped sharply and in turn significantly impacted airlines' profitability. Coupled with record high oil prices, the airlines faced pressure from both weaker demand and higher operating costs. In response, several airlines filed for bankruptcy and completed several mergers that consolidated both legacy and low-cost carriers. Subsequently, their networks were re-evaluated and system wide frequency and route reductions were made. Airlines also turned to additional revenue streams such as baggage, meal, and priority seating assignment fees. As a result, most major airlines were able to weather the most recent recession.

Due to the factors mentioned above, the 2006 Systems Plan markedly overestimated passenger enplanements in 2010 compared to actual 2010 enplanements.

C.3.2 Metropolitan Airport Council (MAC) Regional Aviation System Plan

GA activity and airline service were also forecasted in the MAC Regional Aviation System Plan^{iv} for MSP, six MAC administrated reliever airports, as well as South St. Paul, Surfside Seaplane Base, and Wipline Seaplane Base.

Forecasts on MSP and other six MAC administrated reliever airports were adopted from the MAC Long Term Comprehensive Plans (LTCPs). Other GA airports forecasts applied a bottom-up approach for each individual airport after reviewing existing Master Plans, FAA TAF, and State Aviation Systems Plan. The LTCPs for the reliever airports were updated in two phases. The first study that includes Crystal, Airlake, and Lake Elmo was completed in 2006. Anoka County, Flying Cloud and St. Paul downtown were analyzed in the second report in 2009.

The first report was written before the oil price hike, the financial market crash, and the subsequent recession. At the height of a long expansion, the U.S. economic outlook was optimistic in 2006. Oil prices



FORECAST TECHNICAL REPORT

were on the rise but below \$80 per barrel. As a result, the 2006 report over estimates the aviation activity level at most airports.

When the second study was completed in 2009, the recession was ending and oil prices were well below the historical peak in 2008. However, the U.S. economic recovery has been slower than anticipated since the technical end of the recession. Oil prices climbed to more than \$80 per barrel again in 2010 after dropping to around \$40 per barrel in April 2009^v. All the factors above contributed to an optimistic based aircraft and operations forecast in the LTCPs.

C.4 Passenger Enplanements and Commercial Operations Forecast

Passenger enplanements and operations at airline service airports are influenced by local socio-economics, airport service characteristics, airline strategy, and other external factors including convenience and security. A combination of these factors was considered in the Plan to examine the potential correlation between passenger enplanements and independent factors.

C.4.1 Relevant Factors

Key factors determining air passenger activity are the economy which determines the size of the potential market and the cost of the service which determines how much of the potential demand is actually realized. Other important factors are competition, whether from other airports, other transportation modes, or other options for the expenditure of discretionary dollars. Finally, adequate infrastructure is needed, both at the airport and to provide access to the airport, so that the demand can be accommodated. This section focuses on the following factors: demographic and socioeconomic factors, fuel prices, air fares, ancillary fees, high speed rail, airline consolidations and out-of-state airports.

Demographic and Socioeconomic Factors

Historical records and future forecasts of Minnesota state population are available from both the Minnesota State Demographer's Office^{vi} and Woods & Poole's Complete Economic and Demographic Data Source (CEDDS) database^{vii}. Figure C-3 shows two data sources have perfectly aligned historical figures and slightly different forecasts. The Minnesota State Demographer's Office predicts higher growth in the near term whereas the CEDDS produces higher forecasts in the long run. The forecast from the Minnesota State Demographer's Office is adopted in this study as the state agency processes better knowledge on local trends and constraints. The average annual growth rate from 2011 to 2030 from both forecasts is around 0.96%.

The Demographer's Office only produces forecasts on population and labor force. Therefore other key socio-economic parameters such as total income, per capita income and employment were obtained from the Woods & Poole CEDDS database and the Bureau of Economic Analysis (BEA)viii. The Woods & Poole data is adjusted with the latest BEA statistics at the base year and horizon years. Figure C-4 and Figure C-5 show the CEDDS historical and projected total income and employment information for Minnesota. From 2011 to 2030, state personal income is expected to grow at an average of 2.18% each year according to the Woods & Poole forecasts. For the same planning period, the state employment figure is projected to increase by an average rate of 1.17% annually.

Historically, the state enjoyed a higher than average employment growth rate than the U.S. average (1.84% annually compared with U.S. average of 1.63% from 1970 to 2010). This trend is expected to continue according to Woods & Poole, whose forecasts estimate the state employment growth rate to be slightly higher than average. Meanwhile, the state total income growth rate is projected to be



FORECAST TECHNICAL REPORT

slightly lower than the overall U.S. average, consistent with historical trends. Population growth, however, has trailed the U.S. overall pace from 1970 to 2010; U.S. population grew 1.05% annually whereas the state grew 0.83% each year. Based on the Woods & Poole CEDDS, the U.S. population

increase will slow to an annual rate of 0.94% while the state will accelerate to 0.96%.

Historical and projected socioeconomic growth by county is shown in Figure C-23 to Figure C-28 beginning on page C-43 Two areas are projected to experience the fastest development in the state.

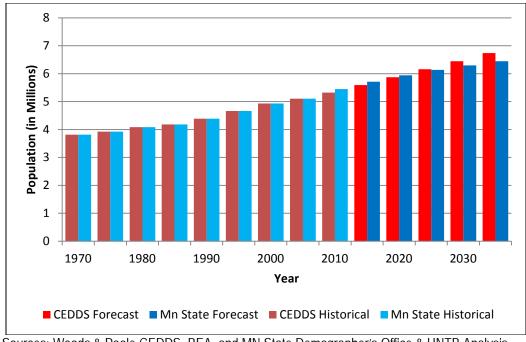


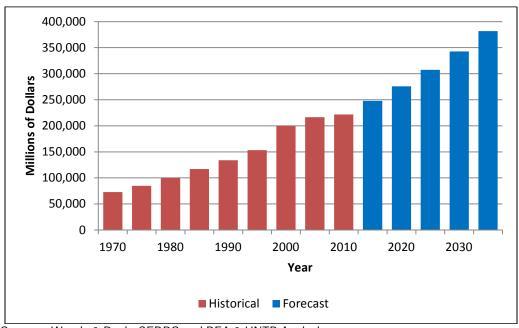
Figure C-3: Historical and Projected Population in the State of Minnesota

Sources: Woods & Poole CEDDS, BEA, and MN State Demographer's Office & HNTB Analysis



FORECAST TECHNICAL REPORT

Figure C-4: Historical and Projected Total Personal Income in the State of Minnesota (in 2010 Dollars)



Sources: Woods & Poole CEDDS and BEA & HNTB Analysis



FORECAST TECHNICAL REPORT

4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5

2000

■ Historical ■ Forecast

Year

2010

2020

2030

Figure C5-: Historical and Projected Employment in the State of Minnesota

Sources: Woods & Poole CEDDS and BEA & HNTB Analysis

1980

1990

0.0

1970



FORECAST TECHNICAL REPORT

The first area encompasses suburban counties surrounding the Twin Cities area including Carver, Dakota, Washington, Chisago, Scott, Isanti, Sherburne, and Wright counties. These counties also comprise part of the Minneapolis - St. Paul -Bloomington Metropolitan Statistical Area (MSA). The more urban counties including Hennepin, Anoka and Ramsey are expected to experience more moderate growth. The second area consists of the Brainerd Micropolitan Statistical Area including Cass and Crow Wing counties. Thanks to rich natural resources, tourism and low county taxes ix, these two counties are projected to witness the fastest growth in the outstate area.

Jet Fuel Prices

Fuel has become the largest expense category for airlines, as a result of the recent price spike. Figure C-6 illustrates jet fuel prices in the past and FAA forecasts for the future (in 2010 dollars)*. Jet fuel prices rose from 2000 to 2008. Particularly in 2008, oil prices spiked and thus substantially increased airline operating costs. The latest FAA forecast predicts jet fuel prices to fluctuate between 220 cents/gallon to 260 cents/gallon. At the time this report was written, the market price was 305 cents/gallon*i, well above the FAA's forecast.

The fuel price comprises a significant operating cost component for both commercial and general aviation and thus was tested as an independent forecast variable in the subsequent forecast analysis.

Air Fares

One-way Air fares were gathered from the BTS Airline Origin and Destination Survey (OD1A)^{xii} for the Greater Minnesota airports. It is a 10% sample of airline tickets sold and is collected by the Office of Airline Information of the BTS. Figure C-7 shows air fares from 1990 to 2010 in 2010 dollars. Generally speaking, average one-way domestic air fares in Minnesota declined from around \$300 in 1990 to

\$175 in 2010. Recently average air fares rebounded due to airline consolidation, reduced frequency and routes, and the need to cover higher operating costs.

Air fares play an important role in passenger's transportation mode choice and were tested as a candidate forecast variable in passenger forecast. It is worth noting the air fares are no longer the sole out-of-pocket expenses for passengers. Additional charges such as ancillary fees are discussed in the next section.

Ancillary Fees

Airlines have turned to additional revenue streams such as baggage fees, reservation change fees, seat assignment fees and on-board sale of food and drink. The new ancillary fees substantially benefit the airline bottom line. On the other hand, it increases the out-of-pocket cost for passengers. It is usually considered as part of the air travel costs to passengers while making travelling mode choices.

Out-of-State Airports

Some Minnesota passengers use out-of-state airports. Therefore, the current status and forecasts of several out-of-State airports that historically served Minnesota passengers are examined. Figure C-8 shows the out-of-state airports considered in this study.

Three airports, including Grand Forks International, Fargo Hector International, and Sioux Falls Regional – Joe Foss Field, are located west of the state. The relative proximity between Grand Forks and Thief River Falls indicates potential service area overlap. The Grand Forks airport holds an advantage in terms of facilities and air service frequency with Delta serving MSP and Allegiant Air serving Las Vegas and Phoenix/Mesa. The other two out-of-state airports are relatively far from other Minnesota commercial airports and therefore have less competitive impact. According to published airport master plans, passenger demand at Fargo International is projected



FORECAST TECHNICAL REPORT

to grow 2.4% annually through 2020^{xiii} and 2.5% annually at Sioux Falls Regional Airport^{xiv}.

Three commercial airports are located southeast of the state. Chippewa Valley Regional Airport in Eau Claire is close to two major airports in the state, Minneapolis - St Paul and Rochester. The only scheduled service currently offered from Eau Claire is from/to Chicago O'Hare by United Express. The limited route and frequency options at Eau Claire are not expected to divert substantial Minnesota passenger traffic away from MSP or Rochester. The La Crosse Municipal Airport, which serves southeast Minnesota counties including Houston, Winona and Fillmore, offers flights to MSP by Delta and Chicago O'Hare by American Airlines. The Mason City Municipal Airport offers two daily commuter flights to MSP via Delta Connection. Delta recently notified Mason City of their intention to suspend service under the Essential Air Service (EAS) contract. At the time this report was written, the US DOT was soliciting EAS interest from other airlines. According to the Iowa Aviation System Plan 2010-2030, operations at the airport are projected to grow 1.25% annuallyxv.

In conclusion, only the Grand Forks airport is expected to divert significant passenger demand from the commercial airports in Minnesota. Forecasted passenger demand is adjusted at Thief River Falls as a result.

High Speed Rail

Plans for a high speed rail line connecting the Twin Cities to Chicago along the Mississippi River were recently approved by the Minnesota DOT and the Federal Railroad Administration^{xvi}. The proposed 110 mph high-speed rail line is expected to reduce travel time between the Twin Cities and Chicago by more

than two hours xvii. If the project materializes, it is expected to divert considerable origin-destination passenger demand along the proposed corridor from airline service airports, especially between Minneapolis – St. Paul International airport and Chicago O'Hare / Midway airports.

However, as the national debate over the merit of high-speed rail continues, it is uncertain when the proposed high-speed rail line will be implemented. Due to this uncertainty, it is assumed that high-speed rail will not divert significant traffic from airline service airports in the State.

Airline Consolidations

Several major airline consolidations were completed in the last few years. Northwest Airlines merged with Delta Air Lines to form the world's largest carrier at the timexviii. In 2010, Continental Airlines merged with United Airlines to form the current largest airline in the world. In addition to legacy airlines, low cost carriers, Southwest Airlines and AirTran Airways, also merged in 2010. The system wide capacity reduction facilitated by the mergers and economic downturn has resulted in fewer enplanements and operations than previously forecasted at most airline service airports in the State.

Among these mergers, the State of Minnesota is particularly influenced by the Northwest and Delta merger. With their headquarters located in the State, Northwest Airlines operated Minneapolis – St. Paul International airport as an important hub with extensive in-state and out-of-state network. This merger was considered as an influential factor to model passenger enplanements.



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350 In 2010 Dollars (Cents per Gallon) 300 250 200 150 100 50 2000 2005 2010 2015 2020 2030 2025 Year - Historical **--** Recommended

Figure C-6: Jet Fuel Prices

Source: FAA Aerospace Forecast 2011 - 2031

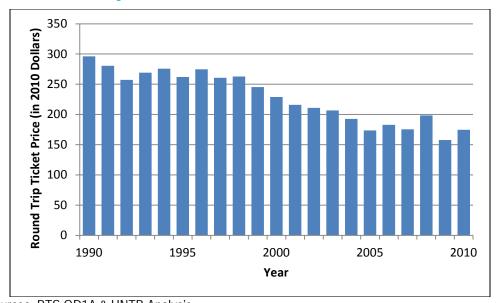


Figure C-7: Historical Air Fare in the State of Minnesota

Sources: BTS OD1A & HNTB Analysis



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International Falls Thief River Falls **Bemidji** Fargo Duluth Legend Commercial Service (8) Commercial Service Out-of-State Minneapolis-St. Paul Eau Claire Rochester Sioux Falls **Mason City**

Figure C-8: Out-of-State Airline Service Airports

Sources: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



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C.4.2 Assumptions

In addition to the forecast factors discussed above, additional assumptions were prepared to help guide the passenger forecast.

Economic Assumptions

It is assumed that no major economic downturn, such as the Great Depression or Great Recession, will occur in the planning period. The state and the U.S. economy will increase and decrease according to normal business cycle.

Out-of-State Airports

None of the out-of-state airports will divert significant amount of passenger flow from commercial airports in the state except the Grand Forks airport. The airport is expected to attract a substantial share of the passenger traffic from Thief River Falls. Therefore passenger forecasts for Thief River Falls are scaled down based on historical statistics.

National Airspace System

The forecast is developed under the assumption that the National Airspace System (NAS) will accommodate the unconstrained aviation demand. No major bottlenecks affecting Minnesota airports will develop either en-route or in the terminal area.

Airline Consolidation and Strategy

No further airline consolidation is assumed in the study. Airlines serving the commercial airports in the state will continue to operate their current flight networks. As a baseline forecast, it is assumed no new routes will be established or new airline service airports will be developed. No radical changes in airline strategy as how to serve and compete in markets are assumed.

National and Local Policy

Commercial airports that operate under the Essential Air Service agreement will continue to offer federal subsidized air service. It is also assumed no new environmental concerns will impact traffic characteristics in the state.

C.4.3 Passenger Enplanements and Operations Forecast

Several airports in the state of Minnesota currently offer airline service including:

- Minneapolis-St. Paul International
- Duluth International
- Rochester International
- Bemidji Regional
- Brainerd Lakes Regional (Brainerd, MN)
- Ranger Regional (Hibbing, MN)
- Falls International (International Falls, MN)
- Thief River Falls Regional

Passenger traffic at MSP was analyzed in the LTCP and thus not in the scope of this report. Historical passenger traffic at system airports was obtained from the Air Carrier Statistics T100xix from the Bureau of Transportation Statistics (BTS).

Regression analysis was employed to estimate future passenger enplanements. Regression analysis is a statistical tool used to investigate correlations between two sets of variables. The first set of variables, commonly referred as dependent variables, represents what need to be estimated. The second set of variables, commonly referred as independent variables, represents known factors. To use regression analysis in forecasting, projections of independent variables should be available. A correlation analysis should be conducted to investigate the relationship between casual effect of independent variables and dependent variables. If such the relationship in the historical data is statistically significant, a regression equation can be constructed reflecting the correlation between two sets of variables. Assuming this correlation continues in the future, dependent variables can be estimated using forecasts of independent variables. Sometimes



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dummy variables are introduced as independent variables. They assume the values of 0 or 1 to represent the absence or presence of certain difficult-to-quantify factors that may shift the outcome.

Four types of independent variables were assessed. Firstly, a set of socioeconomic data within each airport's catchment area was derived from Woods & Poole's CEDDS including population, total income, per capita income and employment. They represent demand side characteristics. Secondly, supply side parameters such as scheduled flights from OAGxx, number of aircraft departures recorded by T100, fare samples from the BTS OD1A and jet fuel prices from FAA were collected. The third group consists of other events that have important impacts on passenger activity in the state. This category includes Northwest Airline's bankruptcy filing in 2005 and Sep-11 terrorist attack in 2001. Lastly, a group of intercept shift dummy variables for each airport were also incorporated (see Figure C-29 on page C-49).

Airport catchment areas were established for each commercial airport based on driving time. To determine this, 2010 census data was imported into GIS and linked to the Minnesota road network system. The borders of the catchment area show where the population would have an equal drive time between two airports. The areas highlighted in Figure C-9 depict the "catchment area" for each SASP commercial airport. Figure C-9 shows the catchment areas for the eight airline service airports, as well as the six airline service airports in adjacent states. Airline service airports were assumed to only draw out-of-state population within 100 miles. Note that the catchment areas in Figure C-9 are based on drive time only. Other factors, notably the availability of air service, also influence which airport a passenger will use. Because of MSP's superior air service options relative to other Minnesota airports, many passengers from outside MSP's catchment area drive to MSP.

A stepwise regression analysis was conducted to evaluate potential relationships between passenger flow and a subset of the factors mentioned above. One socio-economic factor, total income, and one supply side parameter, frequency, proved to have the strongest correlation with historical passenger flow. Projections of income are available from the Woods & Poole CEDDS.

During the passenger forecast, the study team became aware of an on-going master plan update at the Duluth international airportxxi. After contacting the airport authority, it was determined that the data source used in the master plan update was more comprehensive than the T100 numbers. As a result, passenger enplanements and cargo volume at the Duluth International were adjusted. Comparing the base year airport counts and T100 data, an adjustment factor was produced. This adjustment factor was in turn applied to the allocated passenger enplanements and cargo volume at Duluth in the future forecasts.

Since passenger enplanements and service frequency are inter-dependent, an iterative process was built to explore this correlation between supply and demand. Average seat capacity per departure was acquired from the recent T100 data. Future fleet mix was estimated based on a fleet mix forecast that HNTB developed for the MSP Environmental Assessment (EA). Fleet mix for flights to airports other than MSP was based on airline passenger fleet trends and aircraft orders. Load factors were assumed to gradually converge to the FAA regional carrier forecast¹⁰ except for Hibbing and Thief River Falls. The current subsidized operations are assumed to continue in the future which would allow the current relatively low load factors to continue at those two airports. With the projected seat capacity and load factor, the number of commercial aircraft departures can be calculated given the enplanement forecast. The number of aircraft departures in turn helps



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determine the passenger flow. This procedure eventually converges to a point where input departures match the output departures. The result is shown in Figure C-10.

After commercial operations were projected, passenger traffic to primary origin and destination markets were estimated based on the current demand and future socio-economic growth within each airport catchment area. The projected total income growth rate from Woods & Poole CEDDS was used as the socio-economic indicator. For airports outside Minnesota, several assumptions regarding relative airport development were made. The relative growth at non-hub airports was assumed to be in pace with the local county income growth. Hub airports were assumed to grow at the same rate as the MSA where the airports are located. The base year originating and terminating passenger flow was collected from the BTS OD1A and multiplied by the relative growth factor. Then the total passengers were compared with the forecast to develop a global adjustment factor. It was applied to adjust the total number of passengers to match the forecast. These procedures were repeated for each of the system airports. Table C-9 to Table C-22, beginning on page C-55, list the major origin and destination breakdowns from commercial airports in the state.

From the iterative procedure described above, annual commercial operations were determined. The forecast of enplanements and commercial aircraft departures are shown in Table C-3 to Table C-8 beginning on page C-51.

The average annual growth rate presented in this report is the Compound Annual Growth Rate (CAGR). It assumes the growth during the planning period follows an exponential growth model:

 $X_{FUTURE} = X_{BASE} * (1 + CAGR)^{Planning Period}.$

Therefore, the CAGR can be calculated as



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investments at MSP and current MSP forecasts indicate that they are unlikely to outgrow their facilities there in the near future. These factors, taken together, present a major challenge to any effort to relocate air cargo service from MSP to a smaller airport. The growth rates for individual airports are displayed geographically in Figure C-30 through Figure C-35 beginning on page C-93.

C.5.1 Market Share Analysis

Air cargo handled at all system airports as a percentage of total domestic air cargo volume in the US declined from 0.063 percent in 2003 to 0.046 percent in 2010 (see Figure C-11). An exponential equation was used to fit the historical trend of the cargo market share and forecast future share. The future ton-miles forecast is then a product of the projected market share and FAA ton-miles estimate published in the annual FAA Aerospace Forecast.

C.5.2 Trend Line

In addition to analyzing cargo demand as a share of the US market, trends in air freight ton-miles were investigated directly. Figure C-12 shows the air cargo ton-miles reported by BTS T100. Cargo flow at the system airports declined from around 9.9 million ton-miles in 2004 to 5.0 million ton-miles in 2009 and rebounded to 5.8 million in 2010. An exponential function was used to fit the historical trend and forecast future ton-miles.



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Thief River Falls **Bemidji** Hibbing Duluth Brainerd X Legend Commercial Service (8) Out of State **Catchment Area** Minneapolis-St. Paul X Mason City

Figure C-9: Airline Service Airport Catchment Areas

Sources: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



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Figure C-10: Passenger Enplanements Forecast (without MSP)

Sources: BTS T100 and Woods & Poole CEDDS & HNTB Analysis



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0.030% 0.025% 0.020% **Market Share** 0.015% 0.010% 0.005% 0.000% 2003 2004 2005 2006 2007 2008 2009 2010 Year

Figure C-11: System Airports Market Share of US Air Cargo Ton-Miles

Sources: BTS T100 & HNTB Analysis

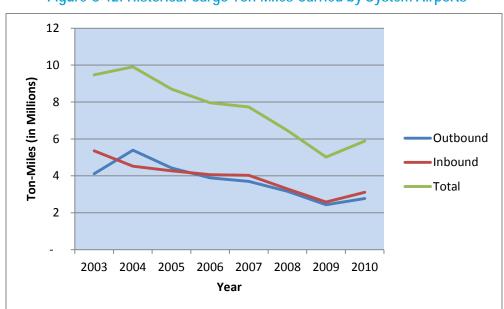


Figure C-12: Historical Cargo Ton-Miles Carried by System Airports



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Sources: BTS T100 & HNTB Analysis

C.5.3 FAA Growth Factor

Each year, FAA publishes an Aerospace Forecast which covers various aspects of the aviation industry. Key forecasts published in this report include available seat-miles, revenue passenger-miles, available ton-miles, revenue ton-miles, general aviation fleet and operations, etc. The forecast of revenue ton-miles was used in this study to project future cargo activity. In the 2011 publication, the FAA estimated annualized future domestic all-cargo ton-miles growth to be 3.5% from 2010 to 2020 and 2.9% from 2010 to 2030. They were used as benchmarks for future air cargo growth in this study.

C.5.4 Preferred Forecast

The results of the above-mentioned methodologies are illustrated in Figure C-13. On one hand, both market share and trend line analysis indicate further decline in air cargo in the state. On the other hand, FAA predicts strong growth in air cargo shipments. In addition, the historical data include the aftermath of the September 11, 2001 attacks, Northwest Airline Inc., bankruptcy, and the latest recession, all factors that have negatively affected recent trends. An

average of the three methodologies accounting for both local characteristics and national trends is considered more accurate than a single methodology. The solid line in the **Figure C-13** represents the average of the market share, trend line, and FAA growth factor analysis.

To derive total air cargo tonnage from the ton-miles estimate, it is necessary to study average cargo carrier transport distance. Historical cargo revenue miles were gathered from the BTS T100 database. Historical trends suggest that the average length of haul for air cargo is increasing as shown in Figure C-14. Increased competition from other modes such as truck and rail, has generated a tough market for shorthaul cargo. Cargo airlines have been turning to longer haul and time sensitive express cargo to take advatange of their speed. Using a linear regression equation, future cargo transport distance can be estimated.

Based on the revenue ton-miles forecast and the revenue miles forecast, total revenue tonnage is projected and shown in Figure C-15.



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12 10 Ton-Miles (Millions) 2003 2006 2009 2012 2015 2018 2021 2024 2027 2030 Year Market Share Trend Line FAA Growth Factors Preferred Forecast

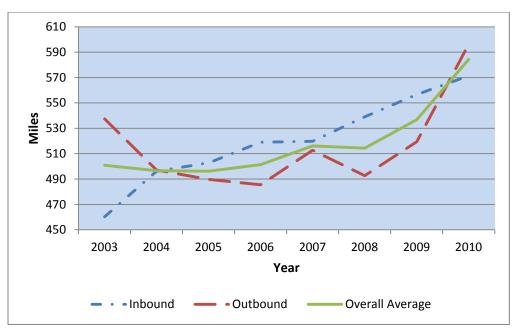
Figure C-13: Cargo Ton-Miles Forecasts

Sources: BTS T100 & HNTB Analysis

Figure C-14: Cargo Revenue Miles Trend for Minnesota Commercial Airports (without MSP)

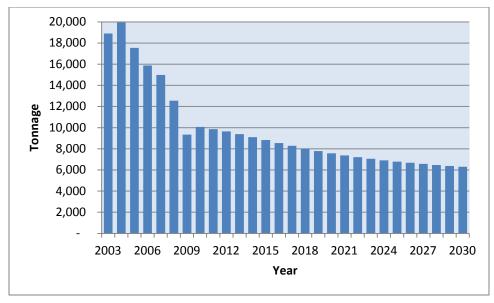


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Sources: BTS T100 & HNTB Analysis

Figure C-15: Air Cargo Revenue Tonnage Forecast for Minnesota Commercial Airports (without MSP)



Sources: FAA TAF, FAA Aerospace Forecast, and BTS T100 & HNTB Analysis



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Once the total revenue tonnage was projected, it was allocated to each cargo airport based on the current distribution and future economic growth. The Geographic Information System (GIS) catchment area analysis from the passenger forecast was applied to associate future cargo volume growth with socioeconomic development. The total income forecast provided by Woods & Poole, adjusted by the most recent Bureau of Economic Analysis data, was employed as the basic socio-econmoic indicator for future cargo growth. The current cargo tonnage was multiplied by the catchment area total income growth at each system airport. Then the total for the individual airports were compared with the forecast system total and an adjustment factor was calculated. This factor was used to calibrate future cargo volume to match forecasts.

After cargo is allocated to individual airports, the number of all-cargo operations can be estimated. Cargo shipments are carried by both all-cargo aircraft and passenger aircraft. An assessment of historical belly cargo and all-cargo breakdown, depicted in Figure C-16, shows dominance of all-cargo

operations in transporting payload. It also revealed that cargo processed at the International Falls and Hibbing Airports was only carried by passenger aircraft as the demand was too low to warrant an all-cargo operation. It was assumed that all cargo at these two airports will continue to be carried by passenger aircraft in the future.

The future all-cargo fleet composition needs to be evaluated to forecast all-cargo aircraft operations. According to its fleet plan, FedEx is expected to replace Airbus A310 and Boeing 727-200F aircraft with Boeing 757-200F aircraft. The average capacity increase from an A310 to a Boeing 757-200 is around 30% and from a Boeing 727-200F to a 757-200F is around 50%. Other smaller aircraft such as Beech 1900 and Cessna 208 are expected to stay in the fleet in the future. However, since cargo volume is projected to decline, the airlines are not expected to increase capacity at routes with lower load factors. Therefore the current tons per operation is assumed to stay the same in the future.

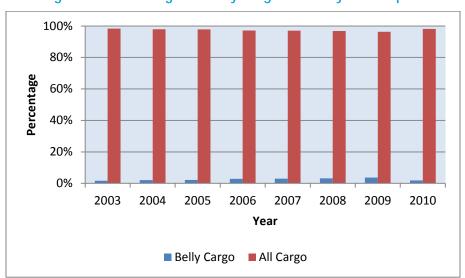


Figure C-16: All Cargo vs. Belly Cargo for the System Airports

Sources: BTS T100 & HNTB Analysis



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C.6 General Aviation and Military Activity Forecast

GA refers to all flights other than military, and scheduled and unscheduled passenger and cargo operations. The state aviation plan includes 135 public airports, the majority of which are GA airports that accommodate GA operations with little commercial traffic. A forecast of the future fleet and operation levels is the key to future infrastructure planning. This section describes methodologies applied in forecasting the GA fleet composition and the number of operations by each aircraft category. The inventory survey offers based aircraft counts by category. Figure C-17 exhibits the current GA fleet composition in the state. Single engine piston aircraft account for almost 85% of the total number of based aircraft, followed by 5% multi engine piston, 2% turboprops, and 1.4% jets.

C.6.1 Market Share

GA based aircraft in Minnesota have gained an increasing share of the U.S. GA market (see Figure C-18). Historical data indicates the percentage of local GA aircraft grew from around 2.0% in 1990 to 2.5% in 2008. A time series analysis was conducted to estimate future market share. Various trend line fitting techniques were employed and an average was calculated. As a result, the market share is expected to increase to 2.63 percent in 2015, 2.70 percent in 2020 and 2.83 percent in 2030. This forecast is used in conjunction with the FAA TAF forecast of total GA aircraft to predict future GA fleet.

C.6.2 Trend Line

Historical based aircraft data derived from the Airport Master Records (Form 5010) shows a general expanding trend in the GA fleet (See Figure C-19). The total number of based aircraft grew from less than 3,000 in 1980 to nearly 4,400 in 2009 with the peak number close to 5,000 in 2003. This trend can be interpreted by a linear growth equation. Future fleet size is then extrapolated using this equation.

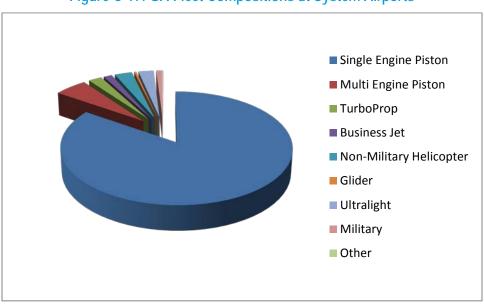


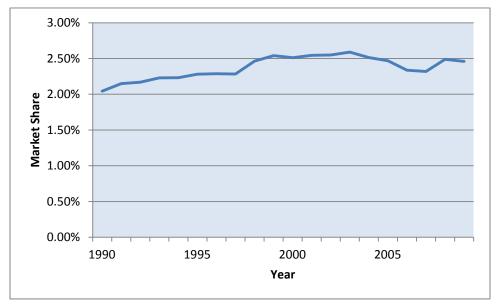
Figure C-17: GA Fleet Compositions at System Airports



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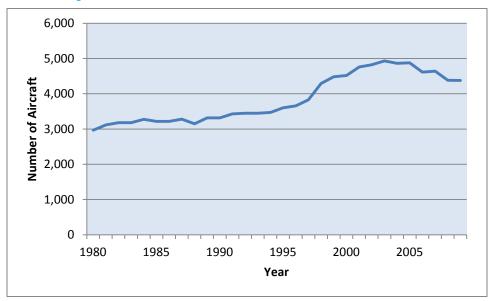
Sources: BTS T100 & HNTB Analysis

Figure C-18: Historical Minnesota General Aviation Based Aircraft Market Share of U.S



Sources: FAA Master Records (Form 5010) & HNTB Analysis

Figure C-19: Historical Number of General Aviation Aircraft



Sources: FAA Master Records (Form 5010) & HNTB Analysis



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C.6.3 FAA TAF Forecast

The TAF is the FAA's official forecast for terminal area aviation activities. It incorporates historical and forecast data on based aircraft by aircraft type such as single-engine, multi-engine, and jet as well as amount of operations of air carrier, air taxi, general aviation and military. The TAF forecast of based aircraft in the state of Minnesota was used as one of the forecast alternatives.

C.6.4 Preferred Forecast

An average of the above-mentioned forecasts was selected as the preferred forecast. Figure C-20 illustrates the results of the various techniques used and the preferred forecast.

After the total number of GA aircraft is estimated, it is necessary to allocate them to each airport. Two primary factors were considered during the allocation process. The first one focused on local socio-economic development. The total income forecasts of the airport service area were collected from the

Woods & Poole CEDDS data based on the airport catchment area. The second factor took into account of growth rate of each aircraft category based on the FAA TAF forecast for Minnesota.

Besides the traditional aircraft categories, there are two emergent aircraft types that have implication for future infrastructure requirement. The introduction of lighter and quieter micro-jets may bring business travelers to rural airports currently not equipped to accommodate jet traffic. On the leisure side, the fleet of recreational aircraft has enjoyed rapid expansion recently. The LSA, in particular, has drawn much attention. In the FAA Aerospace Forecast, the LSA and Turbojets represent the fastest growing categories. As TAF does not provide an individual forecast of LSA, the FAA Aerospace forecast was used where the national level LSA forecast is available. It is assumed that LSA activity in the state will follow the national pace.



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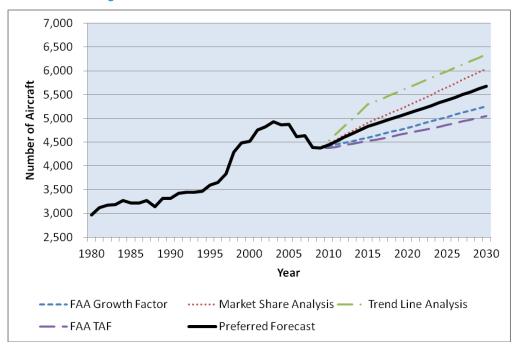


Figure C-20: General Aviation Aircraft Fleet Forecast

Sources: FAA TAF, FAA Aerospace Forecast, FAA GAATA, FAA Airport Master Records, MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



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Pinecreek Warroad Hallock (8) Roseau Karlstad International Falls Stephen Littlefork 🐼 Warren Waskish 🐼 Thief River Falls Big Falls **Grand Marais** Red Lake Falls **Ely** Bigfork Fosston **Bemidji** Hibbing **Grand Rapids** Two Harbors Hawley Detroit Lakes X Pine River Perham McGregor Aitkin Cloquet 🚳 Pelican Rapids Duluth Sky Harbor Wadena Fergus Falls East Gulf Lake Legend Commercial Service (8) Alexandria Mora Long Prairie Wheaton Key (22) Herman Glenwood Sauk Centre Intermediate (83) Brooten Starbuck St. Cloud Landing Strip (22) Benson Paynesville 🐼 **Catchment Area** Buffalo (3) Anoka Litchfield Willmar 🖏 Madisor Montevideo St. Paul Hutchinson Olivia Hector South St. Paul Flying Cloud Airlake Redwood Falls Marshall Le Sueur Red Wing New Ulm Faribault Tracy Springfield Mankato X Winona St. James Windom X Worthington Jackson Fairmont

Figure C-21: General Aviation Airport Catchment Area

Sources: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



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One micro-jet, an Eclipse E500, was identified from the Minnesota registered aircraft database. The database also showed 88 LSA based in Minnesota according to the FAA LSA aircraft listxxii. An effort was made to separate LSA aircraft from other aircraft in the inventory list. The number of LSA based in the state and the current fast growth warrant an individual forecast in addition to traditional aircraft categories.

The allocation procedure is similar to the passenger origin and destination assignment. The baseline based aircraft were assumed to grow at the same pace as the catchment area (see Figure C-21) total income growth. During this step, an additional growth factor derived from the FAA TAF forecast was employed to account for relative growth of each aircraft category. Then the total was compared with the forecast total to develop a global adjustment factor. This factor was applied to match the forecast total.

The GA fleet at MAC airports was adopted from the MAC LTCP plans. The LTCP forecasts were adjusted by applying the ratio of actual based aircraft from the inventory to projected 2010 based aircraft from the LTCP forecasts to the LTCP forecast numbers. Due to facility constraints, based aircraft at MSP are assumed to be capped at 30 in the future.

C.6.5 General Aviation Operations Forecast

The number of operations per aircraft type was derived from the GAATA number of landings by aircraft type divided by number of aircraft. This rate was applied to inventory based aircraft to estimate operations by each category. The total at each airport was compared with reported operations at the base year to calculate an adjustment factor for each airport. These factors were applied to the horizon years 2015, 2020 and 2030. The numbers were also adjusted by

utilization rate for each aircraft category, which comes from the number of hours flown from the FAA Aerospace forecast.

GA operations were also estimated based on trip type and purpose. Trip type includes local and itinerant flights. Operation purpose consists of business, leisure and training. The Minnesota state DOT aviation inventory supplies such breakdowns for some system airports. These percentages were applied to calculate operation breakdowns by trip type and purpose and assumed to remain constant in the future. A general percentage distribution of operation by type and purpose was formulated from airports that submitted such information. It was used to estimate activity at airports that did not submit this information to the inventory survey. The inventory shows around 60% of GA operations to be local and 40% to be itinerant. In terms of flight purpose, about 40% of trips are business related, 40% to be leisure and 20% to be training.

Similar to the based aircraft forecast for MAC airports, the operations forecast was based on the previous LTCP forecast. The LTCP forecast growth rates were applied to the 2010 base year totals from the inventory.

C.6.6 Military Activity Forecast

Military operations in Minnesota declined from about 30,000 operations in 1991 to 19,000 in 2010. The FAA TAF forecasts near constant military operations from 2010 to 2030. An alternative forecast assumes the decreasing trend continues into the future. The average of the two forecasts was chosen as the preferred forecast for future military operations (shown in Figure C-22).



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35,000 30,000 25,000 Operations 20,000 15,000 10,000 5,000 1991 2009 2015 2021 2027 1997 2003 Year Terminal Area Forecast — — Trend Line ——Preferred Forecast

Figure C-22: Military Operations Forecast

Sources: FAA TAF & HNTB Analysis

C.7 Peak Hour Activity Level

Peak hour activity was projected for MAC airports in the previous LTCP studies. The average peak month operations were based on the tower observations. Peak hour operations were assumed to be a percentage of average day operations in the peak month. This percentage, which varies from airport to airport, was adopted in this study. It is also assumed that this percentage will stay constant for forecast years. For outstate airports, towered and non-towered facilities were processed differently. For airports with a control tower, including Rochester, Duluth and St. Cloud, hourly operations distributions provided by the FAA Distributed OPSNETxxiii in 2010 was gathered. The peak Month for each airport was identified for each airport. Then the day with operations closest to the peak month average was determined. By analyzing the hourly operation distribution pattern of that day, the peak hour activity level was established.

Dividing the peak hour activity level by total annual operations provided a peak-hour ratio that was assumed to stay constant in the planning period. The projections of future peak hour operations at the towered airport are the product of this ratio and annual operation forecast.

For non-towered airports, a formula was employed that uses a 240 day year to determine the average day activity level and assumes that 15 percent of the average day activity occurs in the peak hour. This ratio has been used by the Office of Aeronautics and previous systems plans.

Peak hour operations obtained from the abovementioned methodologies are exhibited in **Table C-29** beginning on page C-99.



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C.8 Summary

First, Minnesota inventory survey results were processed to provide a baseline for forecasts. Forecasts from the previous MAC LTCP were adjusted to reflect the current operation level. The total operations were allocated by aircraft categories, operation types and operation purposes. There are an estimated total of 5,092 based aircraft with 1,761,944 GA and military operations.

Passenger enplanements at outstate commercial airports were projected by correlating socio-economic factors, i.e. total income, and supply side parameter, i.e. scheduled flights, with passenger flow. Since enplanements and scheduled flights are interdependent, an iterative process was developed to explore the correlation between demand and supply. Passenger forecasts for MSP were adopted from the Environmental Assessment (EA) Enplanements for Minnesota commercial airports are projected to grow at an average annual growth rate of 2.17% for the near term. In terms of midterm growth from 2010 to 2020, the average growth rate increases to 2.46%. The long term annual growth is projected to be 2.61% through 2030. From 2010 to 2015, commercial flight frequency increases at 0.12% each year. It increases to 1.04% from 2010 to 2020. The long term growth rate was estimated to be 1.36%. This growth rate trails the FAA aerospace forecast for commercial and regional passenger enplanements in both the midterm and long term. The FAA projects annual growth of commercial passenger traffic to be 3.2% in the midterm and 2.5% in the long term. The FAA projections of regional carriers' growth are similar at 3.4% in the midterm and 2.8% in the long term.

Cargo tonnage and operations were evaluated based on revenue ton-miles and haul distance trend analysis. Cargo forecasts at MSP were adopted from the EA. Cargo tonnage and operations are forecasted to increase at MSP while declining at outstate airports. In the short term, cargo tonnage is projected to grow at an annual rate of 1.85%. In the mid-term and long term, cargo tonnage growth is expected to be lower at 0.84% and 0.35% respectively. All-cargo operations are expected to decrease slightly as cargo airlines upgrade to larger freighters.

The General Aviation section includes based aircraft and operation forecasts. The LTCP forecasts for MAC airports were used with adjustments to match baseline numbers. The short term growth of based aircraft (average 1.42% annually) is higher than the long term (average 0.94% annually) growth. Meanwhile, the total number of operations fluctuates: increasing at 1.40% annual rate during the first five years, 1.25% annually from 2010 to 2020, and 1.56% from 2010 to 2030. To put it in perspective, the FAA Aerospace Forecast 2010 projects future GA fleet to add 0.6% annually in the midterm, compared with 1.15% in Minnesota, and 0.91% in the long term, similar to the projected 0.96% in Minnesota.

Lastly, peak hour operations were estimated to facilitate infrastructure planning in the subsequent section. For towered airports, radar records were used. For non-towered airports, a formula was applied to calculate peak hour operations.

A summary of the main forecast results and Average Annual Growth Rates are summarized on the following page.



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Aviation Activity Forecast Summary

Year	Passenger		Ca	ırgo	General Aviation and Military		
Teal	Enplanements	Departures	Tonnage	All-Cargo Operations	Based Aircraft	Operations	
2010	16,612,035	211,243	236,737	14,778	5,092	1,761,944	
2015	18,498,403	212,532	259,401	14,555	5,465	1,888,731	
2020	21,180,802	234,271	257,343	14,422	5,698	1,995,493	
2030	27,786,958	276,848	253,725	14,306	6,135	2,403,658	

Average Annual Growth Rate Summary

Average Annual Growth	Passenger		Ca	nrgo	General Aviation and Military		
Rate	Enplanements	Departures	Tonnage	All-Cargo Operations	Based Aircraft	Operations	
(2010 – 2015)	2.17%	0.12%	1.85%	-0.30%	1.42%	1.40%	
(2010 – 2020)	2.46%	1.04%	0.84%	-0.24%	1.13%	1.25%	
(2010 – 2030)	2.61%	1.36%	0.35%	-0.16%	0.94%	1.56%	



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C.9 Supporting Figures and Tables

Table C-1: Number of Based Aircraft (2010)

Baseline Based Aircraft (2010)								
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН
Crystal Airport	MIC	195	1	13	1	1	-	7
Airlake Airport	LVN	133	-	10	1	2	-	1
Lake Elmo Airport	21D	205	-	11	-	9	-	5
St. Paul Downtown Airport - Holman Field	STP	23	52	8	9	1	-	6
Anoka County/Blaine Airport - Janes Field	ANE	346	15	48	7	6	-	11
Flying Cloud Airport	FCM	310	29	35	20	3	-	7
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	27	-	-	-	-	-
Hawley Municipal Airport	04Y	26	-	1	-	2	-	2
Henning Municipal Airport	05Y	11	-	-	-	-	-	2
Herman Municipal Airport	06Y	4	-	-	·	-	-	-
Hill City-Quadna Mountain Airport	07Y	2	-	-	-	-	-	-
Winsted Municipal Airport	10D	32	-	1	-	-	-	12
Tower Municipal Airport	12D	38	1	3	-	1	-	3
Le Sueur Municipal Airport	12Y	21	-	1	-	2	-	48
Littlefork Municipal Airport - Hanover Airport	13Y	2	-	-	-	1	-	-
Long Prairie Municipal Airport - Todd Field	14Y	15	-	1	·	1	-	-
Perham Municipal Airport	16D	11	1	-	1	-	-	1
Milaca Municipal Airport	18Y	28	-	-	-	-	-	-
Hector Municipal Airport	1D6	35	-	-	-	1	-	4
Karlstad Municipal Airport	23D	-	-	-	-	-	-	-
Murdock Municipal Airport	23Y	-	-	-	-	-	-	-
Forest Lake Airport	25D	31	-	1	1	1	-	1
Grygla Municipal Airport - Mel Wilkens Field	3G2	2	-	-	1	-	-	-
Mahnomen County Airport	3N8	19	-	-	-	-	-	-
Northome Municipal Airport	43Y	1		-	1	-	-	-
Pelican Rapids Municipal Airport - Lyon's Field	47Y	16	-	-	-	-	-	-
Piney-Pinecreek Border Airport	48Y	-	-	-	-	-	-	-
Remer Municipal Airport	52Y	3	-	-	-	-	-	1
Rushford Municipal Airport	55Y	8	-	-	-	2	-	-
Tyler Municipal Airport	63Y	5	-	-	-	-	-	-
Wells Municipal Airport	68Y	8	-	-	-	-	-	-



FORECAST TECHNICAL REPORT

Baseline Based Aircraft (2010)								
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH
Brooten Municipal Airport	6D1	5	-	-	-	-	-	2
Backus Municipal Airport	7Y3	7	-	1	-	-	-	-
Bagley Municipal Airport	7Y4	5	-	-	-	-	-	-
Big Falls Municipal Airport	7Y9	2	-	-	-	-	-	1
Clarissa Municipal Airport	8Y5	1	-	-	-	-	-	-
Bowstring Airport	9Y0	7	-	-	-	-	-	-
East Gull Lake Airport	9Y2	2	-	-	-	-	-	-
Waseca Municipal Airport	ACQ	23	-	-	-	-	-	-
Wadena Municipal Airport	ADC	9	-	-	-	-	-	-
Albert Lea Municipal Airport	AEL	33	2	3	-	-	-	8
Aitkin Municipal Airport - Steve Kurtz Field	AIT	35	-	2	2	1	-	-
Appleton Municipal Airport	AQP	6	-	-	4	-	-	-
Austin Municipal Airport	AUM	25	2	1	1	-	-	-
Alexandria Municipal Airport - Chandler Field	AXN	48	-	2	2	-	-	-
Benson Municipal Airport - Veterans Field	BBB	13	-	4	2	-	-	1
Baudette International Airport	BDE	13	-	1	-	1	-	-
Willmar Municipal Airport - John L. Rice Field	BDH	40	1	3	-	-	-	-
Silver Bay Municipal Airport - Wayne Johnson	BFW	4	-	-	-	-	-	2
Bemidji Regional Airport	BJI	20	-	23	12	-	-	1
Brainerd Lakes Regional Airport	BRD	65	1	6	2	3	-	8
Cambridge Municipal Airport	CBG	39	-	1	-	4	-	2
Buffalo Municipal Airport	CFE	61	-	2	-	2	-	-
Houston County Airport	CHU	13	-	1	-	-	-	-
Grand Marais-Cook County Airport	CKC	13	-	-	-	1	-	-
Crookston Municipal Airport - Kirkwood Field	CKN	47	-	-	3	-	-	-
Canby Municipal Airport - Myers Field	CNB	20	-	5	-	-	-	-
Cloquet-Carlton County Airport	COQ	41	-	-	1	1	-	-
Cook Municipal Airport	CQM	18	-	-	1	-	-	1
Norman County/Ada/Twin Valley Airport	D00	7	-	-	-	-	-	-
Fertile Municipal Airport	D14	3	-	-	-	-	1	_
Starbuck Municipal Airport	D32	3	-	-	-	-	-	-
Warren Municipal Airport	D37	6	-	-	2	-	-	-
Sauk Centre Municipal Airport	D39	12	-	1	_	-	1	2
Stephen Municipal Airport	D41	7	-	-	1	-	-	1



FORECAST TECHNICAL REPORT

Base	eline Based Air	craft (2010)					
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН
Springfield Municipal Airport	D42	3	-	-	-	1	-	-
Red Lake Falls Municipal Airport	D81	6	-	-	-	-	-	-
Duluth International Airport	DLH	51	2	11	-	1	22	1
Detroit Lakes Municipal Airport - Wething Field	DTL	24	2	-	4	-	-	2
Slayton Municipal Airport	DVP	4	-	-	-	-	-	1
Lac Qui Parle County Airport - Bud Frye Field	DXX	7	-	-	-	-	-	2
Duluth Sky Harbor Airport	DYT	29	-	3	-	-	-	-
Ely Municipal Airport	ELO	20	-	2	-	1	-	-
Wheaton Municipal Airport	ETH	4	-	-	-	-	-	-
Eveleth-Virginia Municipal Airport	EVM	36	-	1	1	1	-	1
Faribault Municipal Airport	FBL	64	-	6	-	1	-	9
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	46	-	1	1	2	-	-
Preston - Fillmore County Airport	FKA	22	-	-	-	1	-	2
Bigfork Municipal Airport	FOZ	4	-	-	-	-	-	-
Fairmont Municipal Airport	FRM	28	2	2	-	-	-	-
Fosston Municipal Airport	FSE	9	-	1	-	-	-	1
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	13	2	2	-	-	-	-
Glenwood Municipal Airport	GHW	11	-	-	-	-	-	-
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	74	1	3	-	2	-	-
Glencoe Municipal Airport - Vernon Perschau Field	GYL	29	-	1	-	-	-	5
Hutchinson Municipal Airport - Butler Field	HCD	38	-	3	1	2	-	2
Hallock Municipal Airport	HCO	11	-	-	2	-	-	-
Range Regional Airport	HIB	44	-	2	-	1	-	6
McGregor - Isedor Iverson Airport	HZX	13	-	-	-	-	-	1
Falls International Airport	INL	26	-	-	-	7	-	-
Moorhead Municipal Airport	JKJ	34	-	5	-	-	-	-
Mora Municipal Airport	JMR	25	-	-	-	3	-	1
St. James Municipal Airport	JYG	11	-	-	-	1	-	-
Litchfield Municipal Airport	LJF	27	-	1	-	-	-	2
Little Falls-Morrison County Airport	LXL	28	-	1	-	-	-	-
Luverne Municipal Airport - Quentin Aanenson Field	LYV	18	-	-	-	-	-	1
Maple Lake Municipal Airport	MGG	43	-	4	-	-	-	-
Jackson Municipal Airport	MJQ	19	-	-	-	-	-	1
Mankato Regional Airport - Sohler Field	MKT	54	3	8	3	2	-	5



FORECAST TECHNICAL REPORT

Basel	ine Based Air	craft (2010))					
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH
Southwest Minnesota Regional-Marshall/Ryan Field	MML	19	5	3	5	-	-	1
Morris Municipal Airport - Charlie Schmidt Field	MOX	11	-	4	2	1	-	1
Montevideo-Chippewa County Airport	MVE	22	-	1	-	-	-	2
Windom Municipal Airport	MWM	15	-	1	-	-	-	-
Moose Lake-Carlton County Airport	MZH	10	-	-	-	-	-	3
Winona Municipal Airport - Max Conrad Field	ONA	32	2	5	1	1	-	2
Orr Regional Airport	ORB	8	-	-	-	-	-	-
Worthington Municipal Airport	OTG	21	-	3	-	-	-	-
Olivia Regional Airport	OVL	8	-	-	-	-	-	5
Owatonna Degner Regional Airport	OWA	48	-	2	-	-	-	2
Paynesville Municipal Airport	PEX	22	-	1	-	-	-	1
Park Rapids Municipal Airport - Konshok Field	PKD	26	-	3	-	-	-	-
Princeton Municipal Airport	PNM	44	-	2	-	1	-	-
Pipestone Municipal Airport	PQN	17	-	1	-	-	-	-
Pine River Regional Airport	PWC	38	1	2	1	-	-	2
Red Wing Regional Airport	RGK	55	5	3	1	-	-	-
Rush City Regional Airport	ROS	56	-	1	-	1	-	1
Roseau Municipal Airport - Rudy Billberg Field	ROX	16	-	-	-	-	-	2
Warroad International Memorial Airport	RRT	16	1	1	3	-	-	1
Rochester International Airport	RST	57	3	3	-	1	-	1
Redwood Falls Municipal Airport	RWF	11	-	3	-	1	-	3
Staples Municipal Airport	SAZ	17	-	1	-	-	-	2
Blue Earth Municipal Airport	SBU	26	-	-	2	1	-	-
South St. Paul Municipal Airport - Fleming Field	SGS	217	-	10	12	3	-	6
St. Cloud Regional Airport	STC	82	8	5	-	-	12	-
Tracy Municipal Airport	TKC	7	-	-	-	-	-	-
Dodge Center Municipal Airport	TOB	39	-	-	-	1	-	4
Thief River Falls Regional Airport	TVF	21	3	1	1	-	-	1
Two Harbors Municipal - Richard B. Helgeson Field	TWM	36	-	1	-	1	-	6
New Ulm Municipal Airport	ULM	20	-	4	1	-	1	_
Ortonville Municipal Airport - Martinson Field	VVV	3	-	-	-	-	-	-
Waskish Municipal Airport	VWU	1	-	-	-	-	-	-
Longville Municipal Airport	XVG	15	-	1	_	-	1	-
Walker Municipal Airport	Y49	23	-	2	-	4	-	-



FORECAST TECHNICAL REPORT

Baselin	e Based Airo	craft (2010)								
Airport Name ID SEP JET MEP TP LSA MIL OTH										
Sleepy Eye Municipal Airport	Y58	6	-	-	1	1	-	3		
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	17	-	-	-	-	-	1		

Table C-1 Notes

¹SEP: Single-Engine Piston

² JET: Turbojet

³MEP: Multi-Engine Piston

⁴TP: Turboprop

⁵ LSA: Light Sport Aircraft

⁶ MIL: Military

⁷OTH: Other aircraft including helicopter, ultra-light and glider.

Source: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB Analysis



FORECAST TECHNICAL REPORT

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FORECAST TECHNICAL REPORT

Table C-2: Baseline Number of GA Operations (2010)

		rable		Passlina C			auons	(2010)					
	Ī			Baseline G/									
Airport Name	ID			Ai	rcraft Type				Opera	tion Type	Op€	eration Purpo	se
,		SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Crystal Airport	MIC	36,510	1,139	3,528	1,376	36	-	1,641	23,675	20,554	18,410	17,225	8,595
Airlake Airport	LVN	32,266	490	1,746	987	78	-	95	7,133	28,529	14,844	13,888	6,930
Lake Elmo Airport	21D	32,034	25	1,225	296	377	-	417	13,389	20,985	14,308	13,387	6,680
St. Paul Downtown Airport - Holman Field	STP	33,321	15,635	16,238	5,974	79	-	17,748	58,031	30,964	37,043	34,658	17,294
Anoka County/Blaine Airport - Janes Field	ANE	52,719	4,552	15,035	2,788	590	-	3,905	43,828	35,761	33,128	30,995	15,466
Flying Cloud Airport	FCM	66,720	5,868	10,214	5,002	256	-	6,184	55,126	39,118	39,228	36,702	18,314
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	27,921	-	-	-	2,145	-	26,082	-	25,821	261	-
Hawley Municipal Airport	04Y	7,527	-	305	-	434	-	334	4,644	3,956	3,580	3,349	1,671
Henning Municipal Airport	05Y	3,259	-	-	-	-	-	341	2,124	1,476	720	2,520	360
Herman Municipal Airport	06Y	2,400	-	-	-	-	-	-	1,440	960	960	1,200	240
Hill City-Quadna Mountain Airport	07Y	1,400	-	-	-	-	-	-	826	574	583	545	272
Winsted Municipal Airport	10D	8,807	-	290	-	-	-	1,904	8,030	2,970	1,100	7,700	2,200
Tower Municipal Airport	12D	6,305	260	524	-	124	-	287	6,000	1,500	375	6,975	150
Le Sueur Municipal Airport	12Y	5,880	-	295	-	420	60	7,746	5,760	8,640	2,880	8,640	2,880
Littlefork Municipal Airport - Hanover Airport	13Y	1,745	-	-	-	655	-	-	1,200	1,200	-	2,280	120
Long Prairie Municipal Airport - Todd Field	14Y	6,240	-	438	-	312	10	-	1,860	5,140	1,400	4,900	700
Perham Municipal Airport	16D	5,108	726	-	1,097	-	-	268	5,040	2,160	720	5,760	720
Milaca Municipal Airport	18Y	11,000	-	-	-	-	-	-	6,491	4,509	4,579	4,284	2,138
Hector Municipal Airport	1D6	6,990	-	-	-	150	-	460	1,086	6,514	3,163	2,960	1,477
Karlstad Municipal Airport	23D	1,000	-	-	-	-	-	-	-	1,000	-	1,000	-
Murdock Municipal Airport	23Y	1,000	-	-	-	-	-	-	-	1,000	800	100	100
Forest Lake Airport	25D	8,554	1	290	-	207	-	159	5,526	3,684	1,842	5,526	1,842
Grygla Municipal Airport - Mel Wilkens Field	3G2	1,400	1	-	-	-	-	-	826	574	583	545	272
Mahnomen County Airport	3N8	4,800	-	-	-	-	-	-	4,560	240	4,080	672	48
Northome Municipal Airport	43Y	1,200	1	-	-	-	-	-	120	1,080	120	960	120
Pelican Rapids Municipal Airport - Lyon's Field	47Y	2,800	1	-	-	-	-	-	1,400	1,400	-	2,800	-
Piney-Pinecreek Border Airport	48Y	1,800	ı	-	-	-	-	-	1,062	738	612	1,188	-
Remer Municipal Airport	52Y	1,510	-	-	-	-	-	290	1,800	-	-	1,620	180
Rushford Municipal Airport	55Y	1,684	-	-	-	316	-	-	1,200	800	200	600	1,200
Tyler Municipal Airport	63Y	1,500	-	-	-	-	-	-	1,350	150	750	750	-
Wells Municipal Airport	68Y	5,200	-	-	-	-	-	-	4,160	1,040	4,160	780	260
Brooten Municipal Airport	6D1	4,876	-	-	-	-	-	1,124	4,800	1,200	3,000	2,400	600
Backus Municipal Airport	7Y3	2,260	-	340	-	-	-	-	2,574	26	26	260	2,314
Bagley Municipal Airport	7Y4	2,100	-	-	-	-	-	-	2,100	-	874	818	408

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FORECAST TECHNICAL REPORT

				Baseline G	A Operation	ns (2010)							
				Ai	ircraft Type				Opera	tion Type	Ope	eration Purpose	
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Big Falls Municipal Airport	7Y9	1,242	-	-	-	-	-	358	1,200	400	400	800	400
Clarissa Municipal Airport	8Y5	1,200	-	-	-	-	-	-	648	552	499	467	233
Bowstring Airport	9Y0	1,900	-	-	-	-	-	-	950	950	380	1,330	190
East Gull Lake Airport	9Y2	1,400	-	-	-	-	-	-	826	574	-	1,400	-
Waseca Municipal Airport	ACQ	5,800	-	-	-	-	-	-	4,640	1,160	580	4,930	290
Wadena Municipal Airport	ADC	5,394	-	-	-	-	6	-	1,403	3,997	2,248	2,103	1,049
Albert Lea Municipal Airport	AEL	19,452	1,844	1,860	-	-	300	2,718	21,202	4,973	10,895	10,194	5,086
Aitkin Municipal Airport - Steve Kurtz Field	AIT	16,439	-	988	2,220	352	-	-	14,600	5,400	1,000	18,000	1,000
Appleton Municipal Airport	AQP	777	-	-	1,223	-	-	-	2,000	-	1,780	200	20
Austin Municipal Airport	AUM	20,051	2,509	844	1,895	-	120	-	21,607	3,813	10,168	2,542	12,710
Alexandria Municipal Airport - Chandler Field	AXN	22,266	-	976	2,193	-	300	-	16,225	9,510	10,712	10,022	5,001
Benson Municipal Airport - Veterans Field	BBB	2,888	-	935	1,050	-	-	128	4,500	500	4,750	250	-
Baudette International Airport	BDE	9,595	-	776	-	554	75	-	1,100	9,900	2,750	7,150	1,100
Willmar Municipal Airport - John L. Rice Field	BDH	15,921	623	1,256	-	-	50	-	5,250	12,600	7,430	6,952	3,469
Silver Bay Municipal Airport - Wayne Johnson	BFW	2,562	-	-	-	-	-	738	1,650	1,650	165	2,805	330
Bemidji Regional Airport	BJI	2,234	-	2,703	3,168	-	500	64	2,601	6,068	6,935	1,300	433
Brainerd Lakes Regional Airport	BRD	27,261	656	2,647	1,982	944	400	1,934	10,663	25,161	14,911	13,951	6,961
Cambridge Municipal Airport	CBG	15,018	-	405	-	1,155	100	444	8,177	8,945	7,127	6,668	3,327
Buffalo Municipal Airport	CFE	21,257	-	733	-	523	220	-	15,913	6,820	2,273	18,186	2,273
Houston County Airport	CHU	3,238	-	262	-	-	-	-	3,150	350	2,450	1,050	-
Grand Marais-Cook County Airport	CKC	3,025	-	-	-	175	-	-	960	2,240	640	2,240	320
Crookston Municipal Airport - Kirkwood Field	CKN	24,287	-	-	3,663	-	50	-	14,000	14,000	5,600	2,800	19,600
Canby Municipal Airport - Myers Field	CNB	5,321	-	1,399	-	-	-	-	3,360	3,360	5,040	1,344	336
Cloquet-Carlton County Airport	COQ	9,201	-	-	530	168	100	-	9,000	1,000	3,000	3,000	4,000
Cook Municipal Airport	CQM	5,115	-	-	672	-	-	164	2,975	2,975	1,785	4,165	-
Norman County/Ada/Twin Valley Airport	D00	2,400	-	-	-	-	-	-	2,160	240	240	1,920	240
Fertile Municipal Airport	D14	9,600	-	-	-	-	-	-	9,600	-	-	9,600	-
Starbuck Municipal Airport	D32	1,600	-	-	-	-	-	-	944	656	666	623	311
Warren Municipal Airport	D37	1,342	-	-	1,058	-	-	-	1,416	984	999	935	466
Sauk Centre Municipal Airport	D39	4,953	-	434	-	-	30	476	4,420	1,473	4,420	1,473	_
Stephen Municipal Airport	D41	3,718	-	-	1,255	-	-	306	5,280	-	5,280	-	-
Springfield Municipal Airport	D42	1,936	-	-	-	484	-	-	484	1,936	1,452	968	-
Red Lake Falls Municipal Airport	D81	3,040	-	-	-	-	-	-	1,824	1,216	1,216	1,216	608
Duluth International Airport	DLH	26,455	1,623	6,003	-	389	7,983	299	11,543	31,209	36,339	2,138	4,275
Detroit Lakes Municipal Airport - Wething Field	DTL	10,240	1,335	-	4,033	-	100	492	5,400	10,800	6,743	6,309	3,148

APPENDIX C FORECAST TECHNICAL REPORT



FORECAST TECHNICAL REPORT

	Baseline GA Operations (2010) Aircraft Type Operation Type Operation Purpose													
				Ai	rcraft Type				Opera	tion Type	Ope	eration Purpo	pose	
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН	Local	Itinerant	Business	Leisure	Training	
Slayton Municipal Airport	DVP	2,098	-	-	-	-	-	302	1,416	984	999	935	466	
Lac Qui Parle County Airport - Bud Frye Field	DXX	1,717	-	-	-	-	-	283	1,400	600	800	1,000	200	
Duluth Sky Harbor Airport	DYT	12,536	-	1,364	-	-	-	-	10,981	2,919	417	13,205	278	
Ely Municipal Airport	ELO	7,176	-	755	-	269	-	-	3,280	4,920	6,970	820	410	
Wheaton Municipal Airport	ETH	1,800	-	-	-	-	-	-	1,800	-	1,800	-	-	
Eveleth-Virginia Municipal Airport	EVM	7,069	-	207	464	147	-	113	7,600	400	7,200	640	160	
Faribault Municipal Airport	FBL	15,524	-	1,531	-	182	100	1,258	13,017	5,579	930	13,017	4,649	
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	8,538	-	195	439	278	100	-	3,248	6,302	3,975	3,719	1,856	
Preston - Fillmore County Airport	FKA	5,983	-	-	-	204	-	313	4,550	1,950	2,275	2,600	1,625	
Bigfork Municipal Airport	FOZ	2,400	-	-	-	-	-	-	480	1,920	960	1,440	-	
Fairmont Municipal Airport	FRM	6,007	671	451	-	-	100	-	3,615	3,615	5,423	1,808	-	
Fosston Municipal Airport	FSE	7,790	-	911	-	-	-	499	5,612	3,588	920	8,004	276	
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	3,922	944	635	-	-	-	-	2,475	3,025	3,300	1,650	550	
Glenwood Municipal Airport	GHW	4,900	-	-	-	-	-	-	1,715	3,185	980	2,940	980	
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	18,074	382	771	-	366	60	-	9,827	9,827	11,792	3,931	3,931	
Glencoe Municipal Airport - Vernon Perschau Field	GYL	9,347	-	339	-	-	-	929	4,246	6,369	1,592	7,961	1,062	
Hutchinson Municipal Airport - Butler Field	HCD	9,962	-	827	620	393	45	302	6,683	5,468	5,057	4,732	2,361	
Hallock Municipal Airport	HCO	3,357	-	-	1,443	-	-	-	3,120	1,680	4,752	48	-	
Range Regional Airport	HIB	23,636	-	1,130	-	403	100	1,858	8,138	18,989	18,989	5,425	2,713	
McGregor - Isedor Iverson Airport	HZX	3,830	-	-	-	-	-	170	2,360	1,640	1,665	1,558	777	
Falls International Airport	INL	13,278	-	-	-	2,682	100	-	4,818	11,242	2,730	12,848	482	
Moorhead Municipal Airport	JKJ	7,794	-	1,206	-	-	-	-	6,030	2,970	3,746	3,505	1,749	
Mora Municipal Airport	JMR	8,445	-	-	-	760	-	195	2,460	6,940	3,913	3,661	1,827	
St. James Municipal Airport	JYG	4,494	-	-	-	306	-	-	3,840	960	960	3,840	-	
Litchfield Municipal Airport	LJF	8,321	-	324	-	-	-	355	4,500	4,500	900	6,300	1,800	
Little Falls-Morrison County Airport	LXL	9,011	-	339	-	-	50	-	1,709	7,691	3,913	3,661	1,827	
Luverne Municipal Airport - Quentin Aanenson Field	LYV	10,562	-	-	-	-	-	338	4,360	6,540	3,270	3,270	4,360	
Maple Lake Municipal Airport	MGG	8,562	-	838	-	-	-	-	8,742	658	1,880	2,350	5,170	
Jackson Municipal Airport	MJQ	5,814	-	-	-	-	10	176	1,800	4,200	6,000	-	-	
Mankato Regional Airport - Sohler Field	MKT	70,093	6,092	10,924	9,203	1,947	500	3,741	69,700	32,800	20,500	30,750	51,250	
Southwest Minnesota Regional-Marshall/Ryan Field	MML	10,201	4,199	1,694	6,344	-	100	309	8,682	14,166	17,136	3,427	2,285	
Morris Municipal Airport - Charlie Schmidt Field	MOX	3,053	-	1,168	1,312	208	6	160	4,725	1,181	5,020	591	295	
Montevideo-Chippewa County Airport	MVE	10,889	-	521	-	-	20	571	6,000	6,000	10,800	960	240	
Windom Municipal Airport	MWM	7,756	-	544	-	-	_	-	4,150	4,150	4,150	3,320	830	
Moose Lake-Carlton County Airport	MZH	4,178	-	-	-	-	-	722	2,205	2,695	1,960	1,470	1,470	

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				Baseline G/	A Operation	s (2010)							
				Ai	rcraft Type				Operat	tion Type	Оре	eration Purpo	se
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Winona Municipal Airport - Max Conrad Field	ONA	7,491	732	1,231	553	176	25	270	8,383	2,096	6,287	2,096	2,096
Orr Regional Airport	ORB	2,500	-	-	-	-	-	-	1,000	1,500	750	1,750	-
Worthington Municipal Airport	OTG	8,286	-	1,245	-	-	509	-	4,016	6,024	5,020	5,020	-
Olivia Regional Airport	OVL	2,676	-	-	-	-	-	964	2,148	1,492	1,515	1,418	707
Owatonna Degner Regional Airport	OWA	27,907	-	1,223	-	-	250	670	14,469	15,581	12,508	11,703	5,839
Paynesville Municipal Airport	PEX	4,655	-	223	-	-	-	122	3,350	1,650	500	4,000	500
Park Rapids Municipal Airport - Konshok Field	PKD	14,001	-	1,699	-	-	25	-	7,863	7,863	6,545	6,124	3,056
Princeton Municipal Airport	PNM	11,269	-	539	-	192	300	-	6,150	6,150	1,845	9,225	1,230
Pipestone Municipal Airport	PQN	7,694	-	476	-	-	30	-	4,100	4,100	8,200	-	-
Pine River Regional Airport	PWC	9,251	381	512	575	-	-	281	6,600	4,400	1,100	8,250	1,650
Red Wing Regional Airport	RGK	10,744	1,528	617	462	-	700	-	4,215	9,835	10,538	2,810	703
Rush City Regional Airport	ROS	21,155	-	397	-	283	10	218	11,032	11,032	2,206	8,826	11,032
Roseau Municipal Airport - Rudy Billberg Field	ROX	8,395	-	-	-	-	-	605	900	8,100	8,100	900	-
Warroad International Memorial Airport	RRT	5,296	518	348	2,347	-	-	191	6,090	2,610	6,960	1,305	435
Rochester International Airport	RST	27,210	2,240	1,507	-	358	233	275	18,457	13,366	25,458	4,773	1,591
Redwood Falls Municipal Airport	RWF	9,274	-	2,661	-	632	300	1,458	9,741	4,584	4,298	9,741	287
Staples Municipal Airport	SAZ	8,498	-	526	-	-	-	576	4,800	4,800	1,920	6,720	960
Blue Earth Municipal Airport	SBU	11,564	-	-	2,102	334	-	-	10,500	3,500	6,300	6,300	1,400
South St. Paul Municipal Airport - Fleming Field	SGS	51,432	-	2,493	6,721	533	-	820	40,300	21,700	23,560	34,100	4,340
St. Cloud Regional Airport	STC	28,628	4,369	1,836	-	-	2,876	-	28,283	9,428	11,313	7,542	18,855
Tracy Municipal Airport	TKC	3,040	-	-	-	-	-	-	1,824	1,216	1,216	1,520	304
Dodge Center Municipal Airport	TOB	8,161	-	-	-	157	-	482	2,200	6,600	2,640	2,640	3,520
Thief River Falls Regional Airport	TVF	20,995	4,692	1,052	2,363	-	100	576	10,124	19,653	8,933	5,955	14,889
Two Harbors Municipal - Richard B. Helgeson Field	TWM	7,678	-	224	-	160	-	738	5,280	3,520	880	6,160	1,760
New Ulm Municipal Airport	ULM	7,519	-	1,582	888	-	10	-	7,500	2,500	7,000	2,000	1,000
Ortonville Municipal Airport - Martinson Field	VVV	5,000	-	-	-	-	-	-	1,500	3,500	2,500	2,000	500
Waskish Municipal Airport	VWU	200	-	-	-	-	-	-	130	70	30	170	-
Longville Municipal Airport	XVG	6,284	-	441	-	-	-	-	2,354	4,371	336	6,389	-
Walker Municipal Airport	Y49	7,619	-	697	-	994	-	-	6,517	2,793	1,862	7,448	-
Sleepy Eye Municipal Airport	Y58	1,217	-	-	480	152	-	351	1,298	902	916	857	428
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	4,062	-	-	-	-	-	138	1,400	2,800	1,748	1,636	816

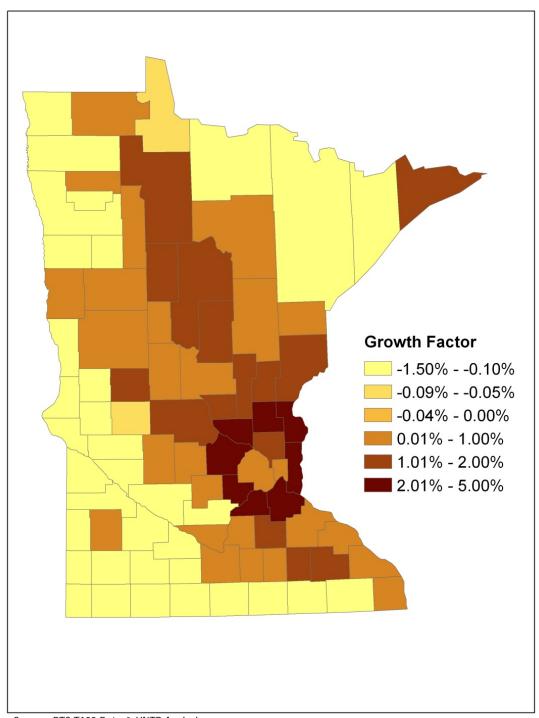
Source: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB Analysis

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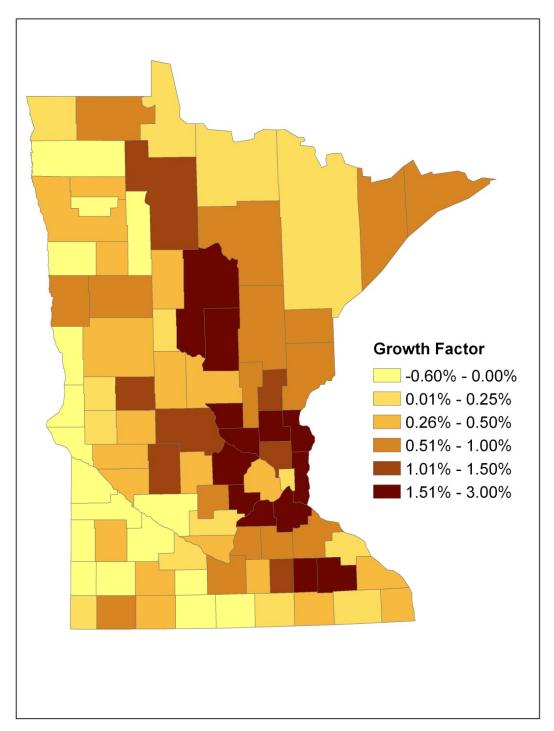
Figure C-23: Population Growth (Historical Figure from 1970 to 2010)





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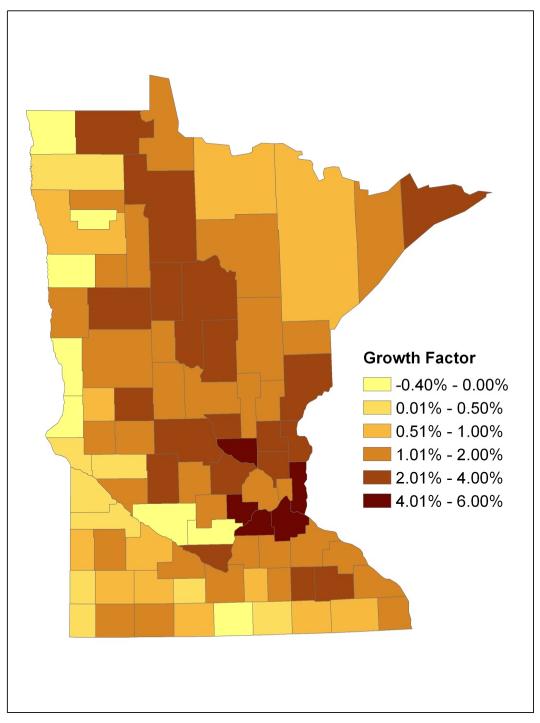
Figure C-24: Population Growth (Forecast from 2011 to 2030)





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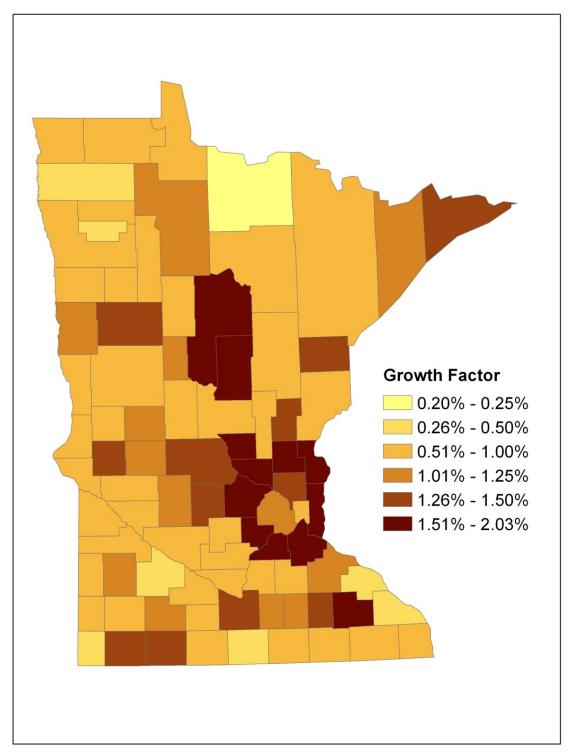
Figure C-25: Employment Growth (Historical Figure from 1970 to 2010)





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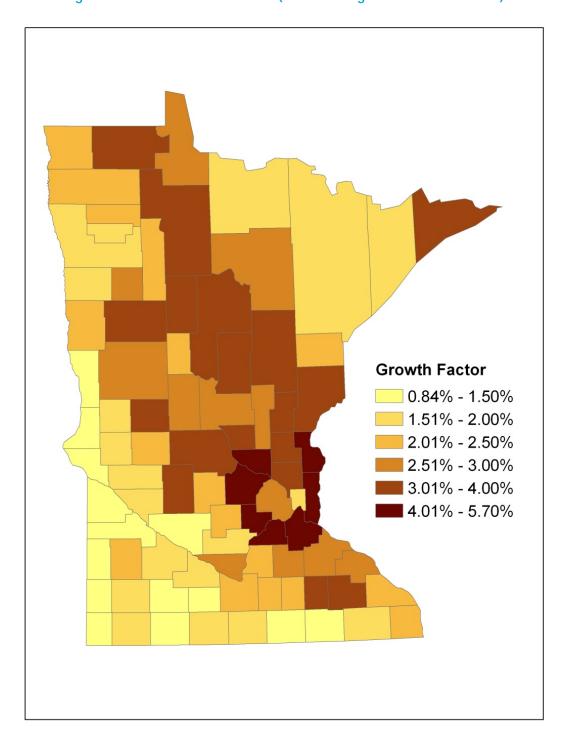
Figure C-26: Employment Growth (Forecast from 2011 to 2030)





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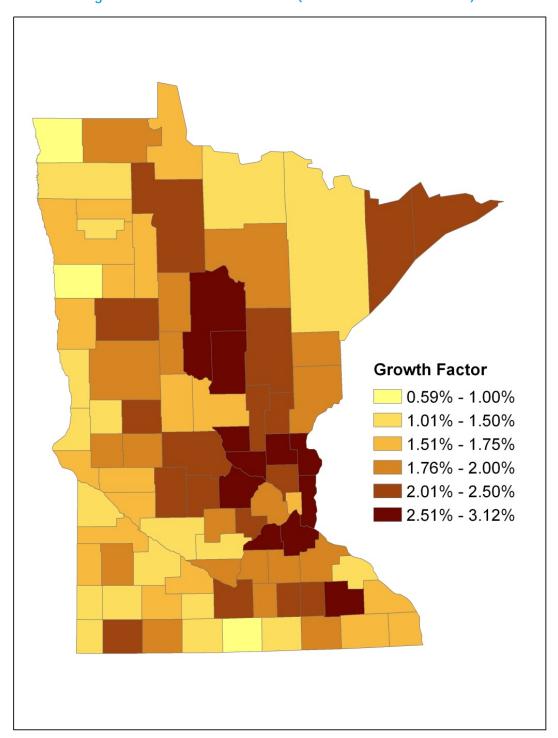
Figure C-27: Total Income Growth (Historical Figure from 1970 to 2010)





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Figure C-28: Total Income Growth (Forecast from 2011 to 2030)





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Figure C-29: Regression Equations Used

 $Log_{10}(Passenger) = -2.97 + 0.495 * Log_{10}(Schedule) + 1.6 * Log_{10}(Total Income) + 0.214 * BJI - 0.988 * BRD - 0.347 * HIB + 0.000 +$

1.289 * INL - 0.272 * RST

R-Square: 0.9868; Adjusted R-Square: 0.9738 Passenger: annual passenger enplanements

Schedule: OAG annual scheduled passenger aircraft departures

Total Income: millions of dollars in 2010 prices within airport catchment area BJI: dummy variable, equals 1 when the airport is Bemidji Regional, 0 otherwise

BRD: dummy variable, equals 1 when the airport is Brainerd Lakes Regional, 0 otherwise HIB: dummy variable, equals 1 when the airport is Hibbing Range Regional, 0 otherwise

INL: dummy variable, equals 1 when the airport is Falls International, 0 otherwise

RST: dummy variable, equals 1 when the airport is Rochester International, 0 otherwise



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Table C-3: Commercial Fleet Forecast for Bemidji Regional Airport

Airline	Fauinment	Conto	2010 Departures		Flee	t Mix			Seats / D	Departure	
Allille	Equipment	Seats	2010 Departures	2010	2015	2020	2030	2010	2015	2020	2030
	BEECH QUEEN AIR	9	51	4.0%	4.0%	4.0%	0.0%	0.4	0.4	0.4	0.0
Bemidji Airlines	BEECH 99	12	117	9.2%	9.2%	9.2%	13.2%	1.1	1.1	1.1	1.6
-	BEECH C99	12	86	6.8%	6.8%	6.8%	6.8%	0.8	0.8	0.8	0.8
	SAAB-FAIRCHD 340/B	34	891	70.0%	0.0%	0.0%	0.0%	23.8	0.0	0.0	0.0
Delta	CANAD RJ-200ER/RJ440	50	125	9.8%	79.8%	53.8%	59.8%	4.9	39.9	26.9	29.9
	Canadair CR-7	70		0.0%	0.0%	26.0%	20.0%		0.0	18.2	14.0
USA Jet Airlines- Inc.	DOUGLAS DC-9-15F	50	2	0.2%	0.0%	0.0%	0.0%	0.1	0.0	0.0	0.0
USA JELAIIIIIES- IIIC.	MCDON MD-80,1,2,3,7,	150			0.2%	0.2%	0.2%	0.0	0.3	0.3	0.3
	Total			100%	100%	100%	100%	31.1	42.5	47.7	46.6

Source: BTS T100 Data & HNTB Analysis

Table C-4: Commercial Fleet Forecast for Brainerd Lakes Regional Airport

Airline	Equipment	Seats	2010 Departures		Fleet I	Mix			Seats / D	Departure	
Amme	Equipment	Seais	2010 Departures	2010	2015	2020	2030	2010	2015	2020	2030
	BEECH QUEEN AIR	9	5	0.6%	0.6%	0.6%	0.6%	0.1	0.1	0.1	0.1
Bemidji Airlines	BEECH 99	12	2	0.2%	0.2%	0.2%	0.2%	0.0	0.0	0.0	0.0
	BEECH C99	12	2	0.2%	0.2%	0.2%	0.2%	0.0	0.0	0.0	0.0
	SAAB-FAIRCHD 340/B	34	841	94.5%	32.8%	0.0%	0.0%	32.1	11.2	0.0	0.0
Delta	CANAD RJ-200ER/RJ440	50	28	3.1%	65.0%	97.7%	87.5%	1.6	32.5	48.9	43.8
Della	Canadair CR-9	76					10.0%	0.0	0.0	0.0	0.0
	EMBRAER-175	76	2	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
Sun Country Airlines	BOEING 737-800	162	10	1.1%	1.2%	1.3%	1.5%	1.8	1.9	2.1	2.4
	Total			99.8%	100%	100%	100%	35.6	45.7	51.1	53.9

Source: BTS T100 Data & HNTB Analysis

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Table C-5: Commercial Fleet Forecast for Duluth International Airport

Airline	Equipment	Seats	2010		Flee	t Mix			Seats / [Departure	
7 11111110	Ечартык	Cours	Departures	2010	2015	2020	2030	2010	2015	2020	2030
Casino Express	BOEING 737-400	146	8	0.2%	0.2%	0.2%	0.2%	0.3	0.3	0.3	0.3
	SAAB-FAIRCHD 340/B	34	202	5.2%				1.8	0.0	0.0	0.0
	CANADAIR RJ-100/ER	50	123	3.2%				1.6	0.0	0.0	0.0
	CANAD RJ-200ER/RJ440	50	3,114	80.4%	52.0%	52.0%	31.5%	40.2	26.0	26.0	15.8
	CANADAIR RJ 700	70			10.5%			0.0	7.4	0.0	0.0
	CANADAIR RJ 900	76	1	0.0%	10.7%	21.2%	31.5%	0.0	8.1	16.1	23.9
	EMBRAER-175	76	102	2.6%	10.5%	10.5%	10.2%	2.0	8.0	8.0	7.8
Delta	AIRBUS A319	124	2	0.1%	10.5%		10.5%	0.1	13.0	0.0	13.0
Della	DOUGLAS DC-9-50	125	34	0.9%				1.1	0.0	0.0	0.0
	MCDON MD-80,1,2,3,7,	149				10.5%			0.0	15.6	0.0
	AIRB A320-100/200	148	1	0.0%				0.0	0.0	0.0	0.0
	MCDONNELL D-90	150	1	0.0%				0.0	0.0	0.0	0.0
	Boeing 737-800	160					10.5%		0.0	0.0	16.8
	BOEING 757-200	183	1	0.0%				0.0	0.0	0.0	0.0
	BOEING 757-300	224	1	0.0%				0.1	0.0	0.0	0.0
Allegiant Air	MCDON MD-80,1,2,3,7,	150	194	5.0%	5.0%	5.0%	5.0%	7.5	7.5	7.5	7.5
	CITATION X CE750X	8	2	0.1%	0.1%	0.1%	0.1%	0.0	0.0	0.0	0.0
Other	BAE HS-125	8	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	AIRBUS A-318	19	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
Sun Country Airlines	BOEING 737-800	162	21	0.5%	0.5%	0.5%	0.5%	0.9	0.8	0.8	0.8
United	EMBRAER-146	50	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
Officu	BOEING 747-400	374	1	0.0%	0.0%	0.0%	0.0%	0.1	0.0	0.0	0.0
	DOUGLAS DC-9-15F	50	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
USA Jet Airlines- Inc.	MCDON MD-80,1,2,3,7,	150						0.0	0.0	0.0	0.0
	DOUGLAS DC-9-30	100	58	1.5%	0.0%	0.0%	0.0%	1.5	0.0	0.0	0.0
Southwest Airlines	BOEING 737-300	137	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
Course DTC T100 Date 0 HNTD Av	Total		3,871	100%	100%	100%	100%	57.3	71.1	74.3	85.9

Source: BTS T100 Data & HNTB Analysis

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Table C-6: Commercial Fleet Forecast for Chisholm / Hibbing Municipal – Range Regional Airport

Airline	Equipment	Seats	2010		Flee	t Mix			Seats / [Departure	
Allille	Equipment	Seals	Departures	2010	2015	2020	2030	2010	2015	2020	2030
Delta	SAAB-FAIRCHD 340/B	34	1,568	99.1%	99.0%	78.9%		33.7	33.7	26.8	0.0
Della	CANAD RJ-200ER/RJ440	50				20.0%	98.7%	0.0	0.0	10.0	49.4
Sun Country Airlines	BOEING 737-800	162	14	0.9%	1.0%	1.1%	1.3%	1.4	1.6	1.8	2.1
	Total	•	1,582	100%	100%	100%	100%	35.1	35.3	38.6	51.5

Source: BTS T100 Data & HNTB Analysis

Table C-7: Commercial Fleet Forecast for Falls International Airport

Airline	Equipment	Soate	Seats 2010		Fleet	Mix			Seats / D	Departure	
Alline	Equipment	Seals	Departures	2010	2015	2020	2030	2010	2015	2020	2030
Delta	SAAB-FAIRCHD 340/B	34	791	97.4%	65.7%	32.7%		33.1	22.3	11.1	0.0
Della	CANAD RJ-200ER/RJ440	50	10	1.2%	32.8%	65.6%	98.0%	0.6	16.4	32.8	49.0
Allegiant Air	MCDON MD-80,1,2,3,7,	162	2	0.2%	0.3%	0.4%	0.6%	0.4	0.5	0.6	1.0
Othor	GULFSTREAM G150	9	1	0.1%	0.1%	0.1%	0.1%	0.0	0.0	0.0	0.0
Other	GULFSTREAM G450	14	2	0.2%	0.2%	0.2%	0.2%	0.0	0.0	0.0	0.0
Sun Country Airlines	BOEING 737-800	162	6	0.7%	0.8%	0.9%	1.0%	1.2	1.3	1.5	1.6
	Total	•	812	100%	100%	100%	100%	35.4	40.6	46.1	51.6

Source: BTS T100 Data & HNTB Analysis

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Table C-8: Commercial Fleet Forecast for Rochester International Airport

Airline	Equipment	Seats	2010 Departures		Flee	t Mix			Seats / D	eparture	
Allille	Equipment	Seats	2010 Departures	2010	2015	2020	2030	2010	2015	2020	2030
	EMBRAER-135	37	10	0.2%				0.1	0.0	0.0	0.0
	EMBRAER-140	44	877	21.0%				9.3	0.0	0.0	0.0
American Airlines	EMBRAER-145	50	937	22.5%	33.0%	19.0%		11.2	16.5	9.5	0.0
	CANADAIR RJ 700	70			11.0%	22.0%	33.0%	0.0	7.7	15.4	23.1
	Boeing 737-800	160				3.0%	11.0%	0.0	0.0	4.8	17.6
Casino Express	BOEING 737-400	144	2	0.0%	0.0%	0.0%	0.0%	0.1	0.0	0.0	0.0
	BOEING 757-200	182	1	0.0%				0.0	0.0	0.0	0.0
	Airbus 319	124					10.8%		0.0	0.0	13.4
	DOUGLAS DC-9-30	100	1	0.0%				0.0	0.0	0.0	0.0
	EMBRAER-175	76	2	0.0%				0.0	0.0	0.0	0.0
Delta	CANADAIR RJ-100/ER	50	4	0.1%				0.0	0.0	0.0	0.0
Della	DOUGLAS DC-9-50	125	4	0.1%				0.1	0.0	0.0	0.0
	CANADAIR RJ 700	70				10.9%			0.0	7.6	0.0
	CANADAIR RJ 900	76	29	0.7%			10.8%	0.5	0.0	0.0	8.2
	SAAB-FAIRCHD 340/B	34	99	2.4%				0.8	0.0	0.0	0.0
	CANAD RJ-200ER/RJ440	50	2,151	51.6%	54.6%	43.5%	32.4%	25.8	27.3	21.8	16.2
Allegiant Air	MCDON MD-80,1,2,3,7,	150	13	0.3%	0.4%	0.5%	0.7%	0.5	0.6	0.8	1.1
	CESSNA 206/207/209	9	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	BOEING 777-200/ER	400	1	0.0%	0.1%	0.1%	0.1%	0.1	0.4	0.4	0.4
	CESSNA CITATION II	8	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	CITATION III 650/550	7	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	GULFSTREAM G-200	8	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
Other	GULFSTREAM G150	9	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	GULFSTREAM G450	16	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	AIRBUS A319	124	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	DASSAULT FALCON 7X	15	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
	BOEING 747SP	300	1	0.0%	0.0%	0.0%	0.0%	0.1	0.0	0.0	0.0
	GULFSTREAM G-IV	15	2	0.0%	0.2%	0.2%	0.2%	0.0	0.0	0.0	0.0
Sun Country Airlines	BOEING 737-700/LR	128	1	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.0	0.0
Juli Country Allilles	BOEING 737-800	175	21	0.5%	0.6%	0.7%	0.9%	0.9	1.1	1.2	1.6
US Airways	AIRBUS A321	183	3	0.1%	0.1%	0.1%	0.1%	0.1	0.2	0.2	0.2
	Total		4167	100.0%	100.0%	100.0%	100.0%	49.8	53.8	61.7	81.7

Source: BTS T100 Data & HNTB Analysis

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Table C-9: Top 30 Origin Market of Bemidji Regional Airport

Inbound Passenger to Bemidji Regional Airport										
Destination	Origin	Origin Name	2010	2015	2020	2030				
ВЛ	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	1,311	1,380	1,631	2,881				
ВЛ	ORD	Chicago, IL: O Hare	931	990	1,175	2,085				
ВЛ	PHX	Phoenix, AZ: Sky Harbor International	825	854	1,006	1,775				
ВЛ	LAX	Los Angeles, CA: Los Angeles International	677	731	878	1,596				
ВЛ	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	635	674	807	1,460				
ВЛ	DCA	Washington, DC: Washington National	592	628	740	1,303				
ВЛ	MCO	Orlando, FL: Orlando International	550	580	692	1,248				
ВЛ	DEN	Denver, CO: Denver International	571	592	699	1,243				
ВЛ	ATL	Atlanta, GA: Hartsfield-Jackson	560	586	694	1,236				
ВЛ	DTW	Detroit, MI: Detroit Metro Wayne County	476	529	636	1,156				
ВЛ	LAS	Las Vegas, NV: McCarran International	476	498	600	1,112				
ВЛ	SEA	Seattle, WA: Seattle/Tacoma International	497	522	615	1,082				
ВЛ	PHL	Philadelphia, PA: Philadelphia International	423	463	558	1,023				
ВЛ	BOS	Boston, MA: Logan International	412	449	536	964				
ВЛ	MDW	Chicago, IL: Chicago Midway	423	450	534	948				
ВЛ	IAH	Houston, TX: Houston Intercontinental	423	440	520	927				
ВЛ	PDX	Portland, OR: Portland International	423	442	521	921				
ВЛ	EWR	Newark, NJ: Newark Liberty International	381	417	496	888				
ВЛ	MKE	Milwaukee, WI: General Mitchell Field	338	363	434	784				
ВЛ	SF0	San Francisco, CA: International	338	356	423	756				
ВЛ	ABQ	Albuquerque, NM: Albuquerque International	317	338	401	717				
ВЛ	LGA	New York, NY: La Guardia	307	336	400	715				
ВЛ	STL	St. Louis, MO: Lambert International	307	330	395	712				
ВЛ	ANC	Anchorage, AK: Anchorage International	307	330	388	682				
ВЛ	BWI	Baltimore, MD: Baltimore/Washington International	296	317	376	670				
ВЛ	SAN	San Diego, CA: San Diego International Lindbergh Field	286	300	354	626				
ВЛ	TPA	Tampa, FL: Tampa International	254	268	319	573				
ВЛ	IND	Indianapolis, IN: Indianapolis International	254	268	317	560				
ВЛ	FLL	Fort Lauderdale, FL: Fort Lauderdale International	233	247	296	535				
ВЛ	RSW	Ft. Myers, FL: Southwest Florida International Airport	222	234	283	530				
		Percent of Total	65.13%	64.95%	64.91%	64.85%				



FORECAST TECHNICAL REPORT

Table C-10: Top 30 Destination Market of Bemidji Regional Airport

		Outbound Passenger from Bemidji Regional Airp	ort			
Origin	Destination	Destination Name	2010	2015	2020	2030
BJI	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	1,201	1,264	1,494	2,639
BJI	ORD	Chicago, IL: O Hare	884	941	1,116	1,982
BJI	PHX	Phoenix, AZ: Sky Harbor International	863	893	1,052	1,857
BJI	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	611	650	777	1,407
BJI	LAX	Los Angeles, CA: Los Angeles International	590	637	765	1,390
BJI	DCA	Washington, DC: Washington National	600	637	750	1,322
BJI	DTW	Detroit, MI: Detroit Metro Wayne County	513	570	685	1,247
BJI	LAS	Las Vegas, NV: McCarran International	524	548	661	1,225
BJI	ATL	Atlanta, GA: Hartsfield-Jackson	546	571	676	1,204
BJI	SEA	Seattle, WA: Seattle/Tacoma International	546	573	675	1,188
BJI	MCO	Orlando, FL: Orlando International	513	541	646	1,165
BJI	IAH	Houston, TX: Houston Intercontinental	459	477	564	1,005
BJI	PHL	Philadelphia, PA: Philadelphia International	415	454	548	1,003
BJI	DEN	Denver, CO: Denver International	459	475	561	998
BJI	MDW	Chicago, IL: Chicago Midway	404	430	510	905
BJI	PDX	Portland, OR: Portland International	404	422	498	880
BJI	BOS	Boston, MA: Logan International	371	404	483	868
BJI	MKE	Milwaukee, WI: General Mitchell Field	371	398	476	860
BJI	EWR	Newark, NJ: Newark Liberty International	360	394	470	840
BJI	SF0	San Francisco, CA: International	371	390	464	829
BJI	BWI	Baltimore, MD: Baltimore/Washington International	338	362	430	766
BJI	ANC	Anchorage, AK: Anchorage International	338	364	428	752
BJI	SAN	San Diego, CA: San Diego International Lindbergh Field	338	355	420	743
BJI	STL	St. Louis, MO: Lambert International	306	329	394	709
BJI	LGA	New York, NY: La Guardia	295	323	384	688
BJI	ABQ	Albuquerque, NM: Albuquerque International	295	314	372	666
BJI	IND	Indianapolis, IN: Indianapolis International	284	300	355	627
BJI	TPA	Tampa, FL: Tampa International	262	277	329	592
BJI	SMF	Sacramento, CA: Sacramento Metropolitan	273	284	334	590
BJI	MCI	Kansas City, MO: Kansas City International	240	255	303	539
		Percent of Total	64.81%	64.60%	64.53%	64.39%



FORECAST TECHNICAL REPORT

Table C-11: Top 30 Origin Market of Brainerd Lakes Regional Airport

		Inbound Passenger to the Brainerd Lakes Regiona	l Airport			
Destination	Origin	Origin Name	2010	2015	2020	2030
BRD	DEN	Denver, CO: Denver International	877	926	1,185	2,011
BRD	PHX	Phoenix, AZ: Sky Harbor International	790	832	1,063	1,789
BRD	ORD	Chicago, IL: O Hare	537	582	748	1,268
BRD	RSW	Ft. Myers, FL: Southwest Florida International Airport	504	541	710	1,267
BRD	DCA	Washington, DC: Washington National	537	580	741	1,245
BRD	LAX	Los Angeles, CA: Los Angeles International	493	543	707	1,225
BRD	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	493	534	692	1,195
BRD	ATL	Atlanta, GA: Hartsfield-Jackson	493	526	675	1,145
BRD	MDW	Chicago, IL: Chicago Midway	450	487	626	1,061
BRD	MCO	Orlando, FL: Orlando International	428	459	594	1,022
BRD	SF0	San Francisco, CA: International	373	399	515	877
BRD	EWR	Newark, NJ: Newark Liberty International	351	391	505	862
BRD	TPA	Tampa, FL: Tampa International	329	354	457	783
BRD	SEA	Seattle, WA: Seattle/Tacoma International	329	352	449	754
BRD	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	318	341	437	736
BRD	LAS	Las Vegas, NV: McCarran International	296	315	412	729
BRD	BOS	Boston, MA: Logan International	263	291	378	648
BRD	DTW	Detroit, MI: Detroit Metro Wayne County	252	285	372	645
BRD	MCI	Kansas City, MO: Kansas City International	263	284	366	622
BRD	IND	Indianapolis, IN: Indianapolis International	263	283	363	612
BRD	LGA	New York, NY: La Guardia	241	269	347	592
BRD	PDX	Portland, OR: Portland International	252	268	343	578
BRD	IAH	Houston, TX: Houston Intercontinental	241	256	328	557
BRD	MKE	Milwaukee, WI: General Mitchell Field	219	240	311	535
BRD	PHL	Philadelphia, PA: Philadelphia International	208	232	304	530
BRD	STL	St. Louis, MO: Lambert International	197	216	280	482
BRD	RDU	Raleigh/Durham, NC: Raleigh Durham	186	204	265	458
BRD	SAN	San Diego, CA: San Diego International Lindbergh Field	186	199	255	431
BRD	CMH	Columbus, OH: Columbus International	175	190	244	414
BRD	PIT	Pittsburgh, PA: Pittsburgh International	154	173	226	397
		Percent of Total	68.68%	68.51%	68.49%	68.48%



FORECAST TECHNICAL REPORT

Table C-12: Top 30 Destination Market of Brainerd Lakes Regional Airport

		Outbound Passenger from the Brainerd Lakes Region	nal Airport			
Origin	Destination	Destination Name	2009	2015	2020	2030
BRD	DEN	Denver, CO: Denver International	893	942	1,215	2,046
BRD	PHX	Phoenix, AZ: Sky Harbor International	850	896	1,155	1,925
BRD	ORD	Chicago, IL: O Hare	581	629	812	1,370
BRD	RSW	Ft. Myers, FL: Southwest Florida International Airport	484	519	669	1,215
BRD	LAX	Los Angeles, CA: Los Angeles International	484	532	686	1,201
BRD	ATL	Atlanta, GA: Hartsfield-Jackson	516	550	709	1,198
BRD	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	484	524	676	1,172
BRD	DCA	Washington, DC: Washington National	462	499	644	1,072
BRD	MCO	Orlando, FL: Orlando International	398	427	551	951
BRD	LAS	Las Vegas, NV: McCarran International	366	389	502	900
BRD	MDW	Chicago, IL: Chicago Midway	366	396	511	863
BRD	SEA	Seattle, WA: Seattle/Tacoma International	355	379	489	813
BRD	SF0	San Francisco, CA: International	344	368	475	809
BRD	EWR	Newark, NJ: Newark Liberty International	312	347	448	766
BRD	TPA	Tampa, FL: Tampa International	312	335	432	742
BRD	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	301	323	416	697
BRD	DTW	Detroit, MI: Detroit Metro Wayne County	269	304	392	688
BRD	MCI	Kansas City, MO: Kansas City International	290	314	405	686
BRD	MKE	Milwaukee, WI: General Mitchell Field	280	306	394	682
BRD	PHL	Philadelphia, PA: Philadelphia International	247	276	355	630
BRD	PDX	Portland, OR: Portland International	247	263	339	567
BRD	BOS	Boston, MA: Logan International	226	250	323	556
BRD	LGA	New York, NY: La Guardia	226	252	325	555
BRD	IND	Indianapolis, IN: Indianapolis International	215	232	299	500
BRD	RDU	Raleigh/Durham, NC: Raleigh Durham	194	211	273	476
BRD	STL	St. Louis, MO: Lambert International	183	200	258	447
BRD	IAH	Houston, TX: Houston Intercontinental	183	194	250	422
BRD	SMF	Sacramento, CA: Sacramento Metropolitan	183	194	250	416
BRD	CMH	Columbus, OH: Columbus International	161	175	226	381
BRD	ANC	Anchorage, AK: Anchorage International	161	177	228	377
	S OD1A Data & HN	Percent of Total	67.84%	67.63%	67.63%	67.55%



FORECAST TECHNICAL REPORT

Table C-13: Top 30 Origin Market of Duluth International Airport

		Inbound Passenger to Duluth International Airpo	rt			
Destination	Origin	Origin Name	2010	2015	2020	2030
DLH	LAS	Las Vegas, NV: McCarran International	21,223	20,927	25,117	35,472
DLH	PHX	Phoenix, AZ: Sky Harbor International	5,571	5,437	6,376	8,575
DLH	DTW	Detroit, MI: Detroit Metro Wayne County	4,521	4,734	5,666	7,855
DLH	MCO	Orlando, FL: Orlando International	4,285	4,257	5,058	6,953
DLH	ORD	Chicago, IL: O Hare	4,119	4,132	4,878	6,601
DLH	DEN	Denver, CO: Denver International	4,060	3,968	4,661	6,320
DLH	DCA	Washington, DC: Washington National	3,270	3,269	3,831	5,146
DLH	RSW	Ft. Myers, FL: Southwest Florida International Airport	2,644	2,624	3,165	4,509
DLH	SEA	Seattle, WA: Seattle/Tacoma International	2,750	2,721	3,191	4,280
DLH	LAX	Los Angeles, CA: Los Angeles International	2,491	2,536	3,032	4,199
DLH	BOS	Boston, MA: Logan International	2,455	2,518	2,996	4,105
DLH	ATL	Atlanta, GA: Hartsfield-Jackson	2,384	2,351	2,772	3,759
DLH	TPA	Tampa, FL: Tampa International	2,325	2,314	2,743	3,757
DLH	IAH	Houston, TX: Houston Intercontinental	2,384	2,340	2,752	3,737
DLH	MDW	Chicago, IL: Chicago Midway	2,325	2,333	2,754	3,726
DLH	SF0	San Francisco, CA: International	2,302	2,280	2,702	3,676
DLH	LGA	New York, NY: La Guardia	2,172	2,240	2,657	3,622
DLH	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	2,125	2,129	2,534	3,495
DLH	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	2,113	2,096	2,465	3,320
DLH	EWR	Newark, NJ: Newark Liberty International	1,747	1,802	2,137	2,913
DLH	PHL	Philadelphia, PA: Philadelphia International	1,582	1,631	1,959	2,734
DLH	SFB	Sanford, FL: Sanford International	1,676	1,665	1,979	2,720
DLH	PDX	Portland, OR: Portland International	1,653	1,627	1,911	2,572
DLH	SAN	San Diego, CA: San Diego International Lindbergh Field	1,617	1,600	1,881	2,536
DLH	CLE	Cleveland, OH: Hopkins International	1,475	1,520	1,819	2,525
DLH	BWI	Baltimore, MD: Baltimore/Washington International	1,475	1,488	1,759	2,387
DLH	JFK	New York, NY: Kennedy International	1,381	1,424	1,690	2,303
DLH	STL	St. Louis, MO: Lambert International	1,369	1,389	1,654	2,271
DLH	PIT	Pittsburgh, PA: Pittsburgh International	1,251	1,304	1,567	2,195
DLH	IFP	Bullhead City, AZ: Laughlin Bullhead International	1,239	1,247	1,497	2,129
	•	Percent of Total	66.84%	66.65%	66.71%	66.87%



FORECAST TECHNICAL REPORT

Table C-14: Top 30 Destination Market of Duluth International Airport

		Outbound Passenger from Duluth International A	irport			
Origin	Destination	Destination Name	2010	2015	2020	2030
DLH	LAS	Las Vegas, NV: McCarran International	21,877	21,581	25,901	36,571
DLH	PHX	Phoenix, AZ: Sky Harbor International	5,695	5,560	6,520	8,767
DLH	MCO	Orlando, FL: Orlando International	4,419	4,392	5,218	7,171
DLH	DEN	Denver, CO: Denver International	4,178	4,084	4,798	6,504
DLH	DTW	Detroit, MI: Detroit Metro Wayne County	3,660	3,835	4,589	6,361
DLH	ORD	Chicago, IL: O Hare	3,817	3,830	4,521	6,116
DLH	DCA	Washington, DC: Washington National	3,359	3,360	3,937	5,288
DLH	SEA	Seattle, WA: Seattle/Tacoma International	2,950	2,919	3,424	4,591
DLH	LAX	Los Angeles, CA: Los Angeles International	2,685	2,735	3,270	4,527
DLH	RSW	Ft. Myers, FL: Southwest Florida International Airport	2,528	2,510	3,027	4,312
DLH	BOS	Boston, MA: Logan International	2,396	2,458	2,925	4,007
DLH	TPA	Tampa, FL: Tampa International	2,336	2,325	2,757	3,774
DLH	ATL	Atlanta, GA: Hartsfield-Jackson	2,372	2,340	2,758	3,740
DLH	IAH	Houston, TX: Houston Intercontinental	2,300	2,258	2,655	3,605
DLH	SFO	San Francisco, CA: International	2,215	2,195	2,601	3,539
DLH	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	2,143	2,148	2,557	3,526
DLH	MDW	Chicago, IL: Chicago Midway	2,191	2,199	2,596	3,512
DLH	LGA	New York, NY: La Guardia	1,938	2,000	2,372	3,233
DLH	SFB	Sanford, FL: Sanford International	1,938	1,927	2,289	3,146
DLH	PDX	Portland, OR: Portland International	1,746	1,719	2,020	2,718
DLH	EWR	Newark, NJ: Newark Liberty International	1,601	1,652	1,960	2,671
DLH	PHL	Philadelphia, PA: Philadelphia International	1,541	1,590	1,909	2,665
DLH	CLE	Cleveland, OH: Hopkins International	1,481	1,526	1,827	2,535
DLH	BWI	Baltimore, MD: Baltimore/Washington International	1,541	1,555	1,838	2,493
DLH	STL	St. Louis, MO: Lambert International	1,409	1,430	1,702	2,337
DLH	JFK	New York, NY: Kennedy International	1,397	1,441	1,709	2,330
DLH	SAN	San Diego, CA: San Diego International Lindbergh Field	1,481	1,466	1,724	2,323
DLH	PIT	Pittsburgh, PA: Pittsburgh International	1,276	1,331	1,599	2,239
DLH	IFP	Bullhead City, AZ: Laughlin Bullhead International	1,252	1,261	1,513	2,151
DLH	SLC	Salt Lake City, UT: Salt Lake International	1,288	1,281	1,532	2,136
		Percent of Total	66.13%	65.93%	66.00%	66.21%



FORECAST TECHNICAL REPORT

Table C-15: Top 30 Origin Market of Range Regional Airport (Hibbing)

Inbound Passenger to Chisholm / Hibbing Municipal – Range Regional Airport										
Destination	Origin	Origin Name	2010	2015	2020	2030				
HIB	PHX	Phoenix, AZ: Sky Harbor International	670	814	954	1,160				
HIB	LAX	Los Angeles, CA: Los Angeles International	439	556	665	832				
HIB	DEN	Denver, CO: Denver International	473	576	677	829				
HIB	LAS	Las Vegas, NV: McCarran International	404	496	595	760				
HIB	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	358	442	520	633				
HIB	MCO	Orlando, FL: Orlando International	277	343	407	506				
HIB	ORD	Chicago, IL: O Hare	242	303	357	437				
HIB	ATL	Atlanta, GA: Hartsfield-Jackson	242	298	351	430				
HIB	MDW	Chicago, IL: Chicago Midway	219	274	323	395				
HIB	MKE	Milwaukee, WI: General Mitchell Field	208	262	312	387				
HIB	SFO	San Francisco, CA: International	208	256	304	373				
HIB	SAN	San Diego, CA: San Diego International Lindbergh Field	208	256	301	367				
HIB	PHL	Philadelphia, PA: Philadelphia International	185	237	285	359				
HIB	TPA	Tampa, FL: Tampa International	185	229	271	336				
HIB	RSW	Ft. Myers, FL: Southwest Florida International Airport	173	214	258	332				
HIB	BNA	Nashville, TN: Nashville Metropolitan	173	216	256	318				
HIB	PDX	Portland, OR: Portland International	173	212	249	303				
HIB	SEA	Seattle, WA: Seattle/Tacoma International	173	213	250	303				
HIB	DCA	Washington, DC: Washington National	162	201	236	286				
HIB	IAH	Houston, TX: Houston Intercontinental	162	198	232	285				
HIB	LGA	New York, NY: La Guardia	150	193	229	282				
HIB	SMF	Sacramento, CA: Sacramento Metropolitan	162	197	231	281				
HIB	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	150	187	223	278				
HIB	BOS	Boston, MA: Logan International	139	177	210	261				
HIB	MCI	Kansas City, MO: Kansas City International	139	173	204	250				
HIB	GEG	Spokane, WA: Spokane International	139	172	203	247				
HIB	JFK	New York, NY: Kennedy International	127	163	193	238				
HIB	CLE	Cleveland, OH: Hopkins International	115	148	177	222				
HIB	ABQ	Albuquerque, NM: Albuquerque International	115	144	170	210				
HIB	PIT	Pittsburgh, PA: Pittsburgh International	104	135	162	205				
	•	Percent of Total	65.76%	65.52%	65.51%	65.51%				



FORECAST TECHNICAL REPORT

Table C-16: Top 30 Destination Market of Range Regional Airport (Hibbing)

Outbound Passenger from Chisholm / Hibbing Municipal – Range Regional Airport										
Origin	Destination	Destination Name	2010	2015	2020	2030				
HIB	PHX	Phoenix, AZ: Sky Harbor International	703	855	1,003	1,219				
HIB	DEN	Denver, CO: Denver International	485	590	694	850				
HIB	LAX	Los Angeles, CA: Los Angeles International	424	538	644	806				
HIB	LAS	Las Vegas, NV: McCarran International	400	492	590	753				
HIB	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	291	360	423	515				
HIB	MCO	Orlando, FL: Orlando International	255	315	375	465				
HIB	ATL	Atlanta, GA: Hartsfield-Jackson	243	298	351	431				
HIB	ORD	Chicago, IL: O Hare	230	288	340	416				
HIB	SF0	San Francisco, CA: International	218	269	319	393				
HIB	IAH	Houston, TX: Houston Intercontinental	218	267	314	385				
HIB	PDX	Portland, OR: Portland International	218	268	315	383				
HIB	RSW	Ft. Myers, FL: Southwest Florida International Airport	194	240	289	373				
HIB	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	194	242	288	359				
HIB	PHL	Philadelphia, PA: Philadelphia International	182	234	281	354				
HIB	SEA	Seattle, WA: Seattle/Tacoma International	194	239	281	340				
HIB	MKE	Milwaukee, WI: General Mitchell Field	182	229	273	339				
HIB	TPA	Tampa, FL: Tampa International	182	225	267	331				
HIB	SAN	San Diego, CA: San Diego International Lindbergh Field	170	209	246	300				
HIB	BOS	Boston, MA: Logan International	158	201	240	297				
HIB	BNA	Nashville, TN: Nashville Metropolitan	158	197	234	289				
HIB	MDW	Chicago, IL: Chicago Midway	158	197	233	284				
HIB	SMF	Sacramento, CA: Sacramento Metropolitan	158	192	226	274				
HIB	ABQ	Albuquerque, NM: Albuquerque International	146	182	215	265				
HIB	GEG	Spokane, WA: Spokane International	146	181	213	259				
HIB	CLE	Cleveland, OH: Hopkins International	133	171	205	257				
HIB	LGA	New York, NY: La Guardia	133	171	203	251				
HIB	PIT	Pittsburgh, PA: Pittsburgh International	121	157	189	240				
HIB	ANC	Anchorage, AK: Anchorage International	133	168	197	239				
HIB	DCA	Washington, DC: Washington National	133	166	195	236				
HIB	MCI	Kansas City, MO: Kansas City International	121	151	179	219				
	S OD1A Data & HN	Percent of Total	65.83%	65.60%	65.60%	65.61%				



FORECAST TECHNICAL REPORT

Table C-17: Top 30 Origin Market of Falls International Airport

Inbound Passenger to Falls International Airport										
Destination	Origin	Origin Name	2010	2015	2020	2030				
INL	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	779	805	841	1,061				
INL	ORD	Chicago, IL: O Hare	651	680	705	891				
INL	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	523	545	571	729				
INL	ATL	Atlanta, GA: Hartsfield-Jackson	503	516	544	690				
INL	MCO	Orlando, FL: Orlando International	473	490	516	658				
INL	PHX	Phoenix, AZ: Sky Harbor International	454	461	488	617				
INL	DEN	Denver, CO: Denver International	394	401	425	541				
INL	LAS	Las Vegas, NV: McCarran International	365	375	402	521				
INL	IND	Indianapolis, IN: Indianapolis International	335	348	361	457				
INL	IFP	Bullhead City, AZ: Laughlin Bullhead International	306	320	337	440				
INL	PDX	Portland, OR: Portland International	306	313	329	416				
INL	PHL	Philadelphia, PA: Philadelphia International	286	307	315	404				
INL	DTW	Detroit, MI: Detroit Metro Wayne County	286	312	314	401				
INL	IAH	Houston, TX: Houston Intercontinental	286	292	308	393				
INL	LAX	Los Angeles, CA: Los Angeles International	256	272	281	359				
INL	TPA	Tampa, FL: Tampa International	256	266	279	355				
INL	STL	St. Louis, MO: Lambert International	237	250	258	329				
INL	SFO	San Francisco, CA: International	237	244	257	326				
INL	BNA	Nashville, TN: Nashville Metropolitan	227	236	247	315				
INL	CMH	Columbus, OH: Columbus International	217	227	235	297				
INL	DCA	Washington, DC: Washington National	217	226	233	295				
INL	CVG	Covington, KY: Cincinnati/ Northern Kentucky International	207	219	226	288				
INL	MDW	Chicago, IL: Chicago Midway	207	216	224	283				
INL	SEA	Seattle, WA: Seattle/Tacoma International	207	213	223	281				
INL	CLE	Cleveland, OH: Hopkins International	187	201	206	263				
INL	MKE	Milwaukee, WI: General Mitchell Field	187	197	205	261				
INL	LGA	New York, NY: La Guardia	187	201	204	258				
INL	RSW	Ft. Myers, FL: Southwest Florida International Airport	178	183	196	256				
INL	BOS	Boston, MA: Logan International	178	190	194	246				
INL	CLT	Charlotte, NC: Douglas Municipal	168	176	182	233				
_		Percent of Total	66.78%	66.58%	66.80%	66.84%				



FORECAST TECHNICAL REPORT

Table C-18: Top 30 Destination Market of Falls International Airport

Outbound Passenger from Falls International Airport											
Origin	Destination	Destination Name	2010	2015	2020	2030					
INL	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	685	708	739	933					
INL	ORD	Chicago, IL: O Hare	628	656	680	860					
INL	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	533	556	582	744					
INL	ATL	Atlanta, GA: Hartsfield-Jackson	533	547	576	731					
INL	PHX	Phoenix, AZ: Sky Harbor International	523	532	563	712					
INL	MCO	Orlando, FL: Orlando International	485	502	529	675					
INL	DEN	Denver, CO: Denver International	390	397	420	535					
INL	LAS	Las Vegas, NV: McCarran International	352	362	388	503					
INL	IND	Indianapolis, IN: Indianapolis International	343	356	369	467					
INL	DTW	Detroit, MI: Detroit Metro Wayne County	305	332	334	427					
INL	IAH	Houston, TX: Houston Intercontinental	305	311	328	418					
INL	IFP	Bullhead City, AZ: Laughlin Bullhead International	295	309	325	424					
INL	MDW	Chicago, IL: Chicago Midway	276	288	299	378					
INL	PDX	Portland, OR: Portland International	276	283	297	376					
INL	PHL	Philadelphia, PA: Philadelphia International	266	286	293	376					
INL	TPA	Tampa, FL: Tampa International	266	276	290	369					
INL	DCA	Washington, DC: Washington National	238	248	256	323					
INL	LAX	Los Angeles, CA: Los Angeles International	228	242	251	320					
INL	STL	St. Louis, MO: Lambert International	228	241	249	317					
INL	BNA	Nashville, TN: Nashville Metropolitan	228	238	249	317					
INL	SF0	San Francisco, CA: International	228	236	248	314					
INL	CLE	Cleveland, OH: Hopkins International	209	225	230	294					
INL	CVG	Covington, KY: Cincinnati/ Northern Kentucky International	200	211	218	278					
INL	CMH	Columbus, OH: Columbus International	200	209	216	274					
INL	MKE	Milwaukee, WI: General Mitchell Field	190	200	208	265					
INL	LGA	New York, NY: La Guardia	190	204	207	262					
INL	SEA	Seattle, WA: Seattle/Tacoma International	190	196	205	258					
INL	RSW	Ft. Myers, FL: Southwest Florida International Airport	171	177	190	247					
INL	BOS	Boston, MA: Logan International	171	183	187	237					
INL	MCI	Kansas City, MO: Kansas City International	162	169	175	222					
		Percent of Total	66.78%	66.58%	66.79%	66.81%					



FORECAST TECHNICAL REPORT

Table C-19: Top 30 Origin Market of Rochester International Airport

		Inbound Passenger to Rochester International Airport				
Destination	Origin	Origin Name	2010	2015	2020	2030
RST	LAS	Las Vegas, NV: McCarran International	17,683	23,787	28,881	43,318
RST	ORD	Chicago, IL: O Hare	14,504	19,848	23,702	34,061
RST	LGA	New York, NY: La Guardia	4,272	6,010	7,212	10,442
RST	DTW	Detroit, MI: Detroit Metro Wayne County	3,996	5,708	6,911	10,176
RST	DCA	Washington, DC: Washington National	4,228	5,766	6,836	9,752
RST	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	3,554	4,858	5,850	8,569
RST	PHX	Phoenix, AZ: Sky Harbor International	3,135	4,174	4,951	7,071
RST	MCO	Orlando, FL: Orlando International	2,649	3,591	4,316	6,300
RST	ATL	Atlanta, GA: Hartsfield-Jackson	2,605	3,504	4,179	6,018
RST	BOS	Boston, MA: Logan International	2,417	3,382	4,071	5,924
RST	SEA	Seattle, WA: Seattle/Tacoma International	2,042	2,756	3,270	4,657
RST	DEN	Denver, CO: Denver International	1,976	2,634	3,130	4,507
RST	LAX	Los Angeles, CA: Los Angeles International	1,755	2,438	2,949	4,336
RST	SFO	San Francisco, CA: International	1,832	2,476	2,968	4,289
RST	MIA	Miami, FL: Miami International	1,722	2,354	2,835	4,153
RST	PHL	Philadelphia, PA: Philadelphia International	1,556	2,190	2,660	3,943
RST	RDU	Raleigh/Durham, NC: Raleigh Durham	1,534	2,117	2,555	3,755
RST	IAH	Houston, TX: Houston Intercontinental	1,479	1,981	2,356	3,398
RST	STL	St. Louis, MO: Lambert International	1,314	1,818	2,190	3,194
RST	JAX	Jacksonville, FL: Jacksonville International	1,303	1,775	2,133	3,109
RST	IFP	Bullhead City, AZ: Laughlin Bullhead International	1,225	1,682	2,043	3,084
RST	BNA	Nashville, TN: Nashville Metropolitan	1,269	1,733	2,083	3,032
RST	RSW	Ft. Myers, FL: Southwest Florida International Airport	1,137	1,539	1,878	2,841
RST	EWR	Newark, NJ: Newark Liberty International	1,104	1,553	1,864	2,698
RST	AUS	Austin, TX: Austin - Bergstrom International	1,170	1,559	1,850	2,692
RST	TPA	Tampa, FL: Tampa International	1,137	1,543	1,851	2,692
RST	GRR	Grand Rapids, MI: Gerald R. Ford International	1,071	1,490	1,791	2,611
RST	IND	Indianapolis, IN: Indianapolis International	1,126	1,531	1,821	2,605
RST	BWI	Baltimore, MD: Baltimore/Washington International	1,038	1,428	1,707	2,460
RST	SAN	San Diego, CA: San Diego International Lindbergh Field	1,004	1,356	1,613	2,309
Percent of Tota	1		69.69%	69.51%	69.56%	69.71%



FORECAST TECHNICAL REPORT

Table C-20: Top 30 Destination Market of Rochester International Airport

Outbound Passenger from Rochester International Airport							
Origin	Destination	Destination Name	2010	2015	2020	2030	
RST	LAS	Las Vegas, NV: McCarran International	16,116	21,673	26,320	39,494	
RST	ORD	Chicago, IL: O Hare	13,897	19,012	22,709	32,648	
RST	LGA	New York, NY: La Guardia	4,351	6,120	7,345	10,639	
RST	DCA	Washington, DC: Washington National	4,394	5,992	7,105	10,140	
RST	DTW	Detroit, MI: Detroit Metro Wayne County	3,691	5,271	6,383	9,402	
RST	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	3,593	4,910	5,914	8,666	
RST	PHX	Phoenix, AZ: Sky Harbor International	3,063	4,077	4,837	6,912	
RST	ATL	Atlanta, GA: Hartsfield-Jackson	2,868	3,858	4,601	6,629	
RST	MCO	Orlando, FL: Orlando International	2,717	3,681	4,425	6,463	
RST	BOS	Boston, MA: Logan International	2,392	3,345	4,028	5,864	
RST	DEN	Denver, CO: Denver International	2,100	2,798	3,326	4,792	
RST	SEA	Seattle, WA: Seattle/Tacoma International	2,046	2,760	3,275	4,667	
RST	SF0	San Francisco, CA: International	1,883	2,544	3,050	4,410	
RST	MIA	Miami, FL: Miami International	1,808	2,470	2,976	4,361	
RST	PHL	Philadelphia, PA: Philadelphia International	1,710	2,405	2,922	4,334	
RST	LAX	Los Angeles, CA: Los Angeles International	1,753	2,435	2,946	4,334	
RST	RDU	Raleigh/Durham, NC: Raleigh Durham	1,472	2,030	2,451	3,604	
RST	IAH	Houston, TX: Houston Intercontinental	1,548	2,072	2,465	3,557	
RST	STL	St. Louis, MO: Lambert International	1,385	1,917	2,309	3,370	
RST	BNA	Nashville, TN: Nashville Metropolitan	1,299	1,773	2,131	3,103	
RST	IFP	Bullhead City, AZ: Laughlin Bullhead International	1,201	1,649	2,003	3,025	
RST	JAX	Jacksonville, FL: Jacksonville International	1,256	1,711	2,056	2,998	
RST	EWR	Newark, NJ: Newark Liberty International	1,147	1,614	1,937	2,805	
RST	TPA	Tampa, FL: Tampa International	1,180	1,601	1,921	2,794	
RST	AUS	Austin, TX: Austin - Bergstrom International	1,212	1,615	1,916	2,790	
RST	JFK	New York, NY: Kennedy International	1,126	1,583	1,900	2,752	
RST	RSW	Ft. Myers, FL: Southwest Florida International Airport	1,093	1,480	1,805	2,733	
RST	IND	Indianapolis, IN: Indianapolis International	1,169	1,589	1,890	2,705	
RST	GRR	Grand Rapids, MI: Gerald R. Ford International	1,072	1,491	1,792	2,614	
RST	BWI	Baltimore, MD: Baltimore/Washington International	1,028	1,415	1,691	2,439	
		Percent of Total	68.68%	68.52%	68.57%	68.72%	



FORECAST TECHNICAL REPORT

Table C-21: Top 30 Origin Market of Thief River Falls Airport

Inbound Passenger to Thief River Falls Airport								
Destination	Origin	Origin Name	n Name 2010 2015 2020		2030			
TVF	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	324	355	363	539		
TVF	ORD	Chicago, IL: O Hare	124	137	141	210		
TVF	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	114	127	131	199		
TVF	PHX	Phoenix, AZ: Sky Harbor International	114	123	126	186		
TVF	LAS	Las Vegas, NV: McCarran International	95	104	108	169		
TVF	DTW	Detroit, MI: Detroit Metro Wayne County	86	99	103	158		
TVF	MDW	Chicago, IL: Chicago Midway	76	85	87	129		
TVF	CLE	Cleveland, OH: Hopkins International	67	76	79	121		
TVF	ATL	Atlanta, GA: Hartsfield-Jackson	67	73	74	111		
TVF	RSW	Ft. Myers, FL: Southwest Florida International Airport	57	63	66	103		
TVF	LAX	Los Angeles, CA: Los Angeles International	57	64	67	102		
TVF	BOS	Boston, MA: Logan International	57	65	67	101		
TVF	MKE	Milwaukee, WI: General Mitchell Field	57	64	66	100		
TVF	CLT	Charlotte, NC: Douglas Municipal	57	64	65	99		
TVF	TPA	Tampa, FL: Tampa International	57	63	65	98		
TVF	SEA	Seattle, WA: Seattle/Tacoma International	57	63	64	94		
TVF	RDU	Raleigh/Durham, NC: Raleigh Durham	48	53	55	84		
TVF	MCO	Orlando, FL: Orlando International	48	52	54	82		
TVF	STL	St. Louis, MO: Lambert International	38	43	44	67		
TVF	MCI	Kansas City, MO: Kansas City International	38	42	43	65		
TVF	RIC	Richmond, VA: Richard Elelyn Byrd International	38	42	42	63		
TVF	PIT	Pittsburgh, PA: Pittsburgh International	29	33	34	53		
TVF	PHL	Philadelphia, PA: Philadelphia International	29	33	34	52		
TVF	LGA	New York, NY: La Guardia	29	33	34	50		
TVF	GRR	Grand Rapids, MI: Gerald R. Ford International	29	32	33	50		
TVF	HNL	Honolulu, HI: Honolulu International	29	32	33	50		
TVF	FLL	Fort Lauderdale, FL: Fort Lauderdale International	29	32	33	50		
TVF	MIA	Miami, FL: Miami International	29	32	33	50		
TVF	SJC	San Jose, CA: San Jose International	29	32	33	49		
TVF	BWI	Baltimore, MD: Baltimore/Washington International	29	32	33	49		
		Percent of Total	73.82%	73.85%	73.91%	74.02%		
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FORECAST TECHNICAL REPORT

Table C-22: Top 30 Destination Market of Thief River Falls Airport

Outbound Passenger from Thief River Falls Airport								
Origin	Destination	Destination Name	2010	2015	2020	2030		
TVF	MSP	Minneapolis/St. Paul, MN: Minneapolis St Paul International	303	332	340	504		
TVF	DFW	Dallas/Ft. Worth, TX: Dallas/Ft Worth International	129	142	147	224		
TVF	ORD	Chicago, IL: O Hare	110	122	125	187		
TVF	DTW	Detroit, MI: Detroit Metro Wayne County	101	117	122	186		
TVF	PHX	Phoenix, AZ: Sky Harbor International	110	119	121	180		
TVF	CLE	Cleveland, OH: Hopkins International	74	84	87	133		
TVF	LAS	Las Vegas, NV: McCarran International	74	80	84	130		
TVF	MDW	Chicago, IL: Chicago Midway	74	81	84	125		
TVF	LAX	Los Angeles, CA: Los Angeles International	64	72	75	115		
TVF	MKE	Milwaukee, WI: General Mitchell Field	64	72	74	113		
TVF	CLT	Charlotte, NC: Douglas Municipal	64	71	74	112		
TVF	TPA	Tampa, FL: Tampa International	64	71	73	110		
TVF	RSW	Ft. Myers, FL: Southwest Florida International Airport	55	60	63	100		
TVF	ATL	Atlanta, GA: Hartsfield-Jackson	55	60	62	92		
TVF	BOS	Boston, MA: Logan International	46	52	54	81		
TVF	RDU	Raleigh/Durham, NC: Raleigh Durham	46	51	53	81		
TVF	MIA	Miami, FL: Miami International	46	51	53	80		
TVF	MCO	Orlando, FL: Orlando International	46	50	52	79		
TVF	SEA	Seattle, WA: Seattle/Tacoma International	46	50	51	76		
TVF	STL	St. Louis, MO: Lambert International	37	41	43	65		
TVF	FLL	Fort Lauderdale, FL: Fort Lauderdale International	37	41	42	64		
TVF	RIC	Richmond, VA: Richard Elelyn Byrd International	37	40	41	61		
TVF	PDX	Portland, OR: Portland International	37	40	41	61		
TVF	PHL	Philadelphia, PA: Philadelphia International	28	31	33	50		
TVF	GRR	Grand Rapids, MI: Gerald R. Ford International	28	31	32	49		
TVF	BWI	Baltimore, MD: Baltimore/Washington International	28	31	32	47		
TVF	SF0	San Francisco, CA: International	28	30	31	47		
TVF	DCA	Washington, DC: Washington National	28	30	31	46		
TVF	IAD	Washington, DC: Dulles International	28	30	31	46		
TVF	AUS	Austin, TX: Austin - Bergstrom International	28	30	30	46		
	DTC OD1A Data	Percent of Total	72.98%	72.86%	72.88%	72.94%		



FORECAST TECHNICAL REPORT

Table C-23: 2015 GA Fleet Forecast

2015 GA and Military Fleet Forecast								
Airport Name		SEP	JET	MEP	TP	LSA	MIL	OTH
Crystal Airport	MIC	214	4	14	1	1	-	9
Airlake Airport		139	-	10	1	2	-	3
Lake Elmo Airport	21D	220	-	11	-	9	-	5
St. Paul Downtown Airport - Holman Field	STP	22	65	7	9	2	-	8
Anoka County/Blaine Airport - Janes Field	ANE	342	24	47	7	8	-	11
Flying Cloud Airport	FCM	297	40	31	19	4	-	7
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	30	-	-	-	-	-
Hawley Municipal Airport	04Y	28	-	1	-	3	-	2
Henning Municipal Airport	05Y	12	-	-	-	-	-	2
Herman Municipal Airport	06Y	4	-	-	-	-	-	-
Hill City-Quadna Mountain Airport	07Y	2	-	-	-	-	-	
Winsted Municipal Airport	10D	35	-	1	-	-	-	13
Tower Municipal Airport	12D	40	1	3	-	1	-	3
Le Sueur Municipal Airport	12Y	23	-	1	-	3	-	51
Littlefork Municipal Airport - Hanover Airport	13Y	2	-	-	-	1	-	-
Long Prairie Municipal Airport - Todd Field	14Y	16	-	1	-	1	-	-
Perham Municipal Airport	16D	12	1	-	1	-	-	1
Milaca Municipal Airport	18Y	31	-	-	-	-	-	-
Hector Municipal Airport	1D6	36	-	-	-	1	-	4
Karlstad Municipal Airport	23D	-	-	-	-	-	-	
Murdock Municipal Airport	23Y	-	-	-	-	-	-	-
Forest Lake Airport	25D	34	-	1	-	1	-	1
Grygla Municipal Airport - Mel Wilkens Field	3G2	2	-	-	-	-	-	-
Mahnomen County Airport	3N8	21	-	-	-	-	-	-
Northome Municipal Airport	43Y	1	-	-	-	-	-	-
Pelican Rapids Municipal Airport - Lyon's Field	47Y	17	-	-	-	-	-	-
Piney-Pinecreek Border Airport	48Y	-	-	-	-	-	-	-
Remer Municipal Airport	52Y	3	-	-	-	-	-	1
Rushford Municipal Airport	55Y	9	-	-	-	3	-	-
Tyler Municipal Airport	63Y	6	-	-	-	-	-	-
Wells Municipal Airport	68Y	8	-	-	-	-	-	-
Brooten Municipal Airport	6D1	6	-	-	-	-	-	2
Backus Municipal Airport	7Y3	8	-	1	-	-	-	



FORECAST TECHNICAL REPORT

2015 GA and Military Fleet Forecast								
Airport Name		SEP	JET	MEP	TP	LSA	MIL	OTH
Bagley Municipal Airport	7Y4	6	-	-	-	-	-	-
Big Falls Municipal Airport		2	-	-	-	-	-	1
Clarissa Municipal Airport	8Y5	1	-	-	-	-	-	-
Bowstring Airport	9Y0	8	-	-	-	-	-	-
East Gull Lake Airport	9Y2	2	-	-	-	-	-	-
Waseca Municipal Airport	ACQ	25	-	-	-	-	-	-
Wadena Municipal Airport	ADC	10	-	-	-	-	-	-
Albert Lea Municipal Airport	AEL	35	2	3	-	-	-	8
Aitkin Municipal Airport - Steve Kurtz Field	AIT	39	-	2	2	1	-	-
Appleton Municipal Airport	AQP	7	-	-	4	-	-	-
Austin Municipal Airport	AUM	28	2	1	1	-	-	-
Alexandria Municipal Airport - Chandler Field	AXN	52	-	2	2	-	-	-
Benson Municipal Airport - Veterans Field	BBB	14	-	4	2	-	-	1
Baudette International Airport	BDE	14	-	1	-	1	-	-
Willmar Municipal Airport - John L. Rice Field	BDH	44	1	3	-	-	-	-
Silver Bay Municipal Airport - Wayne Johnson	BFW	4	-	-	-	-	-	2
Bemidji Regional Airport	BJI	22	-	26	13	-	-	1
Brainerd Lakes Regional Airport	BRD	74	1	7	2	5	-	9
Cambridge Municipal Airport	CBG	44	-	1	-	6	-	2
Buffalo Municipal Airport	CFE	69	-	2	-	3	-	-
Houston County Airport	CHU	14	-	1	-	-	-	-
Grand Marais-Cook County Airport	CKC	15	-	-	-	2	-	-
Crookston Municipal Airport - Kirkwood Field	CKN	51	-	-	3	-	-	-
Canby Municipal Airport - Myers Field	CNB	22	-	6	-	-	-	-
Cloquet-Carlton County Airport	COQ	44	-	-	1	1	-	-
Cook Municipal Airport	CQM	19	-	-	1	-	-	1
Norman County/Ada/Twin Valley Airport	D00	7	-	-	-	-	-	-
Fertile Municipal Airport	D14	3	-	-	-	-	-	-
Starbuck Municipal Airport	D32	3	-	-	-	-	-	-
Warren Municipal Airport	D37	6	-	-	2	-	-	-
Sauk Centre Municipal Airport	D39	13	-	1	_	-	-	2
Stephen Municipal Airport	D41	7	-	-	1	-	-	1
Springfield Municipal Airport	D42	3	-	-	-	1	-	-
Red Lake Falls Municipal Airport	D81	7	-	-	-	-	-	-
Duluth International Airport	DLH	53	2	11	-	1	23	1



2015 GA and Military Fleet Forecast												
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH				
Detroit Lakes Municipal Airport - Wething Field	DTL	27	2	-	5	-	-	2				
Slayton Municipal Airport	DVP	4	-	-	-	-	-	1				
Lac Qui Parle County Airport - Bud Frye Field	DXX	8	-	-	-	-	-	2				
Duluth Sky Harbor Airport	DYT	30	-	3	-	-	-	-				
Ely Municipal Airport	ELO	21	-	2	-	1	-	-				
Wheaton Municipal Airport	ETH	4	-	-	-	-	-	-				
Eveleth-Virginia Municipal Airport	EVM	37	-	1	1	1	-	1				
Faribault Municipal Airport	FBL	70	-	7	-	1	-	9				
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	49	-	1	1	3	-	-				
Preston - Fillmore County Airport	FKA	24	-	-	-	1	-	2				
Bigfork Municipal Airport	FOZ	4	-	-	-	-	-	-				
Fairmont Municipal Airport	FRM	29	2	2	-	-	-	-				
Fosston Municipal Airport	FSE	10	-	1	-	-	-	1				
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	14	2	2	-	-	-	-				
Glenwood Municipal Airport	GHW	12	-	-	-	-	-	-				
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	80	1	3	-	3	-	-				
Glencoe Municipal Airport - Vernon Perschau Field	GYL	32	-	1	-	-	-	5				
Hutchinson Municipal Airport - Butler Field	HCD	40	-	3	1	3	-	2				
Hallock Municipal Airport	HCO	11	-	-	2	-	-	-				
Range Regional Airport	HIB	46	-	2	-	1	-	6				
McGregor - Isedor Iverson Airport	HZX	14	-	-	-	-	-	1				
Falls International Airport	INL	27	-	-	-	10	-	-				
Moorhead Municipal Airport	JKJ	36	-	5	-	-	-	1				
Mora Municipal Airport	JMR	28	-	-	-	5	-	1				
St. James Municipal Airport	JYG	12	-	-	-	1	-	-				
Litchfield Municipal Airport	LJF	28	-	1	-	-	-	2				
Little Falls-Morrison County Airport	LXL	31	-	1	-	-	-	-				
Luverne Municipal Airport - Quentin Aanenson Field	LYV	19	-	-	-	-	-	1				
Maple Lake Municipal Airport	MGG	49	-	5	-	-	-	-				
Jackson Municipal Airport	MJQ	21	-	-	-	-	-	1				
Mankato Regional Airport - Sohler Field	MKT	59	3	9	3	3	-	5				
Southwest Minnesota Regional-Marshall/Ryan Field	MML	20	5	3	5	-	-	1				
Morris Municipal Airport - Charlie Schmidt Field	MOX	12	-	4	2	1	-	1				
Montevideo-Chippewa County Airport	MVE	23	-	1	-	-	-	2				
Windom Municipal Airport	MWM	17	-	1	_	-	-	-				



FORECAST TECHNICAL REPORT

2015 GA and Military Fleet Forecast												
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH				
Moose Lake-Carlton County Airport	MZH	11	-	-	-	-	-	3				
Winona Municipal Airport - Max Conrad Field	ONA	34	2	5	1	1	-	2				
Orr Regional Airport	ORB	8	-	-	-	-	-	-				
Worthington Municipal Airport	OTG	23	-	3	-	-	-	-				
Olivia Regional Airport	OVL	8	-	-	-	-	-	5				
Owatonna Degner Regional Airport	OWA	52	-	2	-	-	-	2				
Paynesville Municipal Airport	PEX	24	-	1	-	-	-	1				
Park Rapids Municipal Airport - Konshok Field	PKD	28	-	3	-	-	-	-				
Princeton Municipal Airport	PNM	50	-	2	-	2	-	-				
Pipestone Municipal Airport	PQN	18	-	1	-	-	-	-				
Pine River Regional Airport	PWC	44	1	2	1	-	-	2				
Red Wing Regional Airport	RGK	60	5	3	1	-	-	-				
Rush City Regional Airport	ROS	63	-	1	-	2	-	1				
Roseau Municipal Airport - Rudy Billberg Field	ROX	17	-	-	-	-	-	2				
Warroad International Memorial Airport	RRT	17	1	1	3	-	-	1				
Rochester International Airport	RST	65	3	3	-	2	-	1				
Redwood Falls Municipal Airport	RWF	12	-	3	-	1	-	3				
Staples Municipal Airport	SAZ	19	-	1	-	-	-	2				
Blue Earth Municipal Airport	SBU	27	-	-	2	1	-	-				
South St. Paul Municipal Airport - Fleming Field	SGS	241	-	11	13	4	-	6				
St. Cloud Regional Airport	STC	92	9	6	-	-	14	-				
Tracy Municipal Airport	TKC	7	-	-	-	-	-	-				
Dodge Center Municipal Airport	TOB	44	-	-	-	2	-	4				
Thief River Falls Regional Airport	TVF	23	3	1	1	-	-	1				
Two Harbors Municipal - Richard B. Helgeson Field	TWM	38	-	1	-	1	-	6				
New Ulm Municipal Airport	ULM	21	-	4	1	-	-	-				
Ortonville Municipal Airport - Martinson Field	VVV	3	-	-	-	-	-	-				
Waskish Municipal Airport	VWU	1	-	-	-	-	-	-				
Longville Municipal Airport	XVG	18	-	1	-	-	-	-				
Walker Municipal Airport	Y49	26	-	2	-	6	-	-				
Sleepy Eye Municipal Airport	Y58	6	-	-	1	1	-	3				
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	18	-	-	-	-	-	1				



Table C-24: 2020 GA Fleet Forecast

2020 GA and Military Fleet Forecast												
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH				
Crystal Airport	MIC	212	6	15	1	1	-	10				
Airlake Airport	LVN	141	-	10	1	2	-	3				
Lake Elmo Airport	21D	224	-	12	-	11	-	6				
St. Paul Downtown Airport - Holman Field	STP	21	77	7	9	2	-	9				
Anoka County/Blaine Airport - Janes Field	ANE	323	29	42	7	9	-	12				
Flying Cloud Airport	FCM	284	51	28	19	4	-	8				
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	30	-	-	-	-	-				
Hawley Municipal Airport	04Y	29	-	1	-	3	-	2				
Henning Municipal Airport	05Y	12	-	-	-	-	-	2				
Herman Municipal Airport	06Y	4	-	-	-	-	-	-				
Hill City-Quadna Mountain Airport	07Y	2	-	-	-	-	-	-				
Winsted Municipal Airport	10D	38	-	1	-	-	-	14				
Tower Municipal Airport	12D	40	1	3	-	2	-	3				
Le Sueur Municipal Airport	12Y	24	-	1	-	3	-	53				
Littlefork Municipal Airport - Hanover Airport	13Y	2	-	-	-	2	-	-				
Long Prairie Municipal Airport - Todd Field	14Y	16	-	1	-	2	-	-				
Perham Municipal Airport	16D	12	1	-	1	-	-	1				
Milaca Municipal Airport	18Y	32	-	-	-	-	-	-				
Hector Municipal Airport	1D6	36	-	-	-	2	-	4				
Karlstad Municipal Airport	23D	-	-	-	-	-	-	-				
Murdock Municipal Airport	23Y	-	-	-	-	-	-	-				
Forest Lake Airport	25D	37	-	1	-	2	-	1				
Grygla Municipal Airport - Mel Wilkens Field	3G2	2	-	-	-	-	-	-				
Mahnomen County Airport	3N8	22	-	-	-	-	-	-				
Northome Municipal Airport	43Y	1	-	-	-	-	-	-				
Pelican Rapids Municipal Airport - Lyon's Field	47Y	18	-	-	-	-	-	-				
Piney-Pinecreek Border Airport	48Y	-	-	-	-	-	-	-				
Remer Municipal Airport	52Y	4	-	-	-	-	-	1				
Rushford Municipal Airport	55Y	9	-	-	-	3	-	-				
Tyler Municipal Airport	63Y	6	-	-	-	-	-	-				
Wells Municipal Airport	68Y	8	-	-	-	-	-	-				
Brooten Municipal Airport	6D1	6	-	-	-	-	-	2				
Backus Municipal Airport	7Y3	9	-	1	-	-	-	-				



2020 GA a	nd Military F	Fleet Fore	ecast					
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН
Bagley Municipal Airport	7Y4	6	-	-	-	-	-	-
Big Falls Municipal Airport	7Y9	2	-	-	-	-	-	1
Clarissa Municipal Airport	8Y5	1	-	-	-	-	-	-
Bowstring Airport	9Y0	8	-	-	-	-	-	-
East Gull Lake Airport	9Y2	3	-	-	-	-	-	-
Waseca Municipal Airport	ACQ	26	-	-	-	-	-	-
Wadena Municipal Airport	ADC	10	-	-	-	-	-	-
Albert Lea Municipal Airport	AEL	35	2	3	-	-	-	8
Aitkin Municipal Airport - Steve Kurtz Field	AIT	42	-	2	2	2	-	-
Appleton Municipal Airport	AQP	7	-	-	5	-	-	-
Austin Municipal Airport	AUM	29	2	1	1	-	-	-
Alexandria Municipal Airport - Chandler Field	AXN	55	-	2	2	-	-	-
Benson Municipal Airport - Veterans Field	BBB	15	-	5	2	-	-	1
Baudette International Airport	BDE	15	-	1	-	2	-	-
Willmar Municipal Airport - John L. Rice Field	BDH	46	1	4	-	-	-	-
Silver Bay Municipal Airport - Wayne Johnson	BFW	5	-	-	-	-	-	2
Bemidji Regional Airport	BJI	24	-	28	15	-	-	1
Brainerd Lakes Regional Airport	BRD	81	1	8	3	6	-	10
Cambridge Municipal Airport	CBG	48	-	1	-	7	-	2
Buffalo Municipal Airport	CFE	75	-	3	-	4	-	-
Houston County Airport	CHU	14	-	1	-	-	-	-
Grand Marais-Cook County Airport	CKC	16	-	-	-	2	-	-
Crookston Municipal Airport - Kirkwood Field	CKN	53	-	-	3	-	-	-
Canby Municipal Airport - Myers Field	CNB	23	-	6	-	-	-	-
Cloquet-Carlton County Airport	COQ	45	-	-	1	2	-	-
Cook Municipal Airport	CQM	19	-	-	1	-	-	1
Norman County/Ada/Twin Valley Airport	D00	7	-	-	-	-	-	-
Fertile Municipal Airport	D14	3	-	-	-	-	-	-
Starbuck Municipal Airport	D32	3	-	-	-	-	-	-
Warren Municipal Airport	D37	6	-	-	2	-	-	-
Sauk Centre Municipal Airport	D39	14	-	1	-	-	-	2
Stephen Municipal Airport	D41	7	-	-	1	-	-	1
Springfield Municipal Airport	D42	3	-	-	-	2	-	-
Red Lake Falls Municipal Airport	D81	7	-	-	-	-	-	-
Duluth International Airport	DLH	54	2	12	-	2	24	1



2020 GA a	nd Military F	Tleet Fore	ecast					
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH
Detroit Lakes Municipal Airport - Wething Field	DTL	29	2	-	5	-	-	2
Slayton Municipal Airport	DVP	4	-	-	-	-	-	1
Lac Qui Parle County Airport - Bud Frye Field	DXX	8	-	-	-	-	-	2
Duluth Sky Harbor Airport	DYT	31	-	3	-	-	-	-
Ely Municipal Airport	ELO	21	-	2	-	2	-	-
Wheaton Municipal Airport	ETH	4	-	-	-	-	-	-
Eveleth-Virginia Municipal Airport	EVM	38	-	1	1	2	-	1
Faribault Municipal Airport	FBL	72	-	7	-	2	-	10
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	51	-	1	1	3	-	-
Preston - Fillmore County Airport	FKA	25	-	-	-	2	-	2
Bigfork Municipal Airport	FOZ	5	-	-	-	-	-	-
Fairmont Municipal Airport	FRM	29	2	2	-	-	-	-
Fosston Municipal Airport	FSE	10	-	1	-	-	-	1
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	15	2	2	-	-	-	-
Glenwood Municipal Airport	GHW	13	-	-	-	-	-	-
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	84	1	3	-	3	-	-
Glencoe Municipal Airport - Vernon Perschau Field	GYL	34	-	1	-	-	-	6
Hutchinson Municipal Airport - Butler Field	HCD	42	-	3	1	3	-	2
Hallock Municipal Airport	HCO	11	-	-	2	-	-	-
Range Regional Airport	HIB	47	-	2	-	2	-	6
McGregor - Isedor Iverson Airport	HZX	15	-	-	-	-	-	1
Falls International Airport	INL	28	-	-	-	11	-	-
Moorhead Municipal Airport	JKJ	37	-	6	-	-	-	-
Mora Municipal Airport	JMR	30	-	-	-	5	-	1
St. James Municipal Airport	JYG	12	-	-	-	2	-	-
Litchfield Municipal Airport	LJF	30	-	1	-	-	-	2
Little Falls-Morrison County Airport	LXL	32	-	1	-	-	-	-
Luverne Municipal Airport - Quentin Aanenson Field	LYV	19	-	-	-	-	-	1
Maple Lake Municipal Airport	MGG	54	-	5	-	-	-	-
Jackson Municipal Airport	MJQ	22	-	-	-	-	-	1
Mankato Regional Airport - Sohler Field	MKT	62	3	9	4	3	-	6
Southwest Minnesota Regional-Marshall/Ryan Field	MML	21	5	3	6	-	-	1
Morris Municipal Airport - Charlie Schmidt Field	MOX	12	-	4	2	2	-	1
Montevideo-Chippewa County Airport	MVE	24	-	1	-	-	-	2
Windom Municipal Airport	MWM	17	-	1	-	-	-	-



FORECAST TECHNICAL REPORT

2020 GA a	ınd Military F	leet Fore	ecast					
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH
Moose Lake-Carlton County Airport	MZH	11	-	-	-	-	-	3
Winona Municipal Airport - Max Conrad Field	ONA	35	2	6	1	2	-	2
Orr Regional Airport	ORB	8	-	-	-	-	-	-
Worthington Municipal Airport	OTG	25	-	4	-	-	-	-
Olivia Regional Airport	OVL	8	-	-	-	-	-	5
Owatonna Degner Regional Airport	OWA	56	-	2	-	-	-	2
Paynesville Municipal Airport	PEX	26	-	1	-	-	-	1
Park Rapids Municipal Airport - Konshok Field	PKD	30	-	3	-	-	-	-
Princeton Municipal Airport	PNM	54	-	2	-	2	-	-
Pipestone Municipal Airport	PQN	19	-	1	-	-	-	-
Pine River Regional Airport	PWC	48	1	3	1	-	-	2
Red Wing Regional Airport	RGK	62	5	3	1	-	-	-
Rush City Regional Airport	ROS	68	-	1	-	2	-	1
Roseau Municipal Airport - Rudy Billberg Field	ROX	17	-	-	-	-	-	2
Warroad International Memorial Airport	RRT	17	1	1	3	-	-	1
Rochester International Airport	RST	71	4	4	-	2	-	1
Redwood Falls Municipal Airport	RWF	12	-	3	-	2	-	3
Staples Municipal Airport	SAZ	19	-	1	-	-	-	2
Blue Earth Municipal Airport	SBU	27	-	-	2	2	-	-
South St. Paul Municipal Airport - Fleming Field	SGS	264	-	12	15	5	-	7
St. Cloud Regional Airport	STC	99	9	6	-	-	15	-
Tracy Municipal Airport	TKC	8	-	-	-	-	-	-
Dodge Center Municipal Airport	TOB	47	-	-	-	2	-	5
Thief River Falls Regional Airport	TVF	23	3	1	1	-	-	1
Two Harbors Municipal - Richard B. Helgeson Field	TWM	40	-	1	-	2	-	6
New Ulm Municipal Airport	ULM	22	-	4	1	-	-	-
Ortonville Municipal Airport - Martinson Field	VVV	3	-	-	-	-	-	-
Waskish Municipal Airport	VWU	1	-	-	-	-	-	-
Longville Municipal Airport	XVG	19	-	1	-	-	-	-
Walker Municipal Airport	Y49	28	-	3	-	7	-	-
Sleepy Eye Municipal Airport	Y58	7	-	-	1	2	-	3
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	19	-	-	-	-	-	1



FORECAST TECHNICAL REPORT

Table C-25: 2030 GA Fleet Forecast

GA Fleet a	and Military	Forecast						
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН
Crystal Airport	MIC	209	11	16	1	1	-	12
Airlake Airport	LVN	142	1	10	1	3	-	3
Lake Elmo Airport	21D	229	-	13	-	14	-	6
St. Paul Downtown Airport - Holman Field	STP	19	88	7	9	2	-	9
Anoka County/Blaine Airport - Janes Field	ANE	291	39	30	7	11	-	12
Flying Cloud Airport	FCM	265	66	24	19	6	-	8
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	30	-	-	-	-	-
Hawley Municipal Airport	04Y	30	-	1	-	4	-	2
Henning Municipal Airport	05Y	13	-	-	-	-	-	2
Herman Municipal Airport	06Y	4	-	-	-	-	-	-
Hill City-Quadna Mountain Airport	07Y	3	-	-	-	-	-	-
Winsted Municipal Airport	10D	44	-	1	-	-	-	15
Tower Municipal Airport	12D	41	1	3	-	2	-	3
Le Sueur Municipal Airport	12Y	27	-	1	-	5	-	58
Littlefork Municipal Airport - Hanover Airport	13Y	2	-	-	-	2	-	-
Long Prairie Municipal Airport - Todd Field	14Y	17	-	1	-	2	-	-
Perham Municipal Airport	16D	14	1	-	1	-	-	1
Milaca Municipal Airport	18Y	36	-	-	-	-	-	-
Hector Municipal Airport	1D6	37	-	-	-	2	-	4
Karlstad Municipal Airport	23D	-	-	-	-	-	-	-
Murdock Municipal Airport	23Y	-	-	-	-	-	-	-
Forest Lake Airport	25D	43	-	1	-	2	-	1
Grygla Municipal Airport - Mel Wilkens Field	3G2	2	-	-	-	-	-	-
Mahnomen County Airport	3N8	23	-	-	-	-	1	-
Northome Municipal Airport	43Y	1	-	-	-	-	-	-
Pelican Rapids Municipal Airport - Lyon's Field	47Y	19	-	-	-	-	-	-
Piney-Pinecreek Border Airport	48Y	_	-	-	-	-	-	-
Remer Municipal Airport	52Y	5	-	-	-	-	-	1
Rushford Municipal Airport	55Y	9	-	-	-	4	-	-
Tyler Municipal Airport	63Y	6	-	-	-	-	-	-
Wells Municipal Airport	68Y	8	-	-	-	-	-	-
Brooten Municipal Airport	6D1	7	-	-	-	-	-	2
Backus Municipal Airport	7Y3	11	-	2	-	-	-	-



GA Fleet	and Military	Forecast						
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH
Bagley Municipal Airport	7Y4	6	-	-	-	-	-	-
Big Falls Municipal Airport	7Y9	2	-	-	-	-	-	1
Clarissa Municipal Airport	8Y5	1	-	-	-	-	-	-
Bowstring Airport	9Y0	9	-	-	-	-	-	-
East Gull Lake Airport	9Y2	3	-	-	-	-	-	-
Waseca Municipal Airport	ACQ	28	-	-	-	-	-	-
Wadena Municipal Airport	ADC	11	-	-	-	-	-	-
Albert Lea Municipal Airport	AEL	37	2	3	-	-	-	8
Aitkin Municipal Airport - Steve Kurtz Field	AIT	47	-	3	3	2	-	-
Appleton Municipal Airport	AQP	7	-	-	5	-	-	-
Austin Municipal Airport	AUM	31	2	1	1	-	-	-
Alexandria Municipal Airport - Chandler Field	AXN	64	-	3	3	-	-	-
Benson Municipal Airport - Veterans Field	BBB	16	-	5	2	-	-	1
Baudette International Airport	BDE	16	-	1	-	2	-	-
Willmar Municipal Airport - John L. Rice Field	BDH	52	1	4	-	-	-	-
Silver Bay Municipal Airport - Wayne Johnson	BFW	5	-	-	-	-	-	2
Bemidji Regional Airport	BJI	27	-	32	17	-	-	1
Brainerd Lakes Regional Airport	BRD	98	1	9	3	8	-	11
Cambridge Municipal Airport	CBG	57	-	2	-	11	-	3
Buffalo Municipal Airport	CFE	89	-	3	-	5	-	-
Houston County Airport	CHU	15	-	1	-	-	-	-
Grand Marais-Cook County Airport	CKC	18	-	-	-	2	-	-
Crookston Municipal Airport - Kirkwood Field	CKN	56	-	-	4	-	-	-
Canby Municipal Airport - Myers Field	CNB	24	-	6	-	-	-	-
Cloquet-Carlton County Airport	COQ	48	-	-	1	2	-	-
Cook Municipal Airport	CQM	20	-	-	1	-	-	1
Norman County/Ada/Twin Valley Airport	D00	7	-	1	-	-	-	-
Fertile Municipal Airport	D14	3	-	1	-	-	-	-
Starbuck Municipal Airport	D32	4	-	-	-	-	-	-
Warren Municipal Airport	D37	6	-	-	2	-	-	-
Sauk Centre Municipal Airport	D39	16	-	1	-	-	-	3
Stephen Municipal Airport	D41	7	-	-	1	-	-	1
Springfield Municipal Airport	D42	3	-	-	-	2	-	-
Red Lake Falls Municipal Airport	D81	7	-	-	-	-	-	-
Duluth International Airport	DLH	55	2	12	-	2	25	1



GA Fleet	and Military	Forecast						
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH
Detroit Lakes Municipal Airport - Wething Field	DTL	32	2	-	6	-	-	2
Slayton Municipal Airport	DVP	4	-	-	-	-	-	1
Lac Qui Parle County Airport - Bud Frye Field	DXX	8	-	-	-	-	-	2
Duluth Sky Harbor Airport	DYT	32	-	3	-	-	-	-
Ely Municipal Airport	ELO	22	-	2	-	2	-	-
Wheaton Municipal Airport	ETH	4	-	-	-	-	-	-
Eveleth-Virginia Municipal Airport	EVM	39	-	1	1	2	-	1
Faribault Municipal Airport	FBL	78	-	8	-	2	-	10
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	55	-	1	1	4	-	-
Preston - Fillmore County Airport	FKA	26	-	-	-	2	-	2
Bigfork Municipal Airport	FOZ	5	-	-	-	-	-	-
Fairmont Municipal Airport	FRM	30	2	2	-	-	-	-
Fosston Municipal Airport	FSE	11	-	1	-	-	-	1
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	15	2	2	-	-	-	-
Glenwood Municipal Airport	GHW	14	-	-	-	-	-	-
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	92	1	4	-	4	-	-
Glencoe Municipal Airport - Vernon Perschau Field	GYL	38	-	1	-	-	-	6
Hutchinson Municipal Airport - Butler Field	HCD	46	-	4	1	4	-	2
Hallock Municipal Airport	HCO	11	-	-	2	-	-	-
Range Regional Airport	HIB	49	-	2	-	2	-	6
McGregor - Isedor Iverson Airport	HZX	17	-	-	-	-	-	1
Falls International Airport	INL	29	-	-	-	14	-	-
Moorhead Municipal Airport	JKJ	40	-	6	-	-	-	-
Mora Municipal Airport	JMR	34	-	-	-	7	-	1
St. James Municipal Airport	JYG	12	-	-	-	2	-	-
Litchfield Municipal Airport	LJF	33	-	1	-	-	-	2
Little Falls-Morrison County Airport	LXL	35	-	1	-	-	-	-
Luverne Municipal Airport - Quentin Aanenson Field	LYV	20	-	-	-	-	-	1
Maple Lake Municipal Airport	MGG	64	-	6	-	-	-	-
Jackson Municipal Airport	MJQ	24	-	-	-	-	-	1
Mankato Regional Airport - Sohler Field	MKT	69	4	11	4	5	1	6
Southwest Minnesota Regional-Marshall/Ryan Field	MML	23	6	4	6	-	1	1
Morris Municipal Airport - Charlie Schmidt Field	MOX	13	-	5	2	2	-	1
Montevideo-Chippewa County Airport	MVE	26	-	1	-	-	-	2
Windom Municipal Airport	MWM	18	-	1	-	-	1	-



FORECAST TECHNICAL REPORT

GA Fleet	and Military	Forecast						
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН
Moose Lake-Carlton County Airport	MZH	12	-	-	-	-	-	3
Winona Municipal Airport - Max Conrad Field	ONA	37	2	6	1	2	-	2
Orr Regional Airport	ORB	9	-	-	-	-	-	-
Worthington Municipal Airport	OTG	27	-	4	-	-	-	-
Olivia Regional Airport	OVL	8	-	-	-	-	-	5
Owatonna Degner Regional Airport	OWA	63	-	3	-	-	-	2
Paynesville Municipal Airport	PEX	29	-	1	-	-	-	1
Park Rapids Municipal Airport - Konshok Field	PKD	32	-	4	-	-	-	-
Princeton Municipal Airport	PNM	63	-	3	-	3	-	-
Pipestone Municipal Airport	PQN	20	-	1	-	-	-	-
Pine River Regional Airport	PWC	58	1	3	2	-	-	3
Red Wing Regional Airport	RGK	67	6	4	1	-	-	-
Rush City Regional Airport	ROS	79	-	1	-	3	-	1
Roseau Municipal Airport - Rudy Billberg Field	ROX	19	-	-	-	-	-	2
Warroad International Memorial Airport	RRT	19	1	1	4	-	-	1
Rochester International Airport	RST	83	4	4	-	3	-	1
Redwood Falls Municipal Airport	RWF	12	-	3	-	2	-	3
Staples Municipal Airport	SAZ	21	-	1	-	-	-	2
Blue Earth Municipal Airport	SBU	26	-	-	2	2	-	-
South St. Paul Municipal Airport - Fleming Field	SGS	316	-	15	18	8	-	8
St. Cloud Regional Airport	STC	114	10	7	-	-	17	-
Tracy Municipal Airport	TKC	8	-	-	-	-	-	-
Dodge Center Municipal Airport	TOB	54	-	-	-	2	-	5
Thief River Falls Regional Airport	TVF	25	3	1	1	-	-	1
Two Harbors Municipal - Richard B. Helgeson Field	TWM	43	-	1	-	2	-	7
New Ulm Municipal Airport	ULM	23	-	5	1	-	-	-
Ortonville Municipal Airport - Martinson Field	VVV	3	-	-	-	-	-	-
Waskish Municipal Airport	VWU	1	-	-	-	-	-	_
Longville Municipal Airport	XVG	23	-	2	-	-	-	-
Walker Municipal Airport	Y49	33	-	3	-	10	-	-
Sleepy Eye Municipal Airport	Y58	7	-	ı	1	2	-	3
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	20	-	-	-	-	-	1



FORECAST TECHNICAL REPORT

Table C-26: 2015 GA Operations Forecast

			20	15 GA and N	Military Oper	ations Fore	cast						
Almost Nove	ID.			А	ircraft Type				Opera	tion Type	Ор	eration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Crystal Airport	MIC	41,793	2,750	3,913	1,309	40	-	1,946	27,701	24,050	21,541	20,154	10,056
Airlake Airport	LVN	34,813	790	1,835	1,878	86	-	188	7,918	31,672	16,479	15,418	7,693
Lake Elmo Airport	21D	34,699	56	1,288	313	416	-	412	14,483	22,701	15,477	14,481	7,226
St. Paul Downtown Airport - Holman Field	STP	29,621	23,612	12,508	5,868	87	-	21,699	60,900	32,494	38,874	36,371	18,149
Anoka County/Blaine Airport - Janes Field	ANE	49,737	10,739	12,820	2,739	651	-	3,897	44,375	36,207	33,541	31,382	15,659
Flying Cloud Airport	FCM	61,762	11,192	7,901	4,678	283	-	6,169	53,804	38,181	38,288	35,823	17,875
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	29,751	-	-	-	2,145	-	31,896	-	31,577	319	-
Hawley Municipal Airport	04Y	7,812	-	309	-	683	-	383	4,961	4,226	3,824	3,578	1,785
Henning Municipal Airport	05Y	3,412	-	-	-	-	-	395	2,247	1,561	762	2,665	381
Herman Municipal Airport	06Y	2,465	-	-	-	-	-	-	1,479	986	986	1,233	247
Hill City-Quadna Mountain Airport	07Y	1,506	-	-	-	-	-	-	889	617	627	587	293
Winsted Municipal Airport	10D	9,490	-	305	-	-	-	2,268	8,806	3,257	1,206	8,444	2,413
Tower Municipal Airport	12D	6,389	329	518	-	191	-	321	6,199	1,550	387	7,207	155
Le Sueur Municipal Airport	12Y	6,256	-	306	-	677	57	9,113	6,564	9,845	3,282	9,845	3,282
Littlefork Municipal Airport - Hanover Airport	13Y	1,799	-	-	-	1,022	-	-	1,410	1,410	-	2,680	141
Long Prairie Municipal Airport - Todd Field	14Y	6,488	-	444	-	491	9	-	1,975	5,458	1,487	5,203	743
Perham Municipal Airport	16D	5,402	962	-	1,205	-	-	313	5,518	2,365	788	6,306	788
Milaca Municipal Airport	18Y	11,774	-	-	-	-	-	-	6,948	4,826	4,901	4,585	2,288
Hector Municipal Airport	1D6	6,966	-	-	-	226	-	507	1,100	6,599	3,205	2,998	1,496
Karlstad Municipal Airport	23D	1,000	-	-	-	-	-	-	-	1,000	-	1,000	-
Murdock Municipal Airport	23Y	1,000	-	-	-	-	-	-	-	1,000	800	100	100
Forest Lake Airport	25D	9,162	-	304	-	336	-	188	5,994	3,996	1,998	5,994	1,998
Grygla Municipal Airport - Mel Wilkens Field	3G2	1,462	-	-	-	-	-	-	863	599	609	570	284
Mahnomen County Airport	3N8	5,126	-	-	-	-	-	-	4,869	256	4,357	718	51
Northome Municipal Airport	43Y	1,292	-	-	-	-	-	-	129	1,163	129	1,034	129
Pelican Rapids Municipal Airport - Lyon's Field	47Y	2,934	-	-	-	-	-	-	1,467	1,467	-	2,934	-
Piney-Pinecreek Border Airport	48Y	1,800	-	-	-	-	-	-	1,062	738	612	1,188	-
Remer Municipal Airport	52Y	1,698	-	-	-	-	-	361	2,059	-	-	1,853	206
Rushford Municipal Airport	55Y	1,756	-	-	-	499	-	-	1,353	902	226	677	1,353
Tyler Municipal Airport	63Y	1,615	-	-	-	-	-	-	1,454	162	808	808	-
Wells Municipal Airport	68Y	5,270	-	-	-	-	-	-	4,216	1,054	4,216	790	263
Brooten Municipal Airport	6D1	5,297	-	-	-	-	-	1,350	5,318	1,329	3,324	2,659	665
Backus Municipal Airport	7Y3	2,553	-	375	-	-	-	-	2,898	29	29	293	2,605



FORECAST TECHNICAL REPORT

			20	115 GA and I	Military Oper	ations Fore	cast						
				А	ircraft Type				Opera	tion Type	Ор	eration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН	Local	Itinerant	Business	Leisure	Training
Bagley Municipal Airport	7Y4	2,327	-	-	-	-	-	-	2,327	-	969	906	452
Big Falls Municipal Airport	7Y9	1,280	-	-	-	-	-	408	1,266	422	422	844	422
Clarissa Municipal Airport	8Y5	1,245	-	-	-	-	-	-	672	573	518	485	242
Bowstring Airport	9Y0	2,002	-	-	-	-	-	-	1,001	1,001	400	1,401	200
East Gull Lake Airport	9Y2	1,563	-	-	-	-	-	-	922	641	-	1,563	-
Waseca Municipal Airport	ACQ	6,031	-	-	-	-	-	-	4,825	1,206	603	5,126	302
Wadena Municipal Airport	ADC	5,692	-	-	-	-	6	-	1,480	4,217	2,372	2,219	1,107
Albert Lea Municipal Airport	AEL	19,914	2,365	1,860	-	-	285	3,076	22,274	5,225	11,446	10,709	5,344
Aitkin Municipal Airport - Steve Kurtz Field	AIT	17,852	-	1,048	2,503	580	-	-	16,047	5,935	1,099	19,784	1,099
Appleton Municipal Airport	AQP	824	-	-	1,348	-	-	-	2,173	-	1,934	217	22
Austin Municipal Airport	AUM	21,542	3,377	885	2,114	-	114	-	23,828	4,205	11,213	2,803	14,016
Alexandria Municipal Airport - Chandler Field	AXN	23,422	-	1,003	2,395	-	285	-	17,087	10,016	11,281	10,555	5,267
Benson Municipal Airport - Veterans Field	BBB	3,086	-	975	1,165	-	-	151	4,839	538	5,108	269	-
Baudette International Airport	BDE	10,336	-	817	-	903	71	-	1,213	10,914	3,032	7,883	1,213
Willmar Municipal Airport - John L. Rice Field	BDH	17,014	833	1,311	-	-	47	-	5,649	13,557	7,994	7,480	3,732
Silver Bay Municipal Airport - Wayne Johnson	BFW	2,696	-	-	-	-	-	859	1,778	1,778	178	3,022	356
Bemidji Regional Airport	BJI	2,440	-	2,882	3,592	-	474	78	2,840	6,626	7,573	1,420	473
Brainerd Lakes Regional Airport	BRD	30,158	909	2,860	2,277	1,582	379	2,365	12,063	28,466	16,870	15,784	7,876
Cambridge Municipal Airport	CBG	16,637	-	438	-	1,939	95	544	9,386	10,267	8,180	7,654	3,819
Buffalo Municipal Airport	CFE	23,262	-	784	-	867	209	-	17,584	7,536	2,512	20,096	2,512
Houston County Airport	CHU	3,399	-	269	-	-	-	-	3,301	367	2,567	1,100	-
Grand Marais-Cook County Airport	CKC	3,329	-	-	-	291	-	-	1,086	2,534	724	2,534	362
Crookston Municipal Airport - Kirkwood Field	CKN	25,926	-	-	4,060	-	47	-	15,017	15,017	6,007	3,003	21,024
Canby Municipal Airport - Myers Field	CNB	5,766	-	1,481	-	-	-	-	3,624	3,624	5,435	1,449	362
Cloquet-Carlton County Airport	COQ	9,549	-	-	571	265	95	-	9,432	1,048	3,144	3,144	4,192
Cook Municipal Airport	CQM	5,187	-	-	707	-	-	184	3,039	3,039	1,823	4,254	-
Norman County/Ada/Twin Valley Airport	D00	2,498	-	-	-	-	-	-	2,248	250	250	1,998	250
Fertile Municipal Airport	D14	10,203	-	-	-	-	-	-	10,203	-	-	10,203	-
Starbuck Municipal Airport	D32	1,700	-	-	-	-	-	-	1,003	697	708	662	330
Warren Municipal Airport	D37	1,391	-	-	1,138	-	-	-	1,492	1,037	1,053	985	491
Sauk Centre Municipal Airport	D39	5,420	-	464	-	-	28	576	4,866	1,622	4,866	1,622	-
Stephen Municipal Airport	D41	3,826	-	-	1,341	-	-	348	5,516	-	5,516	-	-
Springfield Municipal Airport	D42	2,021	-	-	-	766	-	-	557	2,229	1,672	1,115	-
Red Lake Falls Municipal Airport	D81	3,302	-	-	-	-	-	-	1,981	1,321	1,321	1,321	660
Duluth International Airport	DLH	26,806	2,060	5,940	-	597	7,573	335	11,694	31,617	36,814	2,166	4,331

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FORECAST TECHNICAL REPORT

	2015 GA and Military Operations Forecast Aircraft Type Operation Type Operation Type Operation Type												
				Д	ircraft Type				Opera	tion Type	Ор	eration Purpo	se
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН	Local	Itinerant	Business	Leisure	Training
Detroit Lakes Municipal Airport - Wething Field	DTL	11,253	1,837	-	4,602	-	95	598	6,128	12,257	7,653	7,160	3,573
Slayton Municipal Airport	DVP	2,210	-	-	-	-	-	352	1,512	1,050	1,066	998	498
Lac Qui Parle County Airport - Bud Frye Field	DXX	1,821	-	-	-	-	-	331	1,507	646	861	1,076	215
Duluth Sky Harbor Airport	DYT	12,714	-	1,351	-	-	-	-	11,111	2,954	422	13,362	281
Ely Municipal Airport	ELO	7,294	-	749	-	414	-	-	3,383	5,074	7,189	846	423
Wheaton Municipal Airport	ETH	1,811	-	-	-	-	-	-	1,811	-	1,811	-	-
Eveleth-Virginia Municipal Airport	EVM	7,163	-	204	488	226	-	127	7,798	410	7,387	657	164
Faribault Municipal Airport	FBL	16,470	-	1,586	-	292	95	1,476	13,944	5,976	996	13,944	4,980
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	8,928	-	199	476	441	95	-	3,449	6,691	4,220	3,949	1,970
Preston - Fillmore County Airport	FKA	6,370	-	-	-	329	-	369	4,948	2,120	2,474	2,827	1,767
Bigfork Municipal Airport	FOZ	2,528	-	-	-	-	-	-	506	2,022	1,011	1,517	-
Fairmont Municipal Airport	FRM	6,075	850	446	-	-	95	-	3,733	3,733	5,600	1,867	-
Fosston Municipal Airport	FSE	8,326	-	950	-	-	-	590	6,018	3,848	987	8,583	296
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	4,178	1,259	660	-	-	-	-	2,744	3,354	3,659	1,829	610
Glenwood Municipal Airport	GHW	5,211	-	-	-	-	-	-	1,824	3,387	1,042	3,127	1,042
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	19,040	504	793	-	585	57	-	10,490	10,490	12,588	4,196	4,196
Glencoe Municipal Airport - Vernon Perschau Field	GYL	9,998	-	354	-	-	-	1,099	4,580	6,871	1,718	8,588	1,145
Hutchinson Municipal Airport - Butler Field	HCD	10,273	-	833	663	614	43	345	7,024	5,747	5,316	4,973	2,482
Hallock Municipal Airport	HCO	3,339	-	-	1,489	-	-	-	3,138	1,690	4,780	48	-
Range Regional Airport	HIB	24,057	-	1,123	-	621	95	2,091	8,396	19,591	19,591	5,598	2,799
McGregor - Isedor Iverson Airport	HZX	4,114	-	-	-	-	-	202	2,547	1,769	1,797	1,681	839
Falls International Airport	INL	13,681	-	-	-	4,185	95	-	5,388	12,573	3,053	14,369	539
Moorhead Municipal Airport	JKJ	8,072	-	1,220	-	-	-	-	6,226	3,066	3,868	3,619	1,806
Mora Municipal Airport	JMR	9,319	-	-	-	1,271	-	238	2,834	7,994	4,507	4,217	2,104
St. James Municipal Airport	JYG	4,683	-	-	-	484	-	-	4,133	1,033	1,033	4,133	-
Litchfield Municipal Airport	LJF	8,500	-	323	-	-	-	401	4,612	4,612	922	6,457	1,845
Little Falls-Morrison County Airport	LXL	9,650	-	354	-	-	47	-	1,828	8,224	4,184	3,915	1,953
Luverne Municipal Airport - Quentin Aanenson Field	LYV	10,934	-	-	-	-	-	387	4,529	6,793	3,396	3,396	4,529
Maple Lake Municipal Airport	MGG	9,454	-	904	-	-	-	-	9,633	725	2,072	2,589	5,697
Jackson Municipal Airport	MJQ	6,274	-	-	-	-	9	210	1,948	4,546	6,494	-	-
Mankato Regional Airport - Sohler Field	MKT	74,871	8,150	11,395	10,206	3,151	474	4,418	76,612	36,053	22,533	33,800	56,333
Southwest Minnesota Regional-Marshall/Ryan Field	MML	10,576	5,453	1,716	6,829	-	95	355	9,509	15,515	18,768	3,754	2,502
Morris Municipal Airport - Charlie Schmidt Field	MOX	3,145	-	1,175	1,403	325	6	182	4,989	1,247	5,301	624	312
Montevideo-Chippewa County Airport	MVE	11,320	-	529	-	-	19	656	6,262	6,262	11,271	1,002	250

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FORECAST TECHNICAL REPORT

			20)15 GA and I	Military Oper	ations Fore	cast						
	-			А	ircraft Type				Opera	tion Type	Ор	eration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Windom Municipal Airport	MWM	8,388	-	574	-	-	-	-	4,481	4,481	4,481	3,585	896
Moose Lake-Carlton County Airport	MZH	4,393	-	-	-	-	-	840	2,355	2,878	2,093	1,570	1,570
Winona Municipal Airport - Max Conrad Field	ONA	7,775	952	1,248	596	276	24	310	8,945	2,236	6,709	2,236	2,236
Orr Regional Airport	ORB	2,539	-	-	-	-	-	-	1,016	1,524	762	1,778	-
Worthington Municipal Airport	OTG	9,000	-	1,321	-	-	483	-	4,321	6,482	5,402	5,402	-
Olivia Regional Airport	OVL	2,656	-	-	-	-	-	1,058	2,192	1,522	1,546	1,446	722
Owatonna Degner Regional Airport	OWA	29,742	-	1,273	-	-	237	790	15,428	16,615	13,337	12,479	6,227
Paynesville Municipal Airport	PEX	5,042	-	235	-	-	-	146	3,634	1,790	542	4,339	542
Park Rapids Municipal Airport - Konshok Field	PKD	14,916	-	1,768	-	-	24	-	8,354	8,354	6,954	6,507	3,247
Princeton Municipal Airport	PNM	12,354	-	577	-	319	285	-	6,767	6,767	2,030	10,151	1,353
Pipestone Municipal Airport	PQN	8,066	-	487	-	-	28	-	4,291	4,291	8,581	-	-
Pine River Regional Airport	PWC	10,345	533	559	668	-	-	347	7,472	4,981	1,245	9,340	1,868
Red Wing Regional Airport	RGK	11,326	2,017	635	505	-	664	-	4,544	10,603	11,361	3,029	757
Rush City Regional Airport	ROS	23,132	-	424	-	469	9	263	12,149	12,149	2,430	9,719	12,149
Roseau Municipal Airport - Rudy Billberg Field	ROX	8,462	-	-	-	-	-	674	914	8,223	8,223	914	-
Warroad International Memorial Airport	RRT	5,364	657	344	2,468	-	-	214	6,332	2,714	7,237	1,357	452
Rochester International Airport	RST	30,316	3,126	1,639	-	604	221	339	21,022	15,223	28,996	5,437	1,812
Redwood Falls Municipal Airport	RWF	9,618	-	2,695	-	994	285	1,672	10,378	4,884	4,579	10,378	305
Staples Municipal Airport	SAZ	9,061	-	548	-	-	-	679	5,144	5,144	2,058	7,201	1,029
Blue Earth Municipal Airport	SBU	11,612	-	-	2,192	507	-	-	10,733	3,578	6,440	6,440	1,431
South St. Paul Municipal Airport - Fleming Field	SGS	55,579	-	2,631	7,541	873	-	979	43,943	23,662	25,690	37,182	4,732
St. Cloud Regional Airport	STC	31,415	6,005	1,968	-	-	2,728	-	31,587	10,529	12,635	8,423	21,058
Tracy Municipal Airport	TKC	3,169	-	-	-	-	-	-	1,901	1,268	1,268	1,584	317
Dodge Center Municipal Airport	TOB	8,966	-	-	-	261	-	586	2,453	7,360	2,944	2,944	3,925
Thief River Falls Regional Airport	TVF	22,206	6,216	1,086	2,595	-	95	674	11,176	21,695	9,862	6,574	16,436
Two Harbors Municipal - Richard B. Helgeson Field	TWM	7,975	-	228	-	252	-	847	5,581	3,720	930	6,511	1,860
New Ulm Municipal Airport	ULM	7,812	-	1,605	958	-	9	-	7,788	2,596	7,269	2,077	1,038
Ortonville Municipal Airport - Martinson Field	VVV	5,224	-	-	-	-	-	-	1,567	3,657	2,612	2,090	522
Waskish Municipal Airport	VWU	219	-	-	-	-	-	-	142	77	33	186	-
Longville Municipal Airport	XVG	7,153	-	490	-	-	-	-	2,675	4,968	382	7,260	-
Walker Municipal Airport	Y49	8,442	-	754	-	1,668	-	-	7,605	3,259	2,173	8,691	-
Sleepy Eye Municipal Airport	Y58	1,262	-	-	516	239	-	402	1,428	992	1,007	943	470
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	4,230	-	-	-	-	-	159	1,463	2,926	1,827	1,709	853

Source: HNTB Analysis



FORECAST TECHNICAL REPORT

Table C-27: 2020 GA Operations Forecast

			2020	GA and Mil	itary Opera	tions Forec	ast						
				Ai	rcraft Type				Oper	ation Type	Ope	ration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Crystal Airport	MIC	43,513	4,353	4,327	1,246	44	-	2,269	29,843	25,910	23,206	21,713	10,834
Airlake Airport	LVN	37,013	1,058	1,927	1,789	95	-	188	8,414	33,657	17,511	16,384	8,175
Lake Elmo Airport	21D	37,018	87	1,449	327	460	-	549	15,537	24,353	16,604	15,535	7,752
St. Paul Downtown Airport - Holman Field	STP	30,343	30,552	12,740	5,768	96	-	23,963	67,465	35,997	43,065	40,293	20,105
Anoka County/Blaine Airport - Janes Field	ANE	50,472	13,603	11,742	2,692	719	-	4,261	45,975	37,513	34,751	32,514	16,224
Flying Cloud Airport	FCM	63,425	17,638	7,304	4,600	312	-	7,111	58,720	41,669	41,785	39,096	19,508
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	29,934	-	-	-	2,145	-	32,079	-	31,759	321	-
Hawley Municipal Airport	04Y	8,028	-	317	-	874	-	414	5,201	4,431	4,009	3,751	1,872
Henning Municipal Airport	05Y	3,540	-	-	-	-	-	432	2,344	1,628	794	2,780	397
Herman Municipal Airport	06Y	2,509	-	-	-	-	-	-	1,505	1,003	1,003	1,254	251
Hill City-Quadna Mountain Airport	07Y	1,578	-	-	-	-	-	-	931	647	657	614	307
Winsted Municipal Airport	10D	10,181	-	326	-	-	-	2,560	9,539	3,528	1,307	9,147	2,613
Tower Municipal Airport	12D	6,454	328	522	-	240	-	342	6,309	1,577	394	7,334	158
Le Sueur Municipal Airport	12Y	6,607	-	323	-	890	54	10,126	7,200	10,799	3,600	10,799	3,600
Littlefork Municipal Airport - Hanover Airport	13Y	1,827	-	-	-	1,293	-	-	1,560	1,560	-	2,964	156
Long Prairie Municipal Airport - Todd Field	14Y	6,626	-	453	-	625	9	-	2,049	5,663	1,542	5,399	771
Perham Municipal Airport	16D	5,625	989	-	1,255	-	-	343	5,748	2,463	821	6,569	821
Milaca Municipal Airport	18Y	12,388	-	-	-	-	-	-	7,310	5,078	5,156	4,825	2,407
Hector Municipal Airport	1D6	7,048	-	-	-	285	-	540	1,125	6,749	3,277	3,066	1,530
Karlstad Municipal Airport	23D	1,000	-	-	-	-	-	-	-	1,000	-	1,000	-
Murdock Municipal Airport	23Y	1,000	-	-	-	-	-	-	-	1,000	800	100	100
Forest Lake Airport	25D	9,881	-	327	-	451	-	214	6,523	4,349	2,174	6,523	2,174
Grygla Municipal Airport - Mel Wilkens Field	3G2	1,486	-	-	-	-	-	-	877	609	618	579	289
Mahnomen County Airport	3N8	5,315	-	-	-	-	-	-	5,049	266	4,518	744	53
Northome Municipal Airport	43Y	1,362	-	-	-	-	-	-	136	1,226	136	1,090	136
Pelican Rapids Municipal Airport - Lyon's Field	47Y	3,036	-	-	-	-	-	-	1,518	1,518	-	3,036	-
Piney-Pinecreek Border Airport	48Y	1,800	-	-	-	-	-	-	1,062	738	612	1,188	-
Remer Municipal Airport	52Y	1,855	-	-	-	-	-	415	2,270	-	-	2,043	227
Rushford Municipal Airport	55Y	1,798	-	-	-	636	-	-	1,460	973	243	730	1,460
Tyler Municipal Airport	63Y	1,657	-	-	-	-	-	-	1,491	166	828	828	-
Wells Municipal Airport	68Y	5,270	-	-	-	-	-	-	4,216	1,054	4,216	790	263
Brooten Municipal Airport	6D1	5,609	-	-	-	-	-	1,504	5,691	1,423	3,557	2,845	711
Backus Municipal Airport	7Y3	2,789	-	408	-	-	_	-	3,165	32	32	320	2,845
Bagley Municipal Airport	7Y4	2,383	-	-	-	-	-	-	2,383	-	992	928	463



FORECAST TECHNICAL REPORT

			2020) GA and Mil	itary Opera	tions Fored	cast						
				Ai	rcraft Type				Opera	ation Type	Оре	ration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Big Falls Municipal Airport	7Y9	1,300	-	-	-	-	-	436	1,302	434	434	868	434
Clarissa Municipal Airport	8Y5	1,273	-	-	-	-	-	-	688	586	530	496	247
Bowstring Airport	9Y0	2,088	-	-	-	-	-	-	1,044	1,044	418	1,462	209
East Gull Lake Airport	9Y2	1,715	-	-	-	-	-	-	1,012	703	-	1,715	-
Waseca Municipal Airport	ACQ	6,299	-	-	-	-	-	-	5,039	1,260	630	5,354	315
Wadena Municipal Airport	ADC	5,886	-	-	-	-	5	-	1,531	4,361	2,452	2,294	1,145
Albert Lea Municipal Airport	AEL	20,244	2,373	1,887	-	-	268	3,291	22,730	5,332	11,680	10,928	5,453
Aitkin Municipal Airport - Steve Kurtz Field	AIT	18,975	-	1,112	2,661	767	-	-	17,165	6,349	1,176	21,163	1,176
Appleton Municipal Airport	AQP	847	-	-	1,386	-	-	-	2,233	-	1,987	223	22
Austin Municipal Airport	AUM	22,383	3,463	918	2,197	-	107	-	24,707	4,360	11,627	2,907	14,534
Alexandria Municipal Airport - Chandler Field	AXN	25,034	-	1,069	2,560	-	268	-	18,240	10,691	12,042	11,267	5,622
Benson Municipal Airport - Veterans Field	BBB	3,178	-	1,002	1,200	-	-	164	4,990	554	5,267	277	-
Baudette International Airport	BDE	10,569	-	833	-	1,150	67	-	1,262	11,357	3,155	8,202	1,262
Willmar Municipal Airport - John L. Rice Field	BDH	17,924	867	1,378	-	-	45	-	5,945	14,268	8,413	7,872	3,928
Silver Bay Municipal Airport - Wayne Johnson	BFW	2,827	-	-	-	-	-	948	1,888	1,888	189	3,209	378
Bemidji Regional Airport	BJI	2,597	-	3,061	3,823	-	446	87	3,004	7,010	8,011	1,502	501
Brainerd Lakes Regional Airport	BRD	33,100	985	3,132	2,499	2,161	357	2,732	13,384	31,582	18,716	17,512	8,738
Cambridge Municipal Airport	CBG	18,104	-	476	-	2,627	89	623	10,468	11,451	9,123	8,536	4,259
Buffalo Municipal Airport	CFE	25,397	-	854	-	1,178	196	-	19,338	8,288	2,763	22,100	2,763
Houston County Airport	CHU	3,467	-	273	-	-	-	-	3,366	374	2,618	1,122	-
Grand Marais-Cook County Airport	CKC	3,540	-	-	-	385	-	-	1,178	2,748	785	2,748	393
Crookston Municipal Airport - Kirkwood Field	CKN	26,528	-	-	4,155	-	45	-	15,364	15,364	6,146	3,073	21,509
Canby Municipal Airport - Myers Field	CNB	5,894	-	1,511	-	-	-	-	3,702	3,702	5,554	1,481	370
Cloquet-Carlton County Airport	COQ	9,815	-	-	587	339	89	-	9,748	1,083	3,249	3,249	4,332
Cook Municipal Airport	CQM	5,243	-	-	715	-	-	195	3,077	3,077	1,846	4,307	-
Norman County/Ada/Twin Valley Airport	D00	2,481	-	-	-	-	-	-	2,233	248	248	1,985	248
Fertile Municipal Airport	D14	10,381	-	-	-	-	-	-	10,381	-	=	10,381	-
Starbuck Municipal Airport	D32	1,772	-	-	-	-	-	-	1,045	726	737	690	344
Warren Municipal Airport	D37	1,392	-	-	1,139	-	-	-	1,493	1,037	1,053	986	492
Sauk Centre Municipal Airport	D39	5,759	-	492	-	-	27	644	5,191	1,730	5,191	1,730	-
Stephen Municipal Airport	D41	3,810	-	-	1,336	-	-	365	5,510	-	5,510	-	-
Springfield Municipal Airport	D42	2,062	-	-	-	972	-	-	607	2,427	1,820	1,214	-
Red Lake Falls Municipal Airport	D81	3,335	-	-	-	-	-	-	2,001	1,334	1,334	1,334	667
Duluth International Airport	DLH	27,078	2,053	5,987	-	751	7,120	356	11,703	31,643	36,844	2,167	4,335
Detroit Lakes Municipal Airport - Wething Field	DTL	11,913	1,920	-	4,872	-	89	666	6,487	12,973	8,100	7,579	3,782

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FORECAST TECHNICAL REPORT

			2020) GA and Mil	itary Opera	tions Forec	ast						
0: 131	ID.			Ai	rcraft Type				Oper	ation Type	Ope	ration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН	Local	Itinerant	Business	Leisure	Training
Slayton Municipal Airport	DVP	2,227	-	-	-	-	-	373	1,534	1,066	1,082	1,013	505
Lac Qui Parle County Airport - Bud Frye Field	DXX	1,841	-	-	-	-	-	353	1,536	658	878	1,097	219
Duluth Sky Harbor Airport	DYT	12,947	-	1,373	-	-	-	-	11,313	3,007	430	13,604	286
Ely Municipal Airport	ELO	7,392	-	758	-	523	-	-	3,469	5,204	7,372	867	434
Wheaton Municipal Airport	ETH	1,838	-	-	-	-	-	-	1,838	-	1,838	-	-
Eveleth-Virginia Municipal Airport	EVM	7,235	-	206	493	284	-	135	7,936	418	7,518	668	167
Faribault Municipal Airport	FBL	17,085	-	1,642	-	378	89	1,611	14,563	6,241	1,040	14,563	5,201
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	9,238	-	206	493	568	89	-	3,604	6,991	4,410	4,126	2,059
Preston - Fillmore County Airport	FKA	6,560	-	-	-	422	-	400	5,167	2,215	2,584	2,953	1,846
Bigfork Municipal Airport	FOZ	2,635	-	-	-	-	-	-	527	2,108	1,054	1,581	-
Fairmont Municipal Airport	FRM	6,136	848	449	-	-	89	-	3,761	3,761	5,642	1,881	-
Fosston Municipal Airport	FSE	8,519	-	970	-	-	-	635	6,175	3,948	1,012	8,808	304
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	4,274	1,271	674	-	-	-	-	2,799	3,421	3,731	1,866	622
Glenwood Municipal Airport	GHW	5,421	-	-	-	-	-	-	1,897	3,524	1,084	3,253	1,084
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	19,858	519	825	-	759	54	-	11,008	11,008	13,209	4,403	4,403
Glencoe Municipal Airport - Vernon Perschau Field	GYL	10,550	-	373	-	-	-	1,220	4,857	7,286	1,821	9,107	1,214
Hutchinson Municipal Airport - Butler Field	HCD	10,701	-	866	691	797	40	378	7,410	6,063	5,608	5,247	2,618
Hallock Municipal Airport	HCO	3,273	-	-	1,460	-	-	-	3,077	1,657	4,686	47	-
Range Regional Airport	HIB	24,394	-	1,137	-	784	89	2,231	8,591	20,045	20,045	5,727	2,864
McGregor - Isedor Iverson Airport	HZX	4,302	-	-	-	-	-	222	2,670	1,854	1,883	1,762	879
Falls International Airport	INL	13,894	-	-	-	5,293	89	-	5,783	13,493	3,277	15,420	578
Moorhead Municipal Airport	JKJ	8,316	-	1,254	-	-	-	-	6,411	3,158	3,983	3,727	1,860
Mora Municipal Airport	JMR	9,881	-	-	-	1,678	-	265	3,095	8,729	4,922	4,605	2,298
St. James Municipal Airport	JYG	4,749	-	-	-	611	-	-	4,288	1,072	1,072	4,288	-
Litchfield Municipal Airport	LJF	8,893	-	338	-	-	-	442	4,836	4,836	967	6,771	1,935
Little Falls-Morrison County Airport	LXL	9,995	-	366	-	-	45	-	1,892	8,514	4,331	4,052	2,022
Luverne Municipal Airport - Quentin Aanenson Field	LYV	11,112	-	-	-	-	-	414	4,610	6,916	3,458	3,458	4,610
Maple Lake Municipal Airport	MGG	10,367	-	989	-	-	-	-	10,560	795	2,271	2,839	6,245
Jackson Municipal Airport	MJQ	6,491	-	-	-	-	9	229	2,019	4,710	6,729	-	-
Mankato Regional Airport - Sohler Field	MKT	78,666	8,451	11,947	10,724	4,122	446	4,884	81,084	38,157	23,848	35,773	59,621
Southwest Minnesota Regional-Marshall/Ryan Field	MML	10,982	5,589	1,778	7,092	-	89	388	9,848	16,069	19,438	3,888	2,592
Morris Municipal Airport - Charlie Schmidt Field	MOX	3,252	-	1,212	1,451	418	5	198	5,230	1,307	5,557	654	327
Montevideo-Chippewa County Airport	MVE	11,606	-	541	-	-	18	708	6,436	6,436	11,585	1,030	257
Windom Municipal Airport	MWM	8,646	-	591	-	-	-	-	4,619	4,619	4,619	3,695	924
Moose Lake-Carlton County Airport	MZH	4,550	-	-	-	-	-	915	2,459	3,006	2,186	1,640	1,640



FORECAST TECHNICAL REPORT

			2020) GA and Mil	itary Opera	tions Forec	ast						
0. 101	10			Ai	rcraft Type				Opera	ation Type	Оре	ration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Winona Municipal Airport - Max Conrad Field	ONA	7,966	963	1,276	611	352	22	334	9,219	2,305	6,914	2,305	2,305
Orr Regional Airport	ORB	2,569	-	-	-	-	-	-	1,027	1,541	771	1,798	-
Worthington Municipal Airport	OTG	9,409	-	1,378	-	-	454	-	4,496	6,744	5,620	5,620	-
Olivia Regional Airport	OVL	2,681	-	-	-	-	-	1,124	2,245	1,560	1,584	1,482	739
Owatonna Degner Regional Airport	OWA	31,431	-	1,343	-	-	223	878	16,310	17,565	14,100	13,192	6,583
Paynesville Municipal Airport	PEX	5,348	-	249	-	-	-	163	3,859	1,901	576	4,608	576
Park Rapids Municipal Airport - Konshok Field	PKD	15,507	-	1,834	-	-	22	-	8,682	8,682	7,227	6,762	3,374
Princeton Municipal Airport	PNM	13,372	-	623	-	430	268	-	7,346	7,346	2,204	11,019	1,469
Pipestone Municipal Airport	PQN	8,222	-	496	-	-	27	-	4,372	4,372	8,744	-	-
Pine River Regional Airport	PWC	11,366	578	613	734	-	-	401	8,216	5,477	1,369	10,270	2,054
Red Wing Regional Airport	RGK	11,737	2,063	656	524	-	624	-	4,681	10,923	11,703	3,121	780
Rush City Regional Airport	ROS	24,874	-	455	-	628	9	298	13,132	13,132	2,626	10,506	13,132
Roseau Municipal Airport - Rudy Billberg Field	ROX	8,762	-	-	-	-	-	734	950	8,547	8,547	950	-
Warroad International Memorial Airport	RRT	5,549	671	356	2,553	-	-	233	6,552	2,808	7,488	1,404	468
Rochester International Airport	RST	32,821	3,340	1,771	-	815	208	386	22,818	16,523	31,472	5,901	1,967
Redwood Falls Municipal Airport	RWF	9,709	-	2,714	-	1,249	268	1,776	10,686	5,029	4,714	10,686	314
Staples Municipal Airport	SAZ	9,419	-	568	-	-	-	743	5,365	5,365	2,146	7,511	1,073
Blue Earth Municipal Airport	SBU	11,465	-	-	2,164	624	-	-	10,690	3,563	6,414	6,414	1,425
South St. Paul Municipal Airport - Fleming Field	SGS	60,814	-	2,873	8,252	1,190	-	1,128	48,266	25,990	28,217	40,841	5,198
St. Cloud Regional Airport	STC	33,688	6,356	2,106	-	-	2,565	-	33,536	11,179	13,414	8,943	22,357
Tracy Municipal Airport	TKC	3,248	-	-	-	-	-	-	1,949	1,299	1,299	1,624	325
Dodge Center Municipal Airport	TOB	9,558	-	-	-	347	-	657	2,640	7,921	3,168	3,168	4,225
Thief River Falls Regional Airport	TVF	22,704	6,272	1,108	2,653	-	89	725	11,407	22,144	10,065	6,710	16,776
Two Harbors Municipal - Richard B. Helgeson Field	TWM	8,266	-	235	-	325	-	924	5,850	3,900	975	6,825	1,950
New Ulm Municipal Airport	ULM	8,016	-	1,643	983	-	9	-	7,989	2,663	7,456	2,130	1,065
Ortonville Municipal Airport - Martinson Field	VVV	5,352	-	-	-	-	-	-	1,605	3,746	2,676	2,141	535
Waskish Municipal Airport	VWU	234	-	-	-	-	-	-	152	82	35	199	-
Longville Municipal Airport	XVG	7,860	-	537	-	-	-	-	2,939	5,458	420	7,977	-
Walker Municipal Airport	Y49	9,091	-	810	-	2,237	-	-	8,497	3,641	2,428	9,710	-
Sleepy Eye Municipal Airport	Y58	1,295	-	-	530	305	-	434	1,513	1,051	1,067	998	498
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	4,357	-	-	-	-	-	172	1,510	3,019	1,885	1,764	880

Source: HNTB Analysis

HNTB

FORECAST TECHNICAL REPORT

Table C-28: 2030 GA Operations Forecast

			20	30 GA and N	Military Opera	ntions Fore	cast						
	15			A	ircraft Type				Operat	tion Type	Оре	eration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Crystal Airport	MIC	46,879	8,158	5,237	1,144	54	-	2,602	34,298	29,777	26,670	24,953	12,451
Airlake Airport	LVN	40,815	3,130	2,115	1,642	116	-	188	9,601	38,405	19,982	18,696	9,329
Lake Elmo Airport	21D	41,264	161	1,810	358	560	-	548	17,411	27,290	18,606	17,408	8,686
St. Paul Downtown Airport - Holman Field	STP	32,115	38,865	14,388	5,730	117	-	24,483	75,444	40,255	48,158	45,058	22,483
Anoka County/Blaine Airport - Janes Field	ANE	53,312	21,923	9,447	2,675	876	-	4,368	50,993	41,608	38,544	36,063	17,995
Flying Cloud Airport	FCM	69,433	27,807	7,194	4,569	381	-	7,306	68,255	48,435	48,571	45,444	22,676
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	-	30,011	-	-	-	2,145	-	32,156	-	31,834	322	-
Hawley Municipal Airport	04Y	9,832	-	360	-	1,065	-	457	6,325	5,388	4,876	4,562	2,276
Henning Municipal Airport	05Y	4,413	-	-	-	-	-	476	2,885	2,004	978	3,422	489
Herman Municipal Airport	06Y	3,007	-	-	-	-	-	-	1,804	1,203	1,203	1,503	301
Hill City-Quadna Mountain Airport	07Y	2,003	-	-	-	-	-	-	1,182	821	834	780	389
Winsted Municipal Airport	10D	13,495	-	371	-	-	-	2,823	12,183	4,506	1,669	11,682	3,338
Tower Municipal Airport	12D	7,658	326	594	-	293	-	377	7,399	1,850	462	8,601	185
Le Sueur Municipal Airport	12Y	8,515	-	367	-	1,085	48	11,165	8,472	12,708	4,236	12,708	4,236
Littlefork Municipal Airport - Hanover Airport	13Y	2,187	-	-	-	1,576	-	-	1,881	1,881	-	3,574	188
Long Prairie Municipal Airport - Todd Field	14Y	7,992	-	515	-	762	8	-	2,465	6,811	1,855	6,494	928
Perham Municipal Airport	16D	7,055	983	-	1,244	-	-	378	6,762	2,898	966	7,728	966
Milaca Municipal Airport	18Y	15,879	-	-	-	-	-	-	9,370	6,509	6,609	6,184	3,086
Hector Municipal Airport	1D6	8,354	-	-	-	347	-	596	1,328	7,969	3,870	3,621	1,807
Karlstad Municipal Airport	23D	1,000	-	-	-	-	-	-	-	1,000	-	1,000	-
Murdock Municipal Airport	23Y	1,000	-	-	-	-	-	-	-	1,000	800	100	100
Forest Lake Airport	25D	13,240	-	372	-	550	-	236	8,638	5,759	2,879	8,638	2,879
Grygla Municipal Airport - Mel Wilkens Field	3G2	1,775	-	-	-	-	-	-	1,047	728	739	691	345
Mahnomen County Airport	3N8	6,614	-	-	-	-	-	-	6,283	331	5,622	926	66
Northome Municipal Airport	43Y	1,749	-	-	-	-	-	-	175	1,574	175	1,399	175
Pelican Rapids Municipal Airport - Lyon's Field	47Y	3,766	-	-	-	-	-	-	1,883	1,883	-	3,766	-
Piney-Pinecreek Border Airport	48Y	1,800	-	-	-	-	-	-	1,062	738	612	1,188	-
Remer Municipal Airport	52Y	2,544	-	-	-	-	-	457	3,001	-	-	2,701	300
Rushford Municipal Airport	55Y	2,179	-	-	-	775	-	-	1,772	1,182	295	886	1,772
Tyler Municipal Airport	63Y	2,015	-	-	-	-	-	-	1,813	201	1,007	1,007	-
Wells Municipal Airport	68Y	6,096	-	-	-	-	-	-	4,877	1,219	4,877	914	305
Brooten Municipal Airport	6D1	7,258	-	-	-	-	-	1,659	7,133	1,783	4,458	3,567	892
Backus Municipal Airport	7Y3	3,822	-	465	-	-	-	-	4,244	43	43	429	3,815



FORECAST TECHNICAL REPORT

			20	30 GA and N	Military Opera	ations Fore	cast						
				Д	ircraft Type				Opera	tion Type	Ор	eration Purpo	ose
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Bagley Municipal Airport	7Y4	2,888	-	-	-	-	-	-	2,888	-	1,202	1,125	561
Big Falls Municipal Airport	7Y9	1,556	-	-	-	-	-	481	1,528	509	509	1,018	509
Clarissa Municipal Airport	8Y5	1,541	-	-	-	-	-	-	832	709	642	600	300
Bowstring Airport	9Y0	2,637	-	-	-	-	-	-	1,318	1,318	527	1,846	264
East Gull Lake Airport	9Y2	2,371	-	-	-	-	-	-	1,399	972	-	2,371	-
Waseca Municipal Airport	ACQ	7,938	-	-	-	-	-	-	6,351	1,588	794	6,748	397
Wadena Municipal Airport	ADC	7,298	-	-	-	-	5	-	1,897	5,405	3,040	2,844	1,419
Albert Lea Municipal Airport	AEL	24,223	2,358	2,146	-	-	240	3,629	26,402	6,193	13,567	12,694	6,334
Aitkin Municipal Airport - Steve Kurtz Field	AIT	24,764	-	1,264	2,639	935	-	-	21,610	7,993	1,480	26,642	1,480
Appleton Municipal Airport	AQP	1,036	-	-	1,374	-	-	-	2,411	-	2,145	241	24
Austin Municipal Airport	AUM	27,975	3,441	1,044	2,179	-	96	-	29,525	5,210	13,894	3,474	17,368
Alexandria Municipal Airport - Chandler Field	AXN	32,957	-	1,216	2,539	-	240	-	23,296	13,656	15,381	14,391	7,181
Benson Municipal Airport - Veterans Field	BBB	3,907	-	1,140	1,190	-	-	181	5,776	642	6,097	321	-
Baudette International Airport	BDE	12,791	-	948	-	1,402	60	-	1,520	13,681	3,800	9,881	1,520
Willmar Municipal Airport - John L. Rice Field	BDH	22,993	861	1,567	-	-	40	-	7,489	17,973	10,598	9,916	4,948
Silver Bay Municipal Airport - Wayne Johnson	BFW	3,602	-	-	-	-	-	1,045	2,324	2,324	232	3,950	465
Bemidji Regional Airport	BJI	3,390	-	3,482	3,792	-	400	96	3,348	7,812	8,928	1,674	558
Brainerd Lakes Regional Airport	BRD	45,827	979	3,562	2,479	2,635	320	3,012	17,506	41,309	24,481	22,905	11,429
Cambridge Municipal Airport	CBG	24,660	-	541	-	3,202	80	686	13,931	15,239	12,142	11,360	5,668
Buffalo Municipal Airport	CFE	34,764	-	971	-	1,436	176	-	26,143	11,204	3,735	29,878	3,735
Houston County Airport	CHU	4,171	-	311	-	-	-	-	4,034	448	3,137	1,345	-
Grand Marais-Cook County Airport	CKC	4,650	-	-	-	470	-	-	1,536	3,584	1,024	3,584	512
Crookston Municipal Airport - Kirkwood Field	CKN	32,171	-	-	4,121	-	40	-	18,166	18,166	7,266	3,633	25,432
Canby Municipal Airport - Myers Field	CNB	7,122	-	1,718	-	-	-	-	4,420	4,420	6,630	1,768	442
Cloquet-Carlton County Airport	COQ	12,036	-	-	583	413	80	-	11,800	1,311	3,933	3,933	5,244
Cook Municipal Airport	CQM	6,231	-	-	709	-	-	215	3,578	3,578	2,147	5,009	-
Norman County/Ada/Twin Valley Airport	D00	2,837	-	-	-	-	-	-	2,554	284	284	2,270	284
Fertile Municipal Airport	D14	12,454	-	-	-	-	-	-	12,454	-	-	12,454	-
Starbuck Municipal Airport	D32	2,222	-	-	-	-	-	-	1,311	911	925	865	432
Warren Municipal Airport	D37	1,611	-	-	1,129	-	-	-	1,617	1,123	1,141	1,067	533
Sauk Centre Municipal Airport	D39	7,499	-	560	-	-	24	710	6,594	2,198	6,594	2,198	-
Stephen Municipal Airport	D41	4,362	-	-	1,325	-	-	402	6,089	-	6,089	-	-
Springfield Municipal Airport	D42	2,480	-	-	-	1,185	-	-	733	2,932	2,199	1,466	-
Red Lake Falls Municipal Airport	D81	3,935	-	-	-	-	-	-	2,361	1,574	1,574	1,574	787
Duluth International Airport	DLH	32,132	2,040	6,809	-	916	6,393	393	13,145	35,539	41,381	2,434	4,868

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			20	30 GA and N	Military Opera	ntions Fored	cast						
	2			А	ircraft Type				Operat	tion Type	Оре	eration Purpo	se
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	OTH	Local	Itinerant	Business	Leisure	Training
Detroit Lakes Municipal Airport - Wething Field	DTL	15,401	1,908	-	4,832	-	80	734	7,652	15,303	9,555	8,940	4,461
Slayton Municipal Airport	DVP	2,617	-	-	-	-	-	412	1,787	1,242	1,261	1,180	589
Lac Qui Parle County Airport - Bud Frye Field	DXX	2,179	-	-	-	-	-	389	1,797	770	1,027	1,284	257
Duluth Sky Harbor Airport	DYT	15,587	-	1,562	-	-	-	-	13,547	3,601	514	16,291	343
Ely Municipal Airport	ELO	8,830	-	862	-	637	-	-	4,132	6,197	8,780	1,033	516
Wheaton Municipal Airport	ETH	2,192	-	-	-	-	-	-	2,192	-	2,192	-	-
Eveleth-Virginia Municipal Airport	EVM	8,586	-	234	489	347	-	149	9,314	490	8,824	784	196
Faribault Municipal Airport	FBL	21,245	-	1,867	-	460	80	1,776	17,801	7,629	1,271	17,801	6,357
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	11,455	-	234	489	693	80	-	4,405	8,546	5,391	5,044	2,517
Preston - Fillmore County Airport	FKA	8,043	-	-	-	514	-	441	6,299	2,699	3,149	3,599	2,250
Bigfork Municipal Airport	FOZ	3,326	-	-	-	-	-	-	665	2,660	1,330	1,995	-
Fairmont Municipal Airport	FRM	7,236	842	511	-	-	80	-	4,335	4,335	6,502	2,167	-
Fosston Municipal Airport	FSE	10,329	-	1,104	-	-	-	700	7,401	4,732	1,213	10,555	364
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	5,173	1,263	767	-	-	-	-	3,241	3,962	4,322	2,161	720
Glenwood Municipal Airport	GHW	6,776	-	-	-	-	-	-	2,372	4,404	1,355	4,066	1,355
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	25,075	516	939	-	926	48	-	13,752	13,752	16,502	5,501	5,501
Glencoe Municipal Airport - Vernon Perschau Field	GYL	13,558	-	424	-	-	-	1,345	6,131	9,196	2,299	11,495	1,533
Hutchinson Municipal Airport - Butler Field	HCD	13,415	-	985	685	971	36	416	9,080	7,429	6,872	6,429	3,208
Hallock Municipal Airport	HCO	3,615	-	-	1,448	-	-	-	3,291	1,772	5,012	51	-
Range Regional Airport	HIB	29,172	-	1,293	-	956	80	2,459	10,188	23,773	23,773	6,792	3,396
McGregor - Isedor Iverson Airport	HZX	5,439	-	-	-	-	-	245	3,354	2,330	2,366	2,213	1,104
Falls International Airport	INL	16,626	-	-	-	6,452	80	-	6,947	16,210	3,937	18,526	695
Moorhead Municipal Airport	JKJ	10,234	-	1,426	-	-	-	-	7,812	3,848	4,853	4,541	2,266
Mora Municipal Airport	JMR	12,827	-	-	-	2,045	-	292	3,969	11,195	6,312	5,906	2,947
St. James Municipal Airport	JYG	5,648	-	-	-	745	-	-	5,114	1,278	1,278	5,114	-
Litchfield Municipal Airport	LJF	11,281	-	384	-	-	-	487	6,076	6,076	1,215	8,506	2,430
Little Falls-Morrison County Airport	LXL	12,416	-	416	-	-	40	-	2,340	10,532	5,358	5,013	2,501
Luverne Municipal Airport - Quentin Aanenson Field	LYV	13,288	-	-	-	-	-	456	5,498	8,247	4,123	4,123	5,498
Maple Lake Municipal Airport	MGG	14,303	-	1,124	-	-	-	-	14,347	1,080	3,085	3,857	8,485
Jackson Municipal Airport	MJQ	8,051	-	-	-	-	8	253	2,494	5,818	8,312	-	-
Mankato Regional Airport - Sohler Field	MKT	100,330	8,398	13,588	10,636	5,025	400	5,385	97,759	46,004	28,753	43,129	71,882
Southwest Minnesota Regional-Marshall/Ryan Field	MML	13,708	5,553	2,022	7,034	-	80	427	10,953	17,871	21,618	4,324	2,882
Morris Municipal Airport - Charlie Schmidt Field	MOX	4,025	-	1,379	1,439	510	5	219	6,061	1,515	6,440	758	379
Montevideo-Chippewa County Airport	MVE	14,108	-	615	-	-	16	780	7,760	7,760	13,968	1,242	310

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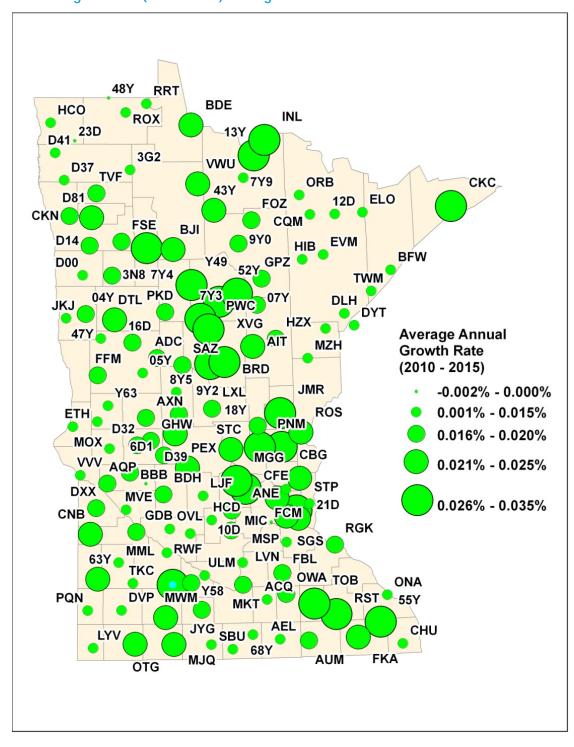
			20	30 GA and M	Military Opera	itions Fored	cast						
Almost Name	ID.			А	ircraft Type				Operat	tion Type	Оре	eration Purpo	se
Airport Name	ID	SEP	JET	MEP	TP	LSA	MIL	ОТН	Local	Itinerant	Business	Leisure	Training
Windom Municipal Airport	MWM	10,639	-	672	-	-	-	-	5,655	5,655	5,655	4,524	1,131
Moose Lake-Carlton County Airport	MZH	5,649	-	-	-	-	-	1,009	2,996	3,662	2,663	1,997	1,997
Winona Municipal Airport - Max Conrad Field	ONA	9,677	957	1,451	606	429	20	368	10,806	2,702	8,105	2,702	2,702
Orr Regional Airport	ORB	3,056	-	-	-	-	-	-	1,222	1,834	917	2,139	-
Worthington Municipal Airport	OTG	11,902	-	1,567	-	-	408	-	5,551	8,326	6,939	6,939	-
Olivia Regional Airport	OVL	3,162	-	-	-	-	-	1,239	2,597	1,804	1,832	1,714	855
Owatonna Degner Regional Airport	OWA	40,623	-	1,527	-	-	200	968	20,857	22,461	18,031	16,870	8,418
Paynesville Municipal Airport	PEX	6,945	-	283	-	-	-	180	4,963	2,445	741	5,926	741
Park Rapids Municipal Airport - Konshok Field	PKD	19,385	-	2,086	-	-	20	-	10,746	10,746	8,946	8,370	4,176
Princeton Municipal Airport	PNM	18,013	-	709	-	524	240	-	9,743	9,743	2,923	14,615	1,949
Pipestone Municipal Airport	PQN	9,868	-	564	-	-	24	-	5,228	5,228	10,456	-	-
Pine River Regional Airport	PWC	15,754	575	698	728	-	-	442	10,918	7,279	1,820	13,647	2,729
Red Wing Regional Airport	RGK	14,550	2,050	746	519	-	561	-	5,528	12,899	13,820	3,685	921
Rush City Regional Airport	ROS	33,176	-	518	-	766	8	328	17,398	17,398	3,480	13,919	17,398
Roseau Municipal Airport - Rudy Billberg Field	ROX	10,855	-	-	-	-	-	810	1,166	10,498	10,498	1,166	-
Warroad International Memorial Airport	RRT	6,864	666	404	2,532	-	-	256	7,506	3,217	8,579	1,608	536
Rochester International Airport	RST	44,209	3,319	2,014	-	993	187	426	29,666	21,482	40,918	7,672	2,557
Redwood Falls Municipal Airport	RWF	11,440	-	3,087	-	1,522	240	1,958	12,408	5,839	5,474	12,408	365
Staples Municipal Airport	SAZ	11,790	-	646	-	-	-	819	6,628	6,628	2,651	9,279	1,326
Blue Earth Municipal Airport	SBU	12,896	-	-	2,146	761	-	-	11,852	3,951	7,111	7,111	1,580
South St. Paul Municipal Airport - Fleming Field	SGS	83,660	-	3,268	8,185	1,450	-	1,243	63,573	34,232	37,166	53,793	6,846
St. Cloud Regional Airport	STC	44,626	6,315	2,395	-	-	2,303	-	41,730	13,910	16,692	11,128	27,820
Tracy Municipal Airport	TKC	3,951	-	-	-	-	-	-	2,370	1,580	1,580	1,975	395
Dodge Center Municipal Airport	TOB	12,517	-	-	-	423	-	725	3,416	10,248	4,099	4,099	5,466
Thief River Falls Regional Airport	TVF	27,472	6,232	1,261	2,631	-	80	799	13,082	25,394	11,543	7,695	19,238
Two Harbors Municipal - Richard B. Helgeson Field	TWM	10,310	-	268	-	396	-	1,019	7,195	4,797	1,199	8,394	2,398
New Ulm Municipal Airport	ULM	9,756	-	1,869	975	-	8	-	9,457	3,152	8,826	2,522	1,261
Ortonville Municipal Airport - Martinson Field	VVV	6,497	-	-	-	-	-	-	1,949	4,548	3,249	2,599	650
Waskish Municipal Airport	VWU	306	-	-	-	-	-	-	199	107	46	260	-
Longville Municipal Airport	XVG	10,881	-	611	-	-	-	-	4,022	7,470	575	10,917	-
Walker Municipal Airport	Y49	12,146	-	922	-	2,727	-	-	11,056	4,738	3,159	12,636	-
Sleepy Eye Municipal Airport	Y58	1,574	-	-	525	372	-	479	1,741	1,209	1,228	1,149	573
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	5,351	-	-	-	-	-	190	1,847	3,694	2,306	2,158	1,077

Source: HNTB Analysis



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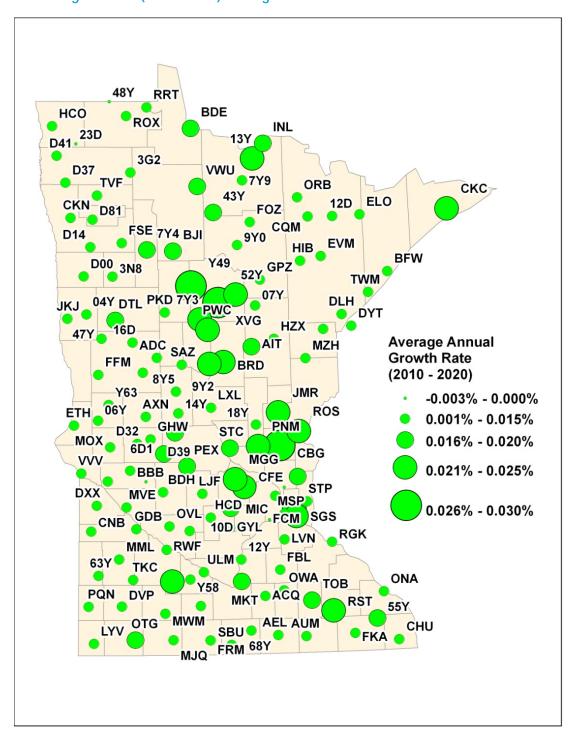
Figure C-30: (2010 - 2015) Average Annual Growth Rate of Based Aircraft





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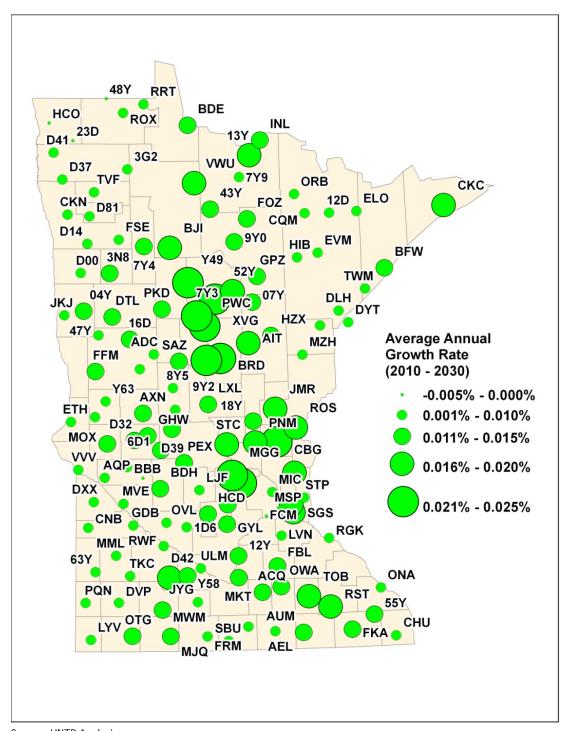
Figure C-31: (2010 - 2020) Average Annual Growth Rate of Based Aircraft





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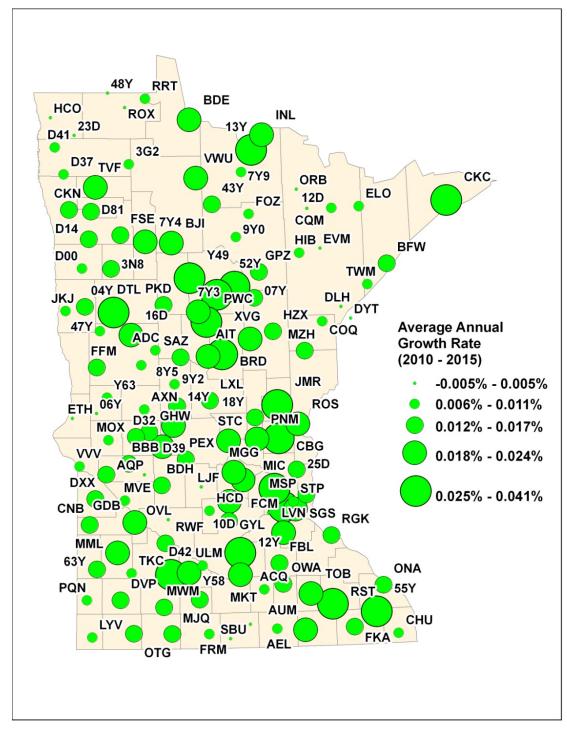
Figure C-32: (2010 - 2030) Average Annual Growth Rate of Based Aircraft





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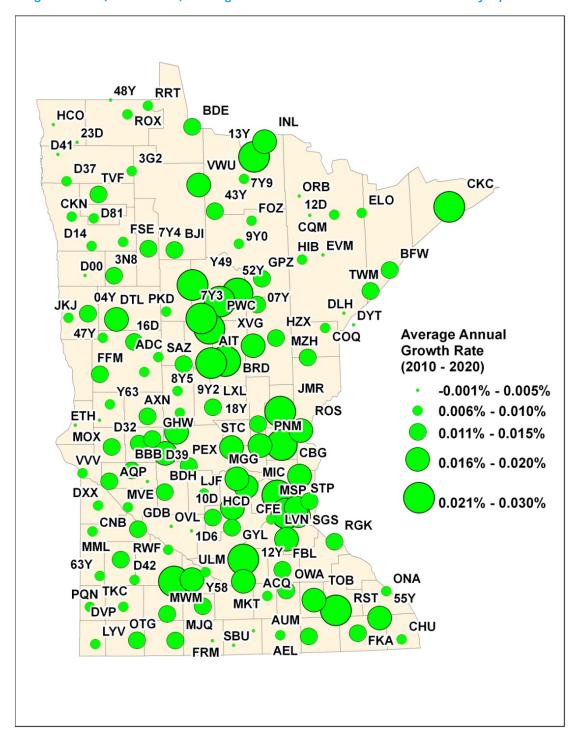
Figure C-33: (2010 – 2015) Average Annual Growth Rate of GA and Military Operations





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Figure C-34: (2010 – 2020) Average Annual Growth Rate of GA and Military Operations





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Figure C-35: (2010 – 2030) Average Annual Growth Rate of GA and Military Operations

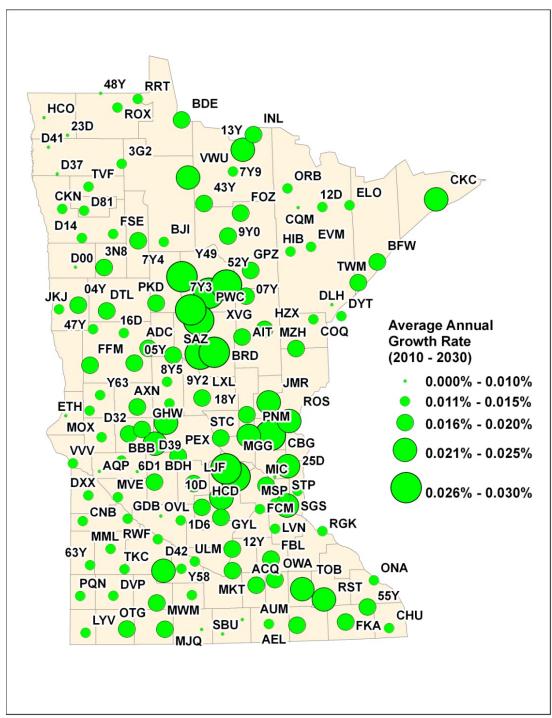




Table C-29: General Aviation Peak Hour Activity Level Forecast

GA Peak Hour Operations					
Airport Name	ID	2010	2015	2020	2030
Crystal Airport	MIC	27	31	34	39
Airlake Airport	LVN	23	26	27	31
Lake Elmo Airport	21D	18	19	20	23
St. Paul Downtown Airport - Holman Field	STP	42	44	49	55
Anoka County/Blaine Airport - Janes Field	ANE	31	32	33	36
Flying Cloud Airport	FCM	42	41	44	52
Minneapolis-St.Paul Int'l-Wold Chamberlain	MSP	6	8	8	8
Hawley Municipal Airport	04Y	5	6	6	7
Henning Municipal Airport	05Y	2	2	2	3
Herman Municipal Airport	06Y	2	2	2	2
Hill City-Quadna Mountain Airport	07Y	1	1	1	1
Winsted Municipal Airport	10D	7	8	8	10
Tower Municipal Airport	12D	5	5	5	6
Le Sueur Municipal Airport	12Y	9	10	11	13
Littlefork Municipal Airport - Hanover Airport	13Y	2	2	2	2
Long Prairie Municipal Airport - Todd Field	14Y	4	5	5	6
Perham Municipal Airport	16D	5	5	5	6
Milaca Municipal Airport	18Y	7	7	8	10
Hector Municipal Airport	1D6	5	5	5	6
Karlstad Municipal Airport	23D	1	1	1	1
Murdock Municipal Airport	23Y	1	1	1	1
Forest Lake Airport	25D	6	6	7	9
Grygla Municipal Airport - Mel Wilkens Field	3G2	1	1	1	1
Mahnomen County Airport	3N8	3	3	3	4
Northome Municipal Airport	43Y	1	1	1	1
Pelican Rapids Municipal Airport - Lyon's Field	47Y	2	2	2	2
Piney-Pinecreek Border Airport	48Y	1	1	1	1
Remer Municipal Airport	52Y	1	1	1	2
Rushford Municipal Airport	55Y	1	1	2	2
Tyler Municipal Airport	63Y	1	1	1	1
Wells Municipal Airport	68Y	3	3	3	4
Brooten Municipal Airport	6D1	4	4	4	6
Backus Municipal Airport	7Y3	2	2	2	3



GA Peak Hour Operations					
Airport Name	ID	2010	2015	2020	2030
Bagley Municipal Airport	7Y4	1	1	1	2
Big Falls Municipal Airport	7Y9	1	1	1	1
Clarissa Municipal Airport	8Y5	1	1	1	1
Bowstring Airport	9Y0	1	1	1	2
East Gull Lake Airport	9Y2	1	1	1	1
Waseca Municipal Airport	ACQ	4	4	4	5
Wadena Municipal Airport	ADC	3	4	4	5
Albert Lea Municipal Airport	AEL	16	17	18	20
Aitkin Municipal Airport - Steve Kurtz Field	AIT	13	14	15	19
Appleton Municipal Airport	AQP	1	1	1	2
Austin Municipal Airport	AUM	16	18	18	22
Alexandria Municipal Airport - Chandler Field	AXN	16	17	18	23
Benson Municipal Airport - Veterans Field	BBB	3	3	3	4
Baudette International Airport	BDE	7	8	8	10
Willmar Municipal Airport - John L. Rice Field	BDH	11	12	13	16
Silver Bay Municipal Airport - Wayne Johnson	BFW	2	2	2	3
Bemidji Regional Airport	BJI	5	6	6	7
Brainerd Lakes Regional Airport	BRD	22	25	28	37
Cambridge Municipal Airport	CBG	11	12	14	18
Buffalo Municipal Airport	CFE	14	16	17	23
Houston County Airport	CHU	2	2	2	3
Grand Marais-Cook County Airport	CKC	2	2	2	3
Crookston Municipal Airport - Kirkwood Field	CKN	18	19	19	23
Canby Municipal Airport - Myers Field	CNB	4	5	5	6
Cloquet-Carlton County Airport	COQ	6	7	7	8
Cook Municipal Airport	CQM	4	4	4	4
Norman County/Ada/Twin Valley Airport	D00	2	2	2	2
Fertile Municipal Airport	D14	6	6	6	8
Starbuck Municipal Airport	D32	1	1	1	1
Warren Municipal Airport	D37	2	2	2	2
Sauk Centre Municipal Airport	D39	4	4	4	5
Stephen Municipal Airport	D41	3	3	3	4
Springfield Municipal Airport	D42	2	2	2	2
Red Lake Falls Municipal Airport	D81	2	2	2	2
Duluth International Airport	DLH	25	25	25	28



GA Peak Hour Operations						
Airport Name	ID	2010	2015	2020	2030	
Detroit Lakes Municipal Airport - Wething Field	DTL	10	11	12	14	
Slayton Municipal Airport	DVP	2	2	2	2	
Lac Qui Parle County Airport - Bud Frye Field	DXX	1	1	1	2	
Duluth Sky Harbor Airport	DYT	9	9	9	11	
Ely Municipal Airport	ELO	5	5	5	6	
Wheaton Municipal Airport	ETH	1	1	1	1	
Eveleth-Virginia Municipal Airport	EVM	5	5	5	6	
Faribault Municipal Airport	FBL	12	12	13	16	
Fergus Falls Municipal Airport-Einar Mickelson Fld	FFM	6	6	7	8	
Preston - Fillmore County Airport	FKA	4	4	5	6	
Bigfork Municipal Airport	FOZ	2	2	2	2	
Fairmont Municipal Airport	FRM	5	5	5	5	
Fosston Municipal Airport	FSE	6	6	6	8	
Granite Falls Muni-Lenzen-Roe Memorial Fld	GDB	3	4	4	5	
Glenwood Municipal Airport	GHW	3	3	3	4	
Grand Rapids/Itasca Co-Gordon Newstrom Fld	GPZ	12	13	14	17	
Glencoe Municipal Airport - Vernon Perschau Field	GYL	7	7	8	10	
Hutchinson Municipal Airport - Butler Field	HCD	8	8	8	10	
Hallock Municipal Airport	HCO	3	3	3	3	
Range Regional Airport	HIB	17	17	18	21	
McGregor - Isedor Iverson Airport	HZX	3	3	3	4	
Falls International Airport	INL	10	11	12	14	
Moorhead Municipal Airport	JKJ	6	6	6	7	
Mora Municipal Airport	JMR	6	7	7	9	
St. James Municipal Airport	JYG	3	3	3	4	
Litchfield Municipal Airport	LJF	6	6	6	8	
Little Falls-Morrison County Airport	LXL	6	6	7	8	
Luverne Municipal Airport - Quentin Aanenson Field	LYV	7	7	7	9	
Maple Lake Municipal Airport	MGG	6	6	7	10	
Jackson Municipal Airport	MJQ	4	4	4	5	
Mankato Regional Airport - Sohler Field	MKT	64	70	75	90	
Southwest Minnesota Regional-Marshall/Ryan Field	MML	14	16	16	18	
Morris Municipal Airport - Charlie Schmidt Field	MOX	4	4	4	5	
Montevideo-Chippewa County Airport	MVE	8	8	8	10	
Windom Municipal Airport	MWM	5	6	6	7	



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GA Peak Hour Operations					
Airport Name	ID	2010	2015	2020	2030
Moose Lake-Carlton County Airport	MZH	3	3	3	4
Winona Municipal Airport - Max Conrad Field	ONA	7	7	7	8
Orr Regional Airport	ORB	2	2	2	2
Worthington Municipal Airport	OTG	6	7	7	9
Olivia Regional Airport	OVL	2	2	2	3
Owatonna Degner Regional Airport	OWA	19	20	21	27
Paynesville Municipal Airport	PEX	3	3	4	5
Park Rapids Municipal Airport - Konshok Field	PKD	10	10	11	13
Princeton Municipal Airport	PNM	8	8	9	12
Pipestone Municipal Airport	PQN	5	5	5	7
Pine River Regional Airport	PWC	7	8	9	11
Red Wing Regional Airport	RGK	9	9	10	12
Rush City Regional Airport	ROS	14	15	16	22
Roseau Municipal Airport - Rudy Billberg Field	ROX	6	6	6	7
Warroad International Memorial Airport	RRT	5	6	6	7
Rochester International Airport	RST	16	18	19	25
Redwood Falls Municipal Airport	RWF	9	10	10	11
Staples Municipal Airport	SAZ	6	6	7	8
Blue Earth Municipal Airport	SBU	9	9	9	10
South St. Paul Municipal Airport - Fleming Field	SGS	39	42	46	61
St. Cloud Regional Airport	STC	49	55	58	72
Tracy Municipal Airport	TKC	2	2	2	2
Dodge Center Municipal Airport	TOB	6	6	7	9
Thief River Falls Regional Airport	TVF	19	21	21	24
Two Harbors Municipal - Richard B. Helgeson Field	TWM	6	6	6	7
New Ulm Municipal Airport	ULM	6	6	7	8
Ortonville Municipal Airport - Martinson Field	VVV	3	3	3	4
Waskish Municipal Airport	VWU	0	0	0	0
Longville Municipal Airport	XVG	4	5	5	7
Walker Municipal Airport	Y49	6	7	8	10
Sleepy Eye Municipal Airport	Y58	1	2	2	2
Elbow Lake Municipal Airport-Pride of the Prairie	Y63	3	3	3	3



FORECAST TECHNICAL REPORT

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Appendix D



COMMERCIAL AIR SERVICE TECHNICAL REPORT

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Appendix D



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INTRODUCTION

The purpose of the Assessment of Commercial Air Service (the "Plan") in Minnesota (the "State") is to provide an overview of the current air service conditions in the State and recommend overall strategies for their enhancement. The Plan includes an overview of airline trends, risk factors associated with the changing airline business and operating models and potential future elimination of the Essential Air Service program, airport profiles, and general strategies for retention of air service including community involvement. Concurrent studies are underway by others that are also looking at commercial air service in MN. The primary purpose of this study is to identify from a system perspective any major changes that are likely to occur in commercial service in MN that could require a change in focus for the goals and funding priorities for the state aviation system plan.

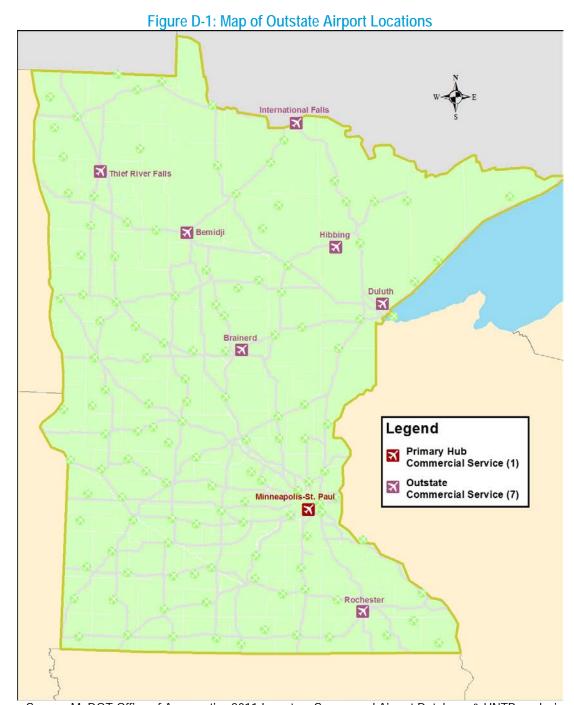
Air service characteristics in Minnesota can be divided into two broad categories of the Minneapolis-St. Paul or Twin Cities metropolitan area ("The Cities"), and Greater Minnesota ("Outstate"). In turn, Outstate airports can be further divided into two major categories. The first centers on commercial airports with less than 100,000 enplanements per year and scheduled commercial air service by one or no air carriers. These will be referred to as small Outstate airports. The second points to airports enplaning more than 100,000 annual passengers and served by multiple air carriers flying to at least two major domestic hubs. These will be referred to as large Outstate airports. Pease refer to Table D-1 for the list of Outstate airports included in this study. Please refer to Figure D-1 for a map of the Outstate airport locations.

Table D-1: List of Outstate Airports^{i, ii}

Airport	City/County	IATA ¹ Code	2010 Enplaned Passengers ²
Airports with less than 100,000 Enplaned	Passengers		
Bemidji Regional Airport	Bemidji/Beltrami	BJI	21,498
Brainerd Lakes Regional Airport	Brainerd/Crow Wing	BRD	16,404
Falls International Airport	International Falls/Koochiching	INL	14,051
Range Regional Airport	Chisholm/St. Louis	HIB	11,227
St. Cloud Regional Airport	St. Cloud/Stearns	STC	C
Thief River Falls Regional Airport	Thief River Falls/Pennington	TVF	2,482
Airports with more than 100,000 Enplaned	d Passengers		
Duluth International Airport	Duluth/St. Louis	DLH	150,556
Minneapolis-St. Paul International Airport	Minneapolis and St. Paul/Hennepin	MSP	15,512,487
Rochester International Airport	Rochester/Olmsted	RST	120,063



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Source: MnDOT Office of Aeronautics 2011 Inventory Survey and Airport Database & HNTB analysis



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FACTOR AFFECTING AVIATION DEMAND AT OUTSTATE AIRPORTS

The Economics of Air Service

The airline industry is a major economic force, both in terms of its own operations and its impacts on related industries such as aircraft manufacturing and tourism. The US airline industry has approximately 100 certificated passenger airlines operating over 11 million flight departures per year and carrying over one-third of the world's total air traffic. The economic impacts of the airline industry range from its direct effects on airline employment, the aircraft manufacturing industry, airports, support functions such as maintenance, catering, FBO's etc. and tourism. It is also impacts every other industry relying on commercial air transportation on a daily basis. Commercial aviation contributes approximately 8.0 percent of the U.S. Gross Domestic Product (U.S. GDP).

In the U.S., the airline industry has been in a financial crisis for over a decade. The industry crisis escalated in the aftermath of the events of 9/11, which resulted in layoffs and spending cutbacks. The airlines, however, were in serious trouble before that point as the start of an economic downturn already had negatively affected the volume of business travel and average fares. At the same time, airline labor costs and fuel prices were increasing yearly with aging fuel inefficient fleet. To make matters worse, airlines were faced with deteriorating labor/management relations, aviation infrastructure constraints that led to increasing congestion, flight delays and dissatisfied customers due to perceptions of poor service in general.

The growth of low-fare air travel options combined with a reduced willingness by business travelers to pay higher air fares charged by the network carriers played a major role in contributing to the poor financial performance of traditional network airlines. To address these financial pressures airlines have adjusted their business models and operating approaches. Ancillary fees such as baggage check-in fees and reservation change fees have provided some relief but the volatility of jet fuel prices in the past few years continue to place pressures on airline profitability. In response to these financial pressures, US airlines have made substantial reductions and shifts in the level of seating capacity that carriers are flying into various airports.

In the State, the evidence of the airline industry's financial crisis is evident. On an aggregate basis, total passengers at Outstate airports have been declining at an average annual rate of -2.5 percent per year. Despite a decline in seat capacity across the national air transportation system, load factors at some Outstate airport are critically low. Most airports are served commercially via flights paid through federal grants subsidizing the cost of their operations and rely on one carrier and their business decisions to carry their passengers. However, with a significant threat that the Essential Air Service program will be eliminated or greatly reduced in the long-term, air service demand needs to increase at Outstate airports and reach a level where these facilities can be self-sustaining both financially and operationally.

Driving Distance to Minneapolis/St. Paul International Airport

Driving distances between Minneapolis/St. Paul International Airport (MSP) and most Outstate airports are long. Excluding traffic, the travel times can range from one and a half to six hours. However, with a lack of competition and exceedingly high fares at the Outstate airports, the population outside of the Twin Cities area is increasingly willing to drive long distances for lower fares and more convenient travel schedules. The leakage rate at some Outstate airports exceeds 80.0 percent. in part due, given the ease of access to the The Cities through an efficient system of Interstates and Highways. Table D-2 details the driving distance and travel time between Outstate airports and MSP. Additionally, the driving distance and travel time from Outstate airports to the closest airport with service by multiple



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airlines (excluding MSP) is also included. In many instances, these airports may provide lower fares on certain markets and more convenient access.

Table D-2: Driving Distances from Small Outstate Airports to MSP and Alternative Airports

From:	To:	Preferred Route	Driving Distance (in miles)	Travel Time (in hours)
Bemidji Regional Airport	MSP	MN-64 S and US-10 E	233	4:00
Alternative	DLH	US-2 E	150	2:55
Brainerd Lakes Regional Airport	MSP	US-169S	143	3:00
Alternative	DLH	MN-210 E	117	2:20
Falls International Airport	MSP	US-53 S and I-35 S	296	5:00
Alternative	DLH	US-53 S	156	2:45
Range Regional Airport	MSP	I-35 S	205	4:00
Alternative	DLH	US-53 S	66	1:10
St. Cloud Regional Airport	MSP	I-94 E and I-494 S	77	1:30
Alternative	RST*	US-10 E and US-52 S	155	2:50
Thief River Falls Regional Airport	MSP	US-59 S and US-10 E	310	6:00
Alternative	DLH	US-2 E	238	4:30

^{*} The driving distance between St. Cloud Regional Airport and Duluth International Airport (DLH) is closer in mileage (148 miles), however, Rochester International Airport (RST) offers a shorter drive time.

Regional Jets: The 50-Seater

High jet-fuel prices and a depressed demand for air travelers are reversing the trend of scheduling 50-seat regional jets (RJs) to supplement services on mainline jets on trunk routes across the U.S. RJs were never huge profit makers in the best of times throughout the 1990s. They were promoted as economical substitutes for 110- to 140-seat jetliners on thin-demand routes because their ownership and operating costs were lower per mile flown. They were also marketed as more consumer-friendly than smaller, noisier, slower and less comfortable turboprop planes. Airlines invested heavily in them starting in the late 1990s, primarily to feed more travelers from small markets into their hubs and onto their more profitable mainline flights.

In 2009, one in four commercial takeoffs was made by a 50-seat or smaller RJ. But the number of small RJs in service has begun to drop given economic conditions. Since these aircraft are no longer manufactured, as the average age of this fleet advances, retirements and groundings are inevitable. Also, with the advent of more efficient and comfortable RJ's with 70-110 seating configurations, airlines are able to fly these jets more economically on a



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per-seat-mile basis. Some of these jets are configured to allow passengers to store rolling hand luggage in upper head bins. Airlines are capitalizing on their increased range and fuel efficiency.

Delta Air Lines (Delta) halted the operations of 70 50-seat RJs from its Delta Connection fleet in 2011 and more reductions are likely. Outstate airports are currently served by 50-seat RJs in addition to 34-seat turboprops. The RJs are slowly being phased out and service on the 34-seat Saab 340B type has been retired. As these aircraft form the backbone of Delta's fleet serving Outstate airports, it is important to understand the risks posed by Delta's fleet plans in the short-to-medium term.

ASSESSMENT OF AIR SERVICES: CURRENT CONDITIONS

Small Outstate Airports

Background

Minnesota's small Outstate airports are a lifeline connecting these small communities and their businesses to the Cities, the U.S. and the world. These airports include Bemidji Regional Airport (BJI), Brainerd Lakes Regional Airport (BRD), Falls International Airport in International Falls (INL), Range Regional Airport in Hibbing (HIB), St. Cloud Regional Airport (STC) and Thief River Falls Regional Airport (TVF). Combined, these airports offered 10,000 departures and served approximately 142,000 passengers in 2010. Also in common, they all have a single non-stop scheduled destination with MSP on one carrier, Delta operated by Delta Connection utilizing either Mesaba Airlines (Mesaba) or Pinnacle Airlines (Pinnacle) to provide services. Additionally, all of these markets are served by two fleet types: the Saab 340B with 34 seats and the Canadair CRJ-200 with 50-seats.

Grants from the federal Essential Air Service Program (EAS) help pay for flying to three of the six small Outstate airports: TVF, HIB and INL. Nationwide, currently 153 communities, many of them rural, are served via the EAS program which provides subsidies to airlines incentivizing them to fly to airports which would otherwise be bypassed under normal market conditions and help connect them to the national air transportation system. EAS was created after the airline industry was deregulated in 1978 and has a current annual budget of \$188 million. Through the process of the debates leading up to the most recent FAA Reauthorization bill major changes were proposed to both the funding and overall size and scope of the EAS program. While many of the reductions were avoided for the FAA Reauthorization Act of 2012, industry experts anticipate major reductions or elimination of the EAS program in the continental US within the next 15 – 20 years.

Small Outstate airports, on an aggregate level, have been steadily losing capacity (measured in seats) as well as total passengers. Since 2005, both of these measures have been declining annually except for 2007 when there was a rise in total passenger levels of 4.1 percent. Thereafter, total passengers declined in the year-over-year periods ending in 2008, 2009 and 2010 by -9.0 percent, -16.9 percent and -10.2 percent, respectively. Recent years have been especially volatile due to a fall in demand in response to a recessionary economic period beginning in 2008 and the reduction in capacity in response to the rise in fuel prices. These percentages are weighted heavily with the loss of commercial air service at St. Cloud. For example, the decline in total passengers in the period ending in 2010 would have measured -3.9 percent if STC was excluded from the calculation.

The reduction in passengers and the loss in seating capacity becomes a downward spiral. Given the passenger numbers and overall market conditions at the small Outstate airports, Delta responded accordingly by scheduling



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seat capacity at a decreased level. For the year-over-year periods ending in 2008, 2009 and 2010, Delta reduced seats at the small Outstate airports (excluding STC in 2010) by -5.8 percent, -12.2 percent and -2.6 percent respectively. In turn passengers will travel to larger airports in order to get the destinations, fares, and frequencies desired, thereby further reducing demand at the small Outstate airports.

Load Factors are a measure of the number of seats occupied by passengers on a percentage basis for a market or group of markets. For the small Outstate airports (excluding STC in 2010), load factors on an aggregate level have slightly declined over five years at 49.8 percent in 2005, 46.6 percent in 2006, 46.1 percent in 2007, 42.9 percent in 2008, 42.3 percent in 2009 and 46.4 percent in 2010. BJI recorded the highest load factor of the small Outstate airports in 2010 with 59.3 percent of its seats filled. Airlines look at load factors as an important measure of a market's success. An airline's ability to schedule flights to attract the most customers can have a deep effect on passenger volume and consequently on load factors.

Despite federal subsidies under the EAS grant, there is a minimum load factor threshold which airlines such as Delta deem the difference between breaking even and losing money on these markets. With high operating costs, low frequency, alternative airports for passengers at a driving distance and high fares, airlines have recently vocalized the possibility of dropping EAS services unless funding is increased to match market conditions. Delta has publicly stated that it will drop all the small Outstate airports it serves unless there are increases in federal subsidies under the EAS program.

Please see **Table D-3** for detailed 2010 air service statistics for individual small Outstate airports. In addition, Sub-Appendix A and Sub-Appendix B show historical air service data for individual small Outstate airports as follows:

- 1997 2010 Total Departures
- 1997 2010 Total Seats
- 1997 2010 Total Passengers
- 1997 2010 Total Load Factors
- 1997 2010 Available Seat Miles (ASMs) (000)
- 1997 2010 Revenue Passenger Miles (RPMs) (000)
- 1990 -2010 Origin-Destination Passengers
- 1990 2010 Average Fares
- 1990 -2010 Yield



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Table D-3: Small Outstate Airports 2010 Air Service Statistics

Metric	BJI	BRD	HIB	INL	STC	TVF
Departures	2,037	1,769	3,166	1,614	0	1,206
Seats	73,253	63,769	111,238	56,715	0	41,004
On-Board Passengers	42,754	33,791	32,856	27,902	0	5,004
Available Seat Miles (ASMs)(000s)	14,559	9,298	21,680	15,498	0	6,742
Revenue Passenger Miles (RPMs)(000s)	8,504	5,752	8,183	8,153	0	826
Load Factors	58%	62%	38%	53%	0%	12%
Average Fares	\$242	\$213	\$212	\$249	\$0	\$216
Yield (cents \$)	0.21	0.19	0.17	0.22	0.00	0.19

Source: DOT T-100; DOT 10% Ticket Sample Survey

Delta Air Lines Announced Service Cuts in the State

Delta notified the U.S. Department of Transportation (DOT) on July 15, 2011, that it plans to adjust flying in 24 small markets in conjunction with the retirement of its Saab 340B fleet. According to the airline, this move would help them stop \$14.0 million in annual losses achieved through services to these markets. Five of the markets on the list are airports in the State including TVF, HIB, INL, BRD and BJI.

According to Delta, flights in these markets on average depart with a 52.0 percent load factor with some locations as low as 12.0 percent. The carrier compared these to a U.S. domestic system load factor of 83.0 percent in 2010. The carrier went on to state that weak demand in some markets had led to flights occasionally operating with no passengers on board. Please see **Table D-4** for detailed information regarding markets and load factors planned for adjustment.



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Table D-4: Delta Air Lines Essential Air Service Market Change Summary (2010 Load Factors)

Chief River Falls, MN TVF	EAS subsidized	12.0% load factor
Greenville, MS GLH	EAS subsidized	27.6% load factor
Devils Lake, ND DVL	EAS subsidized	30.3% load factor
Watertown, SD ATY	EAS subsidized	35.0% load factor
Muscle Shoals, AL MSL	EAS subsidized	35.7% load factor
Fort Dodge, IA FOD	EAS subsidized	39.1% load factor
Hibbing, MN HIB	EAS subsidized	39.2% load factor
Alpena, MI APN	EAS subsidized	39.5% load factor
Tupelo, MS TUP	EAS subsidized	41.0% load factor
Jamestown, ND JMS	EAS subsidized	42.1% load factor
Mason City, IA MCW	EAS subsidized	45.9% load factor
Pierre, SD PIR	Not EAS subsidized	47.4% load factor
Iron Mountain, MI IMT	EAS Subsidized	48.7% load factor
Sioux City, IA SUX	Not EAS subsidized	51.4% load factor
International Falls, MN INL	EAS subsidized	52.5% load factor
Brainerd, MN BRD	Not EAS subsidized	52.6% load factor
Hattiesburg, MS PIB	EAS subsidized	53.7% load factor
Escanaba MI ESC	EAS subsidized	55.2% load factor
Aberdeen, SD ABR	Not EAS subsidized	55.6% load factor
Pellston MI PLN	Not EAS subsidized	58.5% load factor
Bemidji, MN BJI	Not EAS subsidized	59.3% load factor
Sault Ste Marie MI CIU	EAS subsidized	60.0% load factor
Waterloo, IA ALO	Not EAS subsidized	61.4% load factor
Butte, MT BTM	Not EAS subsidized	65.3% load factor

Source: Delta Air Lines

The carrier stated in their website that numerous measures have been implemented system-wide to reduce costs including their intention to decrease seat capacity by 4.0 percent and retire 140 airplanes from their mainline fleet and their recent reduction in properties costs at airport and cargo markets equaling \$80 million.

Despite cost cutting announcements, on August 22, 2011, Delta announced the purchase 100 Boeing 737-900ER aircraft in a bid to replace its ageing 757-200/300 fleet, but the carrier has delayed a decision on 100 additional narrowbody aircraft. This selection will be pushed to 2012 or 2013 as the carrier opted to continue operating its fleet of Airbus A319s, A320s and Boeing 737-700/800s. Delta issued a request for proposal to airframers in January 2011 for up to 200 narrowbody aircraft to replace its older narrowbody fleet of 757-200s, A319/A320s and DC-9 types



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starting in 2013. None of these aircraft will be utilized for regional services to Outstate airports and are unrelated to Delta's decision to retire their Saab 340B turboprop airplanes or decrease service from CR200's.

Impact of Delta Air Lines' Announcement to EAS Subsidized Communities

The notification provides the DOT the opportunity to select a new carrier to begin service in affected EAS communities within a 90-day period. Delta will continue to serve the affected communities through its Delta Connection partners until the DOT selects a replacement carrier and appropriate funding is available. According to Delta, in some cities, the carrier is coordinating with other carriers to bid on the routes. In addition, Delta will continue service in some subsidized and non-subsidized markets, but the subsidy rate must be higher in order for Delta to fly larger regional jets on the routes in question.

Given that Delta serves INL, HIB and TVF exclusively on Saab 340B aircraft operated by Delta Connection, these markets will lose Delta service as their EAS funding dates expire or when a new carrier is found as stated above. For BRD and BJI, Delta is expected to keep service on 50-seat Canadair CRJ-200 aircraft. These airports do, however, have a mixed schedule of CRJ-200s and Saab 340Bs depending on the season. Whether Delta backfills the Saab 340B services in these markets with additional CRJ-200s remains to be addressed by the carrier. If they do not, the risk is high as a limited schedule of flights will likely cause a reduction in demand sought by business traffic accustomed to frequency and may lead to a reduction in load factors. A market-by-market assessment of small Outstate airports follows this section and looks at markets individually.

AIRPORT PROFILES: SMALL OUTSTATE AIRPORTS

Bemidji Regional Airport

BJI is a public use airport located three miles northwest of the central business district of the City of Bemidji (Bemidji). The airport has a single terminal and two active asphalt runways, the longest measuring 7,002 feet. Amenities include free overnight parking, Wi-Fi access throughout the terminal facility, in-terminal rental car agencies, access to taxi cab services and access to county transit. BJI also houses a full-service Fixed Base Operator (FBO) called *Bemidji Aviation*. Services provided include fuel, maintenance, hanger rental, plane rental, flight training, car rental, pilot supplies and a pilot lounge.

In 2009, BJI transitioned from being jointly owned and operated by the city of Bemidji and Beltrami County to ownership and operation by an Airport Authority, with its own tax levy and funding responsibilities. This provides more transparency to the airport's financial structure and costs. BJI has undergone some major capital improvements in the past five years, including the complete reconstruction or rehabilitation of all runways and taxiways. Recently, the airport has completed a ramp rehabilitation project as a part of the Federal Recovery Act program; and the rehabilitation and modernization of the 20 year old terminal and aircraft rescue and firefighting facility (ARFF) are underway.

Bemidji is located close to the Mississippi River and offers access to the Minnesota north woods region. Bemidji is situated on the shores of Lake Bemidji and is the county seat of Beltrami County. According to the 2010 Census, Bemidji had a city population of 13,431; and Beltrami County had a population of 44,442. Four-lane U.S. Route 2, U.S. Route 71 and State Highway 197 are three of the main routes into the city. State Highways 89 and 371 are also in close proximity.



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Bemidji is home to various private and public colleges and universities and has an active park and recreation community, given its proximity to 400 lakes (within 25 miles), 500 miles of snowmobile trails, and 100 miles of cross country ski trails. Some of the larger employment sectors in the region include state and local government, education and related services and retail.

BJI offers service to MSP three times daily, a portion of the year, and utilizes that hub as a connecting point to other U.S. and international destinations. U.S. DOT Origin-Destination (O-D) survey data from 2010 indicate the top five largest markets from BJI to be Chicago, Minneapolis/St. Paul, Denver, Phoenix and Orlando. From 1999 to 2010, BJI's total O-D passengers have ranged from approximately 40,000 to 55,000 (see Sub-Appendix A-5 for more details). BJI's commercial air service is provided by two carriers, Mesaba and Pinnacle (seasonally), both operating as Delta Connection. Equipment includes 34-seat Saab/Fairchild 340 aircraft and 50-seat Canadair CRJ-200 regional jets. See Table D-5 for detailed schedule information.

Table D-5: Daily Week Day Bemidji Regional Airport Schedule (effective July 1, 2011)

Flight No.	Origin	Dest	Dep/Arr	Frequency	Carrier	Operator	Eqpmnt	Seats
Departures								
2518	BJI	MSP	6:15	7 Days/Wk	DL	XJ	CRJ	50
2589	BJI	MSP	13:02	7 Days/Wk	DL	XJ	SF3	34
2504	BJI	MSP	17:08	7 Days/Wk	DL	XJ	CRJ	50
Arrivals				·				
2518	MSP	BJI	12:40	7 Days/Wk	DL	XJ	SF3	34
2589	MSP	BJI	14:40	7 Days/Wk	DL	XJ	CRJ	50
2504	MSP	BJI	23:27	7 Days/Wk	DL	XJ	CRJ	50
				-				

Source: Bemidji Regional Airport

Please refer to Sub-Appendix A (A-1 through A-7) and Sub-Appendix B (B-1) for BJI historical air service data and metrics.

Brainerd Lakes Regional Airport

BRD is a public airport located three miles northeast of the central business district of Brainerd. The airport covers 1,560 acres and has three runways and one helipad. Two of the airport's runways measure 6,500 feet. Airport amenities include free parking (located steps from the terminal door), a restaurant, free Wi-Fi, in-terminal rental car agencies, access to taxi cab services and access to county transit. General aviation (GA) plays a major role at the airport with seven 10-unit T-hangars and 11 private hangers. *Airmotive Enterprises* is the airport's FBO. BRD actively promotes availability of land within its premises for private hangar construction and aviation-related business development. Existing hangar space is also available for lease.

Brainerd is the county seat of Crow Wing County and had a population of 13,590 according to the 2010 census. Brainerd straddles the Mississippi River several miles upstream from the confluence with the Crow Wing River, founded as a site for a railroad crossing above the confluence. Brainerd is the principal city of the Brainerd Micropolitan Area that covers Cass and Crow Wing counties (combined population of 91,067) as per the 2010



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census. The Brainerd area is a major tourist destination for nature enthusiasts, golfers, and other recreationalists and in close proximity, Baxter is a regional retail center.

Brainerd is the home to one of five *MedEvac* helicopter flight stations in Minnesota for "AirCare," operated by North Memorial Medical Center, a Level 1 trauma center. The city is also known for the Brainerd International Raceway, which hosts races frequently throughout the year and has an annual national drag racing meet. Some of the city's major employers include Essential Healthcare, the Cuyuna Regional Medical Center, Ascensus and the Grand View Lodge.

The majority of BRD's air service in the past 10 years has been to MSP, as a connecting hub to other U.S and international destinations. U.S. DOT O-D survey data from 2010 indicates the top five largest markets from BRD to be Phoenix, Denver, Chicago, Dallas and Atlanta. From 1999 until 2010, BRD total O-D passengers have ranged from approximately 36,000 to 40,000 (please refer to Sub-Appendix A-5 for detailed information). BRD currently offers three daily departures to MSP on Mesaba, operating for Delta Connection. Equipment includes 34-seat Saab 340B aircraft and 50-seat Canadair CRJ-200 regional jets, depending on season. Additionally, Sun Country flies Boeing 737-800 aircraft on a charter basis to leisure destinations throughout the year. See Table D-6 for detailed schedule information.

Table D-6: Daily Week Day Brainerd Lakes Regional Airport Schedule (effective July 1, 2011)

Flight No.	Origin	Dest	Dep/Arr	Frequency	Carrier	Operator	Eqpmnt	Seats
Departures								
4272	BRD	MSP	5.05	7 Davis/W/ls	DL	XJ	CRJ	50
	BKD		5:25	7 Days/Wk	DL	Λ J		30
4153	BRD	MSP	12:49	7 Days/Wk	DL	XJ	CRJ	50
2513	BRD	MSP	15:37	Sun-Fri	DL	XJ	SF3	34
Arrivals								
4153	MSP	BRD	12:19	7 Days/Wk	DL	XJ	CRJ	50
2513	MSP	BRD	15:16	Sun-Fri	DL	XJ	SF3	34
3997	MSP	BRD	23:17	7 Days/Wk	DL	XJ	CRJ	50

Source: Brainerd Lakes Regional Airport

Please refer to Sub-Appendix A (A-1 through A-7) and Sub-Appendix B (B-2) for BRD historical air service data and metrics.

Range Regional Airport

HIB, formerly known as Chisholm-Hibbing Municipal Airport, is a public facility located four miles southeast of the City of Hibbing (Hibbing) in St. Louis County. The airport has two active runways, the longest of which measures 6,760 feet. The airport offers free parking and recently opened a new aircraft maintenance facility. In addition to aeronautical activities, the airport actively markets a 150 acre parcel of land designated by Hibbing as the *Airport Industrial Park*. Various buildings are open for leasing to qualified businesses with incentives and grants available.

The population of Hibbing is 16,361 according to the 2010 census. The city was built on the iron ore mining business, and it is in close proximity to the Mesabi Iron Range. Employers in Hibbing are involved in taconite production and



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related industries, regional health care services, electronics manufacturing and education. Access to Hibbing is provided by U.S. Highway 169, State Highway 37 and State Highway 73.

Most commercial air service from HIB have been within Minnesota, predominantly to MSP as a connecting hub to other U.S. and international destinations. U.S. DOT O-D survey data from 20010 indicated the top five largest markets from HIB to be Bullhead Cityⁱⁱⁱ (AZ), Phoenix, Denver, Minneapolis/St. Paul and Seattle. From 1999 until 2010, HIB total O-D passengers have ranged from approximately 14,000 to 29,000 (please refer to Sub-Appendix A-5 for detailed information). HIB currently offers three daily departures to MSP on Mesaba, operating for Delta Connection. Equipment includes a 34-seat Saab 340B. Sun Country flies Boeing 737-800 aircraft on a charter basis to leisure destinations throughout the year. See Table D-7 for detailed schedule information.

Please refer to Sub-Appendix A (A-1 through A-7) and Sub-Appendix B (B-3) for HIB historical air service data and metrics.

Table D-8: Daily Week Day Range Regional Airport Schedule (effective July 1, 2011)

Flight No.	Origin	Dest	Dep/Arr	Frequency	Carrier	Operator	Eqpmnt	Seats
Departures								
1								
2583	HIB	MSP	7:11	7 Days/Wk	DL	XJ	SF3	34
2515	HIB	MSP	12:50	Mon-Fri	DL	XJ	SF3	34
2618	HIB	MSP	17:01	7 Days/Wk	DL	XJ	SF3	34
Arrivals								
2515	MSP	HIB	12:29	Mon-Fri	DL	XJ	SF3	34
2617	MSP	HIB	14:14	7 Days/Wk	DL	XJ	SF3	34
2461	MSP	HIB	23:09	7 Days/Wk	DL	XJ	SF3	34

Source: Range Regional Airport

Falls International Airport

INL is a public facility located just south of the City of International Falls (International Falls). The airport covers 681 acres and has two runways, the longest of which measures 7,400 feet. Amenities include free parking and Wi-Fi internet access for passengers. Since International Falls is a designated international Port of Entry to the U.S., U.S. Customs provides services at INL as well as other points of entry within the city.

International Falls is the county seat for Koochiching County with a city population of 6,424 as per the 2010 census. INL serves residents in northern Minnesota including those in the cities of Littlefork, Big Falls, Ranier, Ash River, Kabetogama, Baudette, Warroad, Rainy River, Emo, Kenora and Dryden. INL's catchment area in Koochiching County is approximately 13,000 as per the 2010 census. INL also draws passengers from locations in northwestern Ontario, Canada. Some of the larger employers in the region include state and local government, Boise Inc. and United Healthcare. International Falls also hosts US and international manufacturers who conduct cold-weather testing in automobile, industrial and recreational equipment. Koochiching County has a substantial wood products industry and the county's location along the US border offers Foreign Trade Zone benefits to companies.



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The majority of INL's air service in the past 10 years has been to MSP as a connecting hub to other U.S. and international destinations. U.S. DOT O-D survey data from 2010 indicated the top five largest markets from INL to be Minneapolis/St. Paul, Chicago, Bullhead City ^{IV}(AZ), Atlanta and Dallas. From 1999 until 2010, INL total O-D passengers have ranged from approximately 26,000 to 42,000 (please refer to Sub-Appendix A-5 for detailed information). INL currently offers three daily departures to MSP on Mesaba, operating for Delta Connection. Equipment includes 34-seat Saab 340B aircraft, and during high season, on 50-seat Canadair CRJ-200 regional jets. See Table D-8 for detailed schedule information.

Table D-8: Daily Week Day Falls International Airport Schedule (effective July 1, 2011)

Flight No.	Origin	Dest	Dep/Arr	Frequency	Carrier	Operator	Eqpmnt	Seats
Departures								
2558	INL	MSP	6:40	7 Days/Wk	DL	XJ	SF3	34
2587	INL	MSP	10:57	7 Days/Wk	DL	XJ	SF3	34
2597	INL	MSP	16:57	7 Days/Wk	DL	XJ	SF3	34
Arrivals								
2587	MSP	INL	10:35	7 Days/Wk	DL	XJ	SF3	34
2562	MSP	INL	16:32	7 Days/Wk	DL	XJ	SF3	34
2597	MSP	INL	21:00	7 Days/Wk	DL	XJ	SF3	34

Source: Falls International Airport

The Town of Fort Frances (Fort Frances), Ontario, Canada, is located opposite International Falls on the north end of the Rainy River. Fort Frances has an airport with commercial air service provided by Bearskin Airlines to and from Winnipeg, Manitoba and Thunder Bay, Ontario. For the purposes of this analysis, we are assuming these two airport facilities are independent, each meet distinct market demands.

Please refer to Sub-Appendix A (A-1 through A-7) and Sub-Appendix B (B-4) for STC historical air service data and metrics.

St. Cloud Regional Airport

STC is located four miles east of the central business district of the City of St. Cloud (St. Cloud) and 60 miles northwest of downtown Minneapolis. The airport is a public facility operated by St. Cloud and has two active runways, the longest measuring 7,000 feet. The airport has a single terminal building, covers over 1,400 acres of land and offers amenities which include free parking and Wi-Fi internet access for passengers.

St. Cloud is the county seat for Stearns County with a population of 65,842 as per the 2010 census. STC's catchment area, however, includes the population within St. Cloud's Metropolitan Statistical Area (MSA) comprising of Stearns and Benton counties with a combined population of 185,555 as per the 2010 census. Some of the larger employers in the region include state and local government, *CentraCare Health System, Electrolux, Gold'n Plump, Wolters Kluwer* and *ING Direct*.



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Since the mid-1990s, commercial services at STC have been predominantly intrastate and primarily to MSP as a connecting hub to other U.S. and international destinations. U.S. DOT O-D survey data from 2009 indicated the top five largest markets from STC to be Bullhead City^v (AZ), Chicago, Phoenix, Dallas, and Washington DC. From 1999 until 2009, STC total O-D passengers have ranged from approximately 27,000 to 49,000 (please refer to Sub-Appendix A-5 for detailed information). On December 31, 2009, STC lost all commercial air service when Mesaba, operating for Delta Connection, ended service to MSP. The airport, however, continues to be served by Sun Country Airlines on a charter basis, with services to leisure destinations for approximately 3,000 annual passengers.

Table D-9: Daily Week Day St. Cloud Regional Airport Schedule (effective July 1, 2011)

Flight No.	Origin	Dest	Dep/Arr	Frequency	Carrier	Operator	Eqpmnt	Seats
Departures	_							
	No Scheduled	Service						
<u>Arrivals</u>								
	No SchedulesS	ervice						

Source: St. Cloud Regional Airport

In July 2010, STC launched a pledge drive to secure scheduled regional jet air service referred to as "Fly St. Cloud". The mission of this pledge drive is to regain scheduled commercial air service and to foster economic growth in the region. STC identified Chicago O'Hare as the target destination and an analysis by an independent transportation firm estimated the cost of operating two daily round-trip flights at \$4.4 million. STC's goal is to secure pledges totaling \$5.0 million in annual ticket purchases by companies and individuals in the region, effectively organizing a purchasing cooperative.

Please refer to Sub-Appendix A (A-1 through A-7) and Sub-Appendix B (B-5) for STC historical air service data and metrics.

Thief River Falls Regional Airport

TVF is a public airport located three miles south of the central business district of the City of Thief River Falls (Thief River Falls). The airport covers 916 acres and has two runways, the longest which measures 6,503 feet. The airport is housed in a single terminal unit and offers free short and long-term parking with car plug-in service available.

The airport currently has two major construction projects underway. The first is a 19,800 square foot multi-purpose hangar to provide a controlled environment for loading and housing freight. The second is a terminal remodeling project consisting of cosmetic improvements and a new HVAC system.

The airport also has additional amenities including an FBO called Thief River Aviation providing maintenance and fuel and a Hertz Rent-A-Car agency. Access to taxi and public transportation are also readily available.



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Thief River Falls takes its name from a geographic feature, the falls of the Red Lake River at its confluence with the Thief River. The city is the county seat of Pennington County and had a population of 8,573 according to the 2010 U.S. Census. The town is the home of snowmobile manufacturer Arctic Cat and electronic parts distributor Digi-Key, one of the largest employers in the region. The total population for Pennington and adjacent counties (Marshall, Red Lake, Polk and Clearwater) was 67,753 according to the 2010 U.S. Census.

Commercial services at TVF are intra-state with two daily flights to MPS via HIB. The services are subsidized by an EAS grant and are flown by Delta Connection on 34-seat Saab 340Bs. U.S. DOT O-D survey data from 2010 indicated the top five largest markets from TVF to be Minneapolis/St. Paul, Chicago, Denver, Phoenix, and Fort Myers. From 1999 until 2009, TVF total O-D passengers have ranged from approximately 17,000 to 4,000 (please refer to Sub-Appendix A-5 for detailed information). See **Table D-10** for detailed schedule information.

Please refer to Sub-Appendix A (A-1 through A-7) and Sub-Appendix B (B-6) for TVF historical air service data and metrics.

Table D-10: Daily Week Thief River Falls Regional Airport Schedule (effective July 1, 2011)

Flight No.	Origin	Dest	Dep/Arr	Frequency	Carrier	Operator	Eqpmnt	Seats
Departures								
2583	TVF	MSP-HIB	6:00	7 Days/Wk	DL	XJ	SF3	34
2618	TVF	MSP-HIB	15:51	7 Days/Wk	DL	XJ	SF3	34
Arrivals				,				
2461	MSP-HIB	TVF	12:17	7 Days/Wk	DL	XJ	SF3	34
2317	MSP-HIB	TVF	15:26	7 Days/Wk	DL	XJ	SF3	34
				·				

Source: Thief River Falls Regional Airport

OVERALL AIR SERVICE MAINTENANCE RECOMMENDATIONS

- Essential Air Service Even with Delta's announcement of flight reductions in the State, the EAS program will continue for the foreseeable future with no impacts to the State's airports. Small Outstate airports should continue to pursue services through this program and call on their local and state legislators to lobby on their behalf for continued support in these efforts as a new and smaller type of regional carriers (in addition to Great Lakes and Cape Air) begin to emerge willing to create business plans that cater to small regional airports and their communities.
- Multimodalism Multimodalism is the idea that transportation should be looked as one integrated system
 versus independent sectors. As gas prices rise, communities, counties and states should consider mitigating
 the impacts of oil prices and regaining control of their mobility. Creating a plan integrating different modes of
 transportation is key to the future movement of people and goods in a more effective and price-effective
 manner.
 - With multimodalism as a focal point, the State should consider a system or network of buses that serve small communities and link them with the large airports in the State with high frequency and reasonable pricing. State legislators should consider subsidizing such a system and integrate this network into the



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national air transportations system through codeshare agreements with the major airlines and the ability of passengers to purchase tickets through their websites and other Global Distribution System (GDS) channels.

- Local Airline Service Action Committee All small Outstate airports should continue supporting the Local
 Airline Service Action Committee (LASAC) to communicate, promote and negotiate on behalf of their
 constituents. Strategies include supporting cities efforts to attract airline service, investment in creating more
 secure and passenger friendly terminal buildings, the development of potential for Greater Minnesota
 airports and the continuation of the air service marketing program. Additionally, the organization should
 pursue joint marketing efforts, lobbying efforts to State law makers, joint efforts on multi-modal initiatives,
 joint meeting and procurement of air carriers and information sharing. If reaching out to carriers such as
 Great Lakes and Cape Air, a group of this size could have an increased amount of leverage when
 negotiating service, schedules and other services.
- Outstate Airport Ground-Handling Coalition Ground handling a carrier can add high costs to operating
 routes, especially for regional and small airlines. Customer service staff, ramp personnel and space rentals
 for operations and baggage claim all add to an already highly elastic business model with thin margins and
 low volumes. Outstate airport should lobby as a single entity for state grants subsidizing ground handling
 services in their airports and removing this cost from the airlines, particularly small independent airlines free
 from union contracts which could determine the rates for third-party ground handling services for their
 regional affiliates.
- Small Community Air Service Development Program Grants As legacy carriers continue facing challenging financial conditions and low cost carriers continue to attract passengers away from small community airports, the DOT responded by having Congress establish the Small Community Air Service Development Program in 2000. To help small communities improve air service, the DOT implemented the program to educate them on the goals and strategies used in the past and what results were obtained by the grants provided. The grants are awarded at the discretion of the Secretary of Transportation.
 - Approach New Carriers Approaching new carriers for air service is an effective and accepted practice
 in the industry. Most carriers have an open door policy when communicating with airports and welcome
 presentations and the exchange of information to educate them on a market's growth.

ASSESSMENT OF AIR SERVICES: CURRENT CONDITIONS

Large Outstate Airport

Background

Minnesota's large Outstate airports offer scheduled flights with destinations which span from small Outstate Airports within the State to major hubs in the U.S., North America, Europe and Asia. These airports include MSP, DLH and Rochester International Airport (RST). Combined, these airports served approximately 15.8 million passengers in 2010, the majority enplaning and deplaning at MSP.



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Minneapolis/St. Paul International Airport (MSP)

In terms of passengers, MSP is the 15th busiest airport in the U.S. (2010)vi and 33rd busiest airport in the world in 2010vii. A joint civil-military airport, MSP is also home to the MSP Joint Air Reserve Station, supporting both Air Force Reserve Command and Air National Guard flight operations. Airlines out of Minneapolis/St. Paul International airport serve 134 nonstop markets from MSP, including 120 domestic and 14 international markets.

MSP is the third largest hub for Delta and Delta Connection partners Compass, Mesaba and Pinnacle. It also serves as the home base for Sun Country. Delta accounts for more than 80% of the airport's passenger traffic. MSP is operated by the Metropolitan Airports Commission (MAC), which also handles operation of six smaller airports in the region.

Duluth International Airport (DLH)

DLH is a city-owned, public-use airport located five miles northwest of the central business district of Duluth, located in St. Louis County. It serves the Duluth-Superior area in the State's northeastern region including Superior, Wisconsin. The airport is served by Allegiant, Delta Connection (operated by Mesaba, Pinnacle and SkyWest) and United Express. Destinations from DLH include Las Vegas, Orlando (Sanford), Phoenix (Mesa), Detroit, MSP and Chicago (O'Hare). Services are provided primarily by regional jets including the 50-seat Canadair CRJ-200 and Embraer 145 aircraft. Allegiant serves DLH with 150-seat Douglas MD-83s. Additionally, the airport has cargo services operated by FedEx Feeder and Bemidji Airlines. The Minnesota Air National Guard's 148th Fighter Wing, equipped with F-16 aircraft is based at the Duluth Air National Guard Base.

DLH covers an area of 3,020 acres and has 2 runways, the longest which measures 10,162 feet. A new terminal is under construction to replace the old terminal. The new terminal will be able to handle more passengers.

Rochester International Airport (RST)

RST is a non-hub primary airport located seven miles southwest of the central business district of Rochester, located in Olmsted County. RST is the second busiest commercial airport in the State. The airport covers 2,400 acres and has two runways, the longest which measures 9,033.

Commercial air service is provided by American and Delta. American's regional affiliates, AmericanConnection and American Eagle, both serve Chicago O'Hare and are operated by Chautaugua. Delta Connection serves Detroit and MSP operated by Pinnacle and Mesaba. Sun Country operated services to Bullhead City, AZ, on a seasonal basis. Services are provided primarily by regional jets including the 50-seat Canadair CRJ-200 and Embraer 145. Sun Country serves RST with 162-seat Boeing 737-800s. The airport also has a large FedEx terminal, a small ABX Air station as well as a GA terminal.

Mn/DOT and RST are currently planning a new runway and terminal. The new runway, would be located parallel to the primary runway and a new midfield terminal will be built between the two runways.

Socio-Economic Background on Duluth and Rochester

Duluth



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Duluth is a port city in the U.S. state of Minnesota and is the county seat of Saint Louis County. The fourth largest city in Minnesota, Duluth had a total population of 86,265 in the 2010 census. Duluth is also the second largest city located on Lake Superior after Thunder Bay, Ontario, and has the largest metropolitan area on Lake Superior. The Duluth MSA had a population of 279,771 in 2010. Situated at the westernmost point of the Great Lakes on the north shore of Lake Superior, Duluth is deep-water accessible to the Atlantic Ocean 2,300 miles away via the Great Lakes and Erie Canal/New York State Barge Canal or Saint Lawrence Seaway passages.

Duluth is the regional hub not only of its own immediate area but also of a larger area encompassing northeastern Minnesota, northwestern Wisconsin and the western Upper Peninsula of Michigan. It is a major transportation center for the transshipment of coal, taconite, agricultural products, steel, limestone, and cement and in recent years it has seen strong growth in the transshipment of wind turbine components from manufacturers in Europe. Duluth is also a center for aquatic biology and aquatic science. The city is home to the EPA's Mid-Continent Ecology Division Laboratory and the University of Minnesota-Duluth. Businesses that support Duluth's economy include ERA laboratories, LimnoLogic, the ASci Corporation, Environmental Consulting and Testing and Ecolab.

The city is also a popular center for tourism and a convenient base for trips to the North Shore via Highway 61 and to fishing and wilderness destinations in Minnesota's far north, including the Superior National Forest and the Boundary Waters Canoe Area.

Rochester

Rochester is a city in the U.S. state of Minnesota and is the county seat of Olmsted County. Located on both banks of the Zumbro River, Rochester is home to the Mayo Clinic, a prestigious hospital and medical research facility. The city had a population of 106,769 according to the 2010 U.S. Census making it Minnesota's third-largest city.

The Mayo Clinic forms the core of Rochester's economy, employing about 30,000 people and drawing over 2 million visitors to the city each year. The clinic's many facilities, along with hotels, restaurants and retail stores comprise of nearly all the city's downtown. Another healthcare provider, the Rochester Federal Medical Center, is also a significant employer in the city.

IBM is also a major employer in Rochester and houses a large manufacturing center in charge of producing many of their major prototype computer components. The city is also home to Think Mutual Bank, a chain of banks operating in the State and founded by IBM employees.

RECOMMENDED STRATEGIES: LARGE OUTSTATE AIRPORTS

Design and implementation of incentive policies

Incentives are clearly a double-edged sword, and can present risk if not properly designed and executed. However, they are also an accepted (and often required) element of airline negotiations, particularly as the competition for new airline services has intensified over the past several years. Well-designed policies should reward high-priority targets, avoid any appearance of discrimination and should offer both up-front support for a new service and continuing assistance.



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Airline Partnerships I: Incentive Policies – Develop a package of support for operational expenditures incurred during an initial promotional period consistent with Federal rules which includes:

- Waive air carrier fees for a period between 12 and 24 months including rent payment for all landing fees, holdroom and loading bridge fees, bag make-up fees and aircraft parking fees for each eligible market.
- Require a 2-year contract commitment.
- Offer of an initial marketing campaign with a set amount of funds per eligible market in advertising dollars (funded by city or local municipality) for pre-service launch ads.
- Offer an additional set amount of funds (funded by city or local municipality) for a follow up ad campaign targeting business and leisure travelers post-service launch.
- Provide promotional sales and support after the service launches included but not limited to local media coverage, in-airport advertising, airport web-site space, travel agent seminars and other initiatives.

Airport Partnerships II: the Tag Team" Approach - Just as DLH and RST are well-informed about the local market, so are the airports on the other side of the proposed route. Tag Team is a strategy in which State airports engage "other" airports in the route proposal to jointly participate in a presentation to a targeted carrier. This is a leveraging technique where by both airports present all incentives, support and market data thereby building airline confidence in the proposed route which results in risk mitigation. For DLH and RST, these Tag Team targets would not include major hubs, instead they would encompass leisure destinations such as Phoenix (Mesa), Palms Springs and Orlando (Sanford).

Leakage Analysis – A comprehensive leakage analysis can calculate how many passengers living in the catchment area of an airport are driving to another nearby airport for their travel needs. Through the use of Marketing Information Data Tapes (MIDT), International Air Transport Association (IATA) PAXis data and other accurate sources of data pinpointing travelers at the zip code level, a leakage analysis can provide a detailed map showing areas in a region where passengers are clearly showing a preference to an alternate airport. In the case of both DLH and RST (particularly RST), good access and competitive fares drive passengers to MSP daily given the regions proclivity to large corporations and their employees with high travel propensities. A leakage analysis can identify those passengers and provide a target for direct marketing campaigns.

Sustainability of Existing Service - It is paramount to demonstrate existing carrier performance to potential new entrants. Therefore, supporting incumbent airlines with co-operative marketing, sales leads, market data and other means is critical to sustainability.

RECOMMENDED STRATEGIES FOR COMMUNITY RELATIONS

Proactive use of conference opportunities

It is important to maintain a market presence at key airline-airport events. These meetings enhance the effectiveness of on-site presentations, and maintain dialog and top-of-mind awareness among airline executives. Several events are staggered throughout the calendar year:



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- a) Network Airline Conference March of each year
- b) ACI Marketing and Jump Start June of each year
- c) ROUTES Conference September of each year
- d) Others many other worthwhile events are held throughout the year, including the National Air Service Conference, FAA Forecasting Conference, AAAE Annual, and ACI Annual events.

Executive-level involvement and proactive support

Outstate airports and the presiding members of their staff should continue the existing practice of meeting regularly with their airline(s). These meetings are very important, and the principal of "every airline, every year" is indicative of the priority they should obtain. Participation of the highest levels is tangible proof of their commitment. Other staff such as public affairs and air service specialists should handle most ongoing activities.

Board, community, and business leadership participation and support

Support of community and business leaders can be a crucial success factor in any meetings with airlines, especially for discussing new service. Community support is vital for new or expanded service, and airlines can benefit from any and all tangible evidence.

Locally hosted networking and appreciation events

Picnics, golf outings or other airline appreciation events can be a testament to the benefits of working directly with local airline staff. Such events should become an integral element of the overall strategic development process. The events should recognize local airline personnel and encourage attendance by headquarter executives.

Proactive partnerships for cooperative marketing and advertising

As airline marketing resources dwindle under cost pressures, airports and communities must assume a growing responsibility. In-kind or cooperative marketing/advertising with local media outlets can range from general advertising to specially targeted ads for the launch of new service or other events. Partnerships could provide, for example, fare comparisons between those at Oustate airports and other regional hubs at a driving distance to foster ongoing awareness.

(Potential) proactive engagement of local press, including editorial boards

Regular interviews or "Industry Updates" can build strong partnerships with media representatives, and foster mutual communication and awareness. Some media outlets discourage this type of activity as a threat to their independence, but efforts are often worthwhile. Data, and its interpretation, can be attractive to news reporters.

Survey/monitoring of customer satisfaction and competitive results

Regular surveys of consumers can provide competitive feedback as well as input on many customer satisfaction issues. Survey results can be included in airline meetings, and could be useful in rate and fee negotiations for Outstate airports.



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Greater Involvement of other Airport Entities

Many businesses at Outstate airports have a low visibility but play a vital role in their operations. They have a large vested interest in its growth. Such entities include freight forwarders, customs brokers, FBOs, automobile rentals and the FAA. All contribute to making Outstate airports a good environment for passengers, shippers and airlines and any, if functioning poorly, could detract from it. Events such as "Appreciation Days", articles on airport websites, brochures or other events could encourage input from these organizations and help them understand how they contribute to the Airport's perceived level of service.

Ongoing web site updates and enhancements

Web sites provide excellent opportunities to give and collect information and feedback from the user community. Outstate airports should share website design and content tips and survey other noteworthy sites for ideas and opportunities for enhancement.

RISK ANALYSIS

The FAA Reauthorization bill, when passed after the new January 31, 2012 deadline, could have significant changes in the AIP and airport funding sources with the length of reauthorization and the level of authorization yet to be determined. As previously mentioned, questions regarding the long-term future of the EAS program continue and it is important to note that the outcome of how air services will be shaped in the State for the medium-to-long term are dependent on the outcome of a final Reauthorization Bill. Regular updates to this plan and other commercial air service assessments whether at the State or local levels are recommended to identify and address the needs of airports as new laws and regulations continue changing and taking effect.



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SUB-APPENDIX A

	Appendix A-1 Total Departures (Historical) 1997 - 2010											
Calendar Year	BJI	BRD	DLH	HIB	INL	RST	STC	TV				
1997	2,195	2,345	4,626	1,624	1,323	8,083	3,186	1,04				
1998	4,426	4,392	7,420	4,352	2,992	8,986	5,996	1,91				
1999	5,278	4,491	10,570	4,778	3,332	9,101	6,915	2,0				
2000	5,591	5,599	9,282	3,412	3,487	8,646	4,999	1,5				
2001	5,010	4,798	7,474	2,063	3,079	7,999	4,815	1,40				
2002	4,592	3,933	8,190	1,824	2,596	8,361	4,680	1,4				
2003	3,914	3,029	5,761	2,434	2,703	8,128	5,294	1,3				
2004	4,463	3,054	7,917	2,249	3,091	9,470	3,700	1,4				
2005	4,534	3,532	6,096	2,166	2,725	10,146	3,886	1,3				
2006	3,207	3,565	5,714	2,769	2,127	9,424	3,340	1,2				
2007	2,842	3,467	7,107	2,707	2,079	9,734	3,211	1,20				
2008	2,629	2,984	5,573	2,661	2,009	10,141	2,785	1,2				
2009	1,998	2,450	5,315	2,632	1,805	8,979	2,457	1,20				
2010	2,037	1,769	7,720	3,166	1,614	8,315	37	1,20				
A	verage Annua	l Compound	Growth Rate	(AACGR %	o)							
1997 - 2010	-0.6%	-2.1%	4.0%	5.3%	1.5%	0.2%	-29.0%	1.1				



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	Appendix A-2 Total Seats (Historical) 1997 - 2010											
Calendar Year	BJI	BRD	DLH	НІВ	INL	RST	STC	T				
1997	75,464	80,466	403,064	50,650	38,808	689,430	97,639	37,1				
1998	154,084	152,988	485,288	150,317	102,244	658,942	204,020	67,0				
1999	179,452	152,694	675,905	162,452	113,288	667,523	235,110	68,5				
2000	190,094	190,366	600,764	116,008	118,558	635,820	169,966	53,6				
2001	170,340	163,132	506,779	70,278	104,702	590,690	163,710	47,6				
2002	156,128	134,266	570,727	62,016	88,264	613,672	159,120	49,0				
2003	133,076	103,248	455,693	82,756	91,902	526,692	180,258	46,8				
2004	151,806	104,092	520,247	76,722	105,094	521,932	126,100	48,2				
2005	154,220	120,228	453,627	73,644	94,512	508,868	132,124	46,9				
2006	112,478	121,210	448,243	94,146	77,216	506,755	114,072	41,8				
2007	100,308	118,050	528,445	92,038	78,556	548,255	112,974	40,8				
2008	94,162	101,644	464,435	90,474	76,786	548,380	102,818	41,6				
2009	73,008	83,384	387,634	89,488	68,458	481,267	89,718	40,9				
2010	73,253	63,769	440,209	111,238	56,715	411,570	5,974	41,0				
<u>A</u>	Average Annu	al Compound	d Growth Rat	e (AACGR ^o	%)							
1997 - 2010	-0.2%	-1.8%	0.7%	6.2%	3.0%	-3.9%	-19.3%	0.3				



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		Total Onbo	Appe ard Passenge	ndix A-3 ers (Historica	al) 1997 - 20	10		
Calendar Year	ВЈІ	BRD	DLH	нів	INL	RST	STC	TV
1997	38,967	43,876	200,910	23,980	14,538	307,683	40,922	4,7
1998	76,818	68,758	237,572	61,537	35,392	336,434	79,801	13,3
1999	92,779	59,148	292,982	68,087	48,976	323,339	100,612	26,2
2000	95,583	79,448	283,133	42,888	50,501	302,324	70,450	15,2
2001	87,487	71,703	273,783	22,643	42,746	273,516	69,264	10,5
2002	78,485	62,488	298,113	18,125	37,689	289,651	73,180	8,8
2003	66,453	42,357	238,084	38,842	38,606	276,033	83,074	8,1
2004	72,490	45,552	301,472	35,926	42,210	276,397	49,007	9,0
2005	75,847	54,237	295,701	37,898	42,951	285,429	48,251	9,3
2006	59,587	50,305	284,983	42,322	36,183	300,978	48,591	6,6
2007	52,127	49,462	345,137	40,146	35,253	330,192	50,537	6,7
2008	49,192	39,312	294,504	35,308	32,925	310,550	41,177	6,2
2009	43,121	33,340	252,206	28,114	32,768	261,023	29,468	5,4
2010	42,754	33,791	302,189	32,856	27,902	242,033	3,377	5,0
	Average Annua	al Compound	d Growth Rat	e (AACGR %	(o)			
1997 - 2010	0.7%	-2.0%	3.2%	2.5%	5.1%	-1.8%	-17.5%	0.4



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Appendix A-4 Average Load Factors (%) (Historical) 1997 - 2010								
Calendar Year	BJI	BRD	DLH	нів	INL	RST	STC	TVI
1997	58%	57%	52%	54%	44%	47%	39%	14%
1998	57%	48%	49%	48%	39%	54%	36%	26%
1999	58%	43%	44%	48%	48%	49%	37%	459
2000	56%	44%	47%	41%	49%	48%	39%	319
2001	58%	44%	56%	35%	48%	47%	39%	239
2002	56%	47%	56%	34%	49%	50%	42%	199
2003	54%	43%	54%	52%	48%	54%	44%	189
2004	54%	44%	60%	52%	44%	57%	40%	199
2005	56%	43%	67%	55%	50%	60%	36%	219
2006	60%	35%	70%	48%	52%	64%	46%	169
2007	59%	35%	73%	46%	53%	66%	58%	189
2008	57%	33%	74%	40%	48%	70%	67%	149
2009	59%	36%	76%	32%	52%	68%	58%	139
2010	58%	62%	76%	38%	53%	62%	90%	129



COMMERCIAL AIR SERVICE TECHNICAL REPORT

	(Origin-Destii	Appe nation Passen	ndix A-5 gers (Histor	ical) 1990 - 2	2010		
Calendar Year	BJI	BRD	DLH	нів	INL	RST	STC	TV
1990	48,770	30,950	236,910	31,670	51,400	287,940	0	12,9
1991	56,790	27,210	215,890	27,310	43,030	249,390	0	13,6
1992	43,840	34,930	257,130	32,280	46,380	275,530	0	11,1
1993	42,110	30,980	243,160	30,350	39,170	273,480	8,840	8,4
1994	37,340	28,590	227,190	28,810	34,750	267,940	19,670	5,7
1995	33,840	23,930	230,240	26,130	38,200	271,710	18,870	7,4
1996	34,140	25,000	223,740	23,410	34,130	259,490	18,250	7,8
1997	49,530	32,050	219,820	30,290	35,580	284,610	30,630	8,3
1998	50,370	32,820	212,220	28,180	33,120	286,660	41,080	10,9
1999	53,950	36,030	254,610	28,870	40,550	274,980	49,210	16,7
2000	53,550	38,140	255,070	23,900	42,170	262,840	43,580	13,4
2001	51,140	37,140	245,660	18,000	39,380	260,660	41,180	10,2
2002	50,640	35,800	261,400	13,930	36,270	256,950	40,660	8,6
2003	52,370	33,600	220,950	17,260	36,820	245,770	37,700	8,3
2004	54,130	35,340	279,710	18,390	39,620	242,660	39,700	8,8
2005	55,430	40,420	265,820	20,850	40,850	248,150	46,620	8,7
2006	49,690	34,990	262,870	17,180	34,440	260,700	47,120	6,1
2007	41,880	34,960	318,740	16,010	33,810	285,220	48,710	6,1
2008	40,680	31,490	267,220	15,820	29,840	270,030	37,250	6,2
2009	40,140	28,700	230,910	17,160	28,750	228,000	26,770	5,6
2010	39,760	30,650	275,080	20,310	25,810	203,780	2,300	4,3
	Average Annua	al Compound	d Growth Rate	e (AACGR %	6)			
1990 - 2010	-1.0%	0.0%	0.7%	-2.2%	-3.4%	-1.7%	n/a	-5.3



COMMERCIAL AIR SERVICE TECHNICAL REPORT

		Nominal Av	erage Fares (dix A-6 \$) (Historica	l) 1990 - 201	0		
Calendar Year	ВЈІ	BRD	DLH	нів	INL	RST	STC	TV
1990	\$143	\$170	\$170	\$178	\$196	\$181		\$15
1991	\$138	\$173	\$178	\$178	\$182	\$191		\$14
1992	\$146	\$158	\$153	\$154	\$168	\$172		\$16
1993	\$166	\$196	\$170	\$175	\$193	\$193	\$46	\$20
1994	\$190	\$214	\$185	\$179	\$204	\$199	\$192	\$23
1995	\$197	\$210	\$186	\$186	\$203	\$201	\$189	\$22
1996	\$210	\$227	\$209	\$214	\$233	\$226	\$218	\$23
1997	\$169	\$201	\$208	\$194	\$211	\$221	\$197	\$22
1998	\$169	\$193	\$200	\$185	\$200	\$211	\$189	\$18
1999	\$163	\$196	\$197	\$169	\$174	\$215	\$192	\$1:
2000	\$176	\$195	\$200	\$174	\$182	\$213	\$207	\$1
2001	\$184	\$190	\$189	\$171	\$185	\$197	\$197	\$1
2002	\$182	\$188	\$184	\$166	\$190	\$179	\$187	\$18
2003	\$181	\$192	\$204	\$175	\$193	\$183	\$191	\$1
2004	\$191	\$194	\$182	\$182	\$200	\$197	\$196	\$13
2005	\$198	\$194	\$181	\$181	\$191	\$181	\$186	\$1'
2006	\$218	\$213	\$201	\$222	\$244	\$182	\$201	\$2
2007	\$236	\$215	\$184	\$215	\$247	\$174	\$197	\$2
2008	\$265	\$242	\$228	\$268	\$266	\$200	\$214	\$20
2009	\$227	\$199	\$192	\$200	\$219	\$166	\$188	\$2
2010	\$242	\$213	\$191	\$212	\$249	\$184	\$130	\$2
A	verage Annua	l Compound	Growth Rate	(AACGR %	<u>)</u>			
1990 - 2010	2.7%	1.1%	0.6%	0.9%	1.2%	0.1%	n/a	1.8



COMMERCIAL AIR SERVICE TECHNICAL REPORT

		Nomina	Apper ll Yield (\$) (H	ndix A-7 Iistorical) 199	90 - 2010			
Calendar Year	ВЈІ	BRD	DLH	HIB	INL	RST	STC	TVI
1990	\$0.16	\$0.16	\$0.16	\$0.18	\$0.22	\$0.19		\$0.1
1991	\$0.20	\$0.17	\$0.17	\$0.18	\$0.21	\$0.19		\$0.1
1992	\$0.15	\$0.16	\$0.14	\$0.16	\$0.17	\$0.17		\$0.1
1993	\$0.16	\$0.19	\$0.16	\$0.16	\$0.19	\$0.19	\$0.75	\$0.2
1994	\$0.17	\$0.20	\$0.17	\$0.16	\$0.19	\$0.19	\$0.18	\$0.2
1995	\$0.19	\$0.20	\$0.17	\$0.17	\$0.20	\$0.19	\$0.19	\$0.2
1996	\$0.19	\$0.22	\$0.19	\$0.20	\$0.23	\$0.22	\$0.23	\$0.2
1997	\$0.16	\$0.20	\$0.18	\$0.18	\$0.21	\$0.21	\$0.21	\$0.2
1998	\$0.16	\$0.18	\$0.18	\$0.17	\$0.19	\$0.20	\$0.19	\$0.1
1999	\$0.15	\$0.19	\$0.18	\$0.15	\$0.17	\$0.21	\$0.19	\$0.1
2000	\$0.16	\$0.18	\$0.17	\$0.15	\$0.18	\$0.20	\$0.20	\$0.1
2001	\$0.16	\$0.17	\$0.16	\$0.15	\$0.18	\$0.19	\$0.19	\$0.1
2002	\$0.15	\$0.17	\$0.16	\$0.14	\$0.17	\$0.17	\$0.18	\$0.1
2003	\$0.16	\$0.17	\$0.17	\$0.15	\$0.17	\$0.17	\$0.19	\$0.1
2004	\$0.16	\$0.18	\$0.16	\$0.15	\$0.18	\$0.19	\$0.19	\$0.1
2005	\$0.17	\$0.18	\$0.16	\$0.15	\$0.18	\$0.17	\$0.18	\$0.1
2006	\$0.19	\$0.19	\$0.17	\$0.19	\$0.21	\$0.18	\$0.19	\$0.1
2007	\$0.20	\$0.19	\$0.16	\$0.18	\$0.22	\$0.17	\$0.19	\$0.1
2008	\$0.22	\$0.21	\$0.19	\$0.23	\$0.22	\$0.19	\$0.20	\$0.2
2009	\$0.19	\$0.18	\$0.16	\$0.16	\$0.19	\$0.16	\$0.18	\$0.1
2010	\$0.21	\$0.19	\$0.16	\$0.17	\$0.22	\$0.19	\$0.10	\$0.1
A	verage Annua	l Compound	Growth Rate	(AACGR %	/			
1990 - 2010	1.2%	0.7%	-0.1%	-0.3%	0.0%	0.0%	n/a	0.59



COMMERCIAL AIR SERVICE TECHNICAL REPORT

SUB-APPENDIX B

Appendix B-2 2010 BRD Top 20 Origin-Destination Passengers & Average Fares

				p	assengers Per Day
Rank	Destination	Code	Passengers	Average Fare (\$)	Each Way
1	Phoenix International Airport	PHX	1,640	\$185.46	2.2
2	Denver International Airport	DEN	1,380	\$143.25	1.9
3	Chicago O'Hare International Airport	ORD	1,230	\$146.65	1.7
4	Dallas/Ft. Worth International Airport	DFW	1,110	\$226.38	1.5
5	Atlanta Hartsfield-Jackson International Airport	ATL	1,060	\$213.60	1.5
6	Orlando International Airport	MCO	960	\$193.24	1.3
7	Minneapolis/St. Paul International Airport	MSP	930	\$100.38	1.3
8	Laughlin Bullhead International Airport	IFP	900	\$149.23	1.2
9	Los Angeles International Airport	LAX	900	\$237.71	1.2
10	Las Vegas McCarran International Airport	LAS	820	\$223.98	1.1
11	Ft. Myers/Southwest Florida International	RSW	740	\$172.12	1.0
12	Washington National Airport	DCA	720	\$216.97	1.0
13	Seattle/Tacoma International Airport	SEA	700	\$295.30	1.0
14	Tampa International Airport	TPA	670	\$171.07	0.9
15	Kansas City International Airport	MCI	510	\$221.71	0.7
16	San Francisco International Airport	SFO	470	\$187.72	0.6
17	Chicago Midway Airport	MDW	450	\$151.67	0.6
18	San Diego International Airport	SAN	450	\$230.04	0.6
19	Boston Logan International Airport	BOS	430	\$228.00	0.6
20	Detroit Metro Wayne County Airport	DTW	420	\$215.07	0.6
	Other Markets		14,160		19.4
	Total		30,650	\$213.23	42.0



COMMERCIAL AIR SERVICE TECHNICAL REPORT

Appendix B-3 2010 HIB Top 20 Origin-Destination Passengers & Average Fares

				P	assengers Per Day
Rank	Destination	Code	Passengers	Average Fare (\$)	Each Way
1	Laughlin Bullhead International Airport	IFP	1,560	\$164.72	2.1
2	Phoenix International Airport	PHX	1,260	\$182.88	1.7
3	Denver International Airport	DEN	1,010	\$173.58	1.4
4	Minneapolis/St. Paul International Airport	MSP	820	\$110.76	1.1
5	Seattle/Tacoma International Airport	SEA	720	\$250.82	1.0
6	Orlando International Airport	MCO	630	\$174.51	0.9
7	Ft. Myers/Southwest Florida International	RSW	610	\$167.89	0.8
8	Los Angeles International Airport	LAX	510	\$217.04	0.7
9	Atlanta Hartsfield-Jackson International Airport	ATL	470	\$238.28	0.6
10	Milwaukee Mitchell International Airport	MKE	460	\$148.37	0.6
11	Las Vegas McCarran International Airport	LAS	450	\$177.09	0.6
12	Dallas/Ft Worth International Airport	DFW	420	\$222.55	0.6
13	Washington National Airport	DCA	410	\$258.78	0.6
14	Portland International Airport	PDX	390	\$273.26	0.5
15	Chicago O'Hare International Airport	ORD	370	\$184.00	0.5
16	Tampa International Airport	TPA	330	\$241.91	0.5
17	Houston Intercontinental Airport	IAH	320	\$166.41	0.4
18	San Francisco International Airport	SFO	290	\$221.62	0.4
19	Chicago Midway Airport	MDW	280	\$143.89	0.4
20	Boston Logan International Airport	BOS	270	\$209.93	0.4
	Other Markets		8,730		12.0
	Total		20,310	\$211.85	27.8



COMMERCIAL AIR SERVICE TECHNICAL REPORT

Appendix B-4 2010 INL Top 20 Origin-Destination Passengers & Average Fares

				P	assengers Per Day
Rank	Destination	Code	Passengers	Average Fare (\$)	Each Way
1	Minneapolis/St. Paul International Airport	MSP	1,740	\$179.67	2.4
2	Laughlin Bullhead International Airport	IFP	1,320	\$157.61	1.8
3	Chicago O'Hare International Airport	ORD	1,180	\$210.14	1.6
4	Atlanta Hartsfield-Jackson International Airport	ATL	990	\$246.19	1.4
5	Dallas/Ft. Worth International Airport	DFW	920	\$247.67	1.3
6	Phoenix International Airport	PHX	920	\$212.17	1.3
7	Denver International Airport	DEN	750	\$174.75	1.0
8	St. Louis Lambert International Airport	STL	660	\$206.06	0.9
9	Chicago Midway Airport	MDW	550	\$186.47	0.8
10	Las Vegas McCarran International Airport	LAS	530	\$250.25	0.7
11	Orlando International Airport	MCO	510	\$237.88	0.7
12	Boise International Airport	BOI	480	\$363.88	0.7
13	Port Columbus International Airport	CMH	460	\$293.07	0.6
14	Detroit Metro Wayne County Airport	DTW	450	\$258.71	0.6
15	Los Angeles International Airport	LAX	450	\$275.78	0.6
16	Nashville International Airport	BNA	420	\$248.98	0.6
17	Tampa International Airport	TPA	400	\$208.85	0.5
18	Houston Intercontinental Airport	IAH	390	\$351.15	0.5
19	Indianapolis International Airport	IND	390	\$236.00	0.5
20	Washington National Airport	DCA	370	\$241.05	0.5
	Other Markets		11,930		16.3
	Total		25,810	\$248.98	35.4



COMMERCIAL AIR SERVICE TECHNICAL REPORT

Appendix B-5 2009 STC Top 20 Origin-Destination Passengers & Average Fares

				P	assengers Per Day
Rank	Destination	Code	Passengers	Average Fare (\$)	Each Way
1	Laughlin Bullhead International Airport	IFP	2,600	\$119.73	3.6
2	Phoenix Sky Harbor International Airport	PHX	1,190	\$153.39	1.6
3	Dallas/Ft Worth International Airport	DFW	850	\$180.89	1.2
4	Washington National Airport	DCA	810	\$234.26	1.1
5	Chicago O'Hare International Airport	ORD	810	\$149.74	1.1
6	Chicago Midway Airport	MDW	760	\$113.37	1.0
7	Las Vegas McCarran International Airport	LAS	740	\$166.78	1.0
8	Atlanta Hartsfield-Jackson International Airport	ATL	730	\$247.40	1.0
9	Orlando International Airport	MCO	710	\$138.70	1.0
10	Detroit Metro Wayne County Airport	DTW	700	\$194.20	1.0
11	Denver International Airport	DEN	690	\$122.58	0.9
12	Seattle/Tacoma International Airport	SEA	630	\$170.06	0.9
13	St. Louis Lambert International Airport	STL	570	\$185.95	0.8
14	New York LaGuardia Airport	LGA	530	\$170.36	0.7
15	Philadelphia International Airport	PHL	530	\$180.40	0.7
16	Los Angeles International Airport	LAX	480	\$224.46	0.7
17	Tampa International Airport	TPA	470	\$124.32	0.6
18	Kansas City International Airport	MCI	410	\$274.98	0.6
19	Madison Dane County Regional Airport	MSN	410	\$225.88	0.6
20	Boston Logan International Airport	BOS	370	\$193.62	0.5
	Other Markets		11,780		16.1
	Total		26,770	\$187.55	36.7



COMMERCIAL AIR SERVICE TECHNICAL REPORT

Appendix B-6 2010 TVF Top 20 Origin-Destination Passengers & Average Fares

				Pa	assengers Per Day
Rank	Destination	Code	Passengers	Average Fare (\$)	Each Way
1	Minneapolis/St. Paul International Airport	MSP	770	\$208.92	1.1
2	Chicago O'Hare International Airport	ORD	280	\$208.64	0.4
3	Denver International Airport	DEN	150	\$191.27	0.2
4	Phoenix International Airport	PHX	140	\$208.86	0.2
5	Ft. Myers/Southwest Florida International	RSW	140	\$105.43	0.2
6	Atlanta Hartsfield-Jackson International Airport	ATL	120	\$266.58	0.2
7	Los Angeles International Airport	LAX	120	\$171.25	0.2
8	Baltimore/Washington International Airport	BWI	100	\$270.90	0.1
9	Orlando International Airport	MCO	100	\$202.00	0.1
10	Chicago Midway Airport	MDW	90	\$186.22	0.1
11	St. Louis Lambert International Airport	STL	90	\$181.67	0.1
12	Washington National Airport	DCA	80	\$191.63	0.1
13	Las Vegas McCarran International Airport	LAS	80	\$107.13	0.1
14	Savannah International Airport	SAV	80	\$341.13	0.1
15	Tampa International Airport	TPA	70	\$247.57	0.1
16	Boise International Airport	BOI	60	\$180.67	0.1
17	Boston Logan International Airport	BOS	60	\$305.17	0.1
18	Dallas/Ft. Worth International Airport	DFW	60	\$368.17	0.1
19	Fort Lauderdale International Airport	FLL	60	\$299.17	0.1
20	Manchester International Airport	MHT	60	\$312.00	0.1
	Other Markets		1,640		2.2
	Total		4,350	\$218.95	6.0



COMMERCIAL AIR SERVICE TECHNICAL REPORT

SUB-APPENDIX C

Appendix C-1 2010 DLH Top 20 Origin-Destination Passengers & Average Fares								
Rank	Destination	Code	Passengers	Awrage Fare (\$)	Passengers Per Da Each Way			
1	Las Vegas McCarran International Airport	LAS	34,790	\$130.56	47			
2	Orlando Sanford International Airport	SFB	22,460	\$86.65	30			
3	Chicago O'Hare International Airport	ORD	10,080	\$106.66	13			
4	Phoenix International Airport	PHX	8,490	\$185.89	11			
5	Denver International Airport	DEN	7,200	\$160.17	9			
6	Orlando International Airport	MCO	6,450	\$166.14	8			
7	Detroit Metro Wayne County Airport	DTW	5,990	\$271.47	8			
8	Seattle/Tacoma International Airport	SEA	5,760	\$204.44	7			
9	Atlanta Hartsfield-Jackson International Airport	ATL	5,740	\$228.06	7			
10	Washington National Airport	DCA	5,690	\$221.86	7			
11	Los Angeles International Airport	LAX	5,620	\$209.76	7			
12	New York LaGuardia Airport	LGA	4,880	\$204.33	6			
13	Boston Logan International Airport	BOS	4,830	\$195.73	(
14	Dallas/Ft. Worth International Airport	DFW	4,820	\$196.17	(
15	San Francisco International Airport	SFO	4,780	\$212.36	(
16	Ft. Myers/Southwest Florida International	RSW	3,880	\$160.97	4			
17	Houston Intercontinental Airport	IAH	3,820	\$260.67	4			
18	Portland International Airport	PDX	3,510	\$220.99	2			
19	San Diego International Airport	SAN	3,240	\$216.96	2			
20	Baltimore/Washington International Airport	BWI	3,220	\$210.77	2			
	Other Markets		119,830		164			
	Total		275,080	\$190.51	376			



COMMERCIAL AIR SERVICE TECHNICAL REPORT

Appendix C-2 2010 RST Top 20 Origin-Destination Passengers & Average Fares

				P	assengers Per Day
Rank	Destination	Code	Passengers	Average Fare (\$)	Each Way
1	Chicago O'Hare International Airport	ORD	27,250	\$127.29	37.3
2	Washington National Airport	DCA	7,940	\$170.46	10.9
3	Dallas/Ft. Worth International Airport	DFW	6,410	\$160.06	8.8
4	New York LaGuardia Airport	LGA	6,010	\$187.96	8.2
5	Phoenix International Airport	PHX	5,840	\$177.53	8.0
6	Las Vegas McCarran International Airport	LAS	5,790	\$133.54	7.9
7	Detroit Metro Wayne County Airport	DTW	5,490	\$188.60	7.5
8	Boston Logan International Airport	BOS	5,480	\$178.87	7.5
9	Atlanta Hartsfield-Jackson International Airport	ATL	5,220	\$171.67	7.2
10	Orlando International Airport	MCO	5,100	\$151.87	7.0
11	Denver International Airport	DEN	4,430	\$139.08	6.1
12	Los Angeles International Airport	LAX	3,250	\$210.35	4.5
13	San Francisco International Airport	SFO	3,140	\$230.34	4.3
14	Philadelphia International Airport	PHL	2,810	\$201.18	3.8
15	Tampa International Airport	TPA	2,620	\$165.39	3.6
16	Seattle/Tacoma International Airport	SEA	2,600	\$222.92	3.6
17	Raleigh/Durham International Airport	RDU	2,480	\$215.00	3.4
18	Houston Intercontinental Airport	IAH	2,410	\$211.28	3.3
19	Austin International Airport	AUS	2,390	\$215.06	3.3
20	Westchester County Airport	HPN	2,350	\$146.37	3.2
	Other Markets		94,770	•	129.8
	Total		203,780	\$183.80	279.2



COMMERCIAL AIR SERVICE TECHNICAL REPORT

SUB-APPENDIX D

Background on the Reauthorization Bill

- \$188.0 million for the Essential Air Service (EAS) program through FY 2013. Under current law, \$77 million is authorized to be appropriated for the EAS program each year. The new proposal phases the program by providing an authorization of \$98 million for the program in FY 2011, \$60 million in 2012, and \$30 million in 2013. No appropriations would be authorized after 2013. The bill would save \$302 million over the 2011-2016 period. Alaska and Hawaii would be exempt.
- Eliminating \$188.0 million in annual EAS program funding.
- House bill's repeal of the National Mediation Board's decision last year to change air and rail labor group voting rules to lower the threshold for unionization.

In terms of EAS, the FAA funding breakdown was attributed to a House Republican attempt to eliminate \$16.5 million in EAS subsidies by requiring a 90-mile driving minimum to the nearest airport with commercial air service. The proposal cut 13 airports out of the program including Morgantown, WV, Athens, GA, Glendive, MT, Alamogordo, NM, Ely, NV, Jamestown, NY, Bradford, PA, Hagerstown, MD, Jonesboro, AR, Johnstown, PA, Franklin/Oil City, PA, Lancaster, PA, and Jackson, TN. House Republicans also wanted to eliminate any airport that was receiving subsidies of more than \$1,000 per passenger.

Republicans achieved the subsidy cuts in the final law, but with a major caveat: Transportation Secretary Ray LaHood has the authority to continue subsidized service to the 13 communities in question if he decides it is necessary.

As expected, the Transportation Secretary waived the cuts subsidizing the 13 aforementioned airports in exchange for the Senate passing the House version of the funding bill that included them. The House Transportation and Infrastructure Committee Chairman John Mica and other Republican leaders, were of the opinion that the Transportation Secretary should only waive airports where "geographic characteristics" make it difficult to drive to another airport within 90 miles, as the law was written. They also called for complete transparency as waivers are requested with written justification. More debate on this subject is expected in the fall when multi-year reauthorization bill is debated.



COMMERCIAL AIR SERVICE TECHNICAL REPORT

¹ An IATA airport code, also known an IATA location identifier, is a three-letter code designating many airports around the world, defined by the International Air Transport Association ("IATA").

^{II} Passenger boarding (enplanement) data for U.S. Airports is extracted from the Air Carrier Activity Information System ("ACAIS"), a database that contains revenue passenger boarding and all-cargo data from the Federal Aviation Administration (the "FAA")

Bullhead City, AZ, is a market served seasonally from INL by Sun Country Airlines on a charter basis.

^{iv} Bullhead City, AZ, is a market served seasonally from INL by Sun Country Airlines on a charter basis.

^v Bullhead City, AZ, is a market served seasonally from INL by Sun Country Airlines on a charter basis.

vi Airports Council International-North America (ACI-NA)

vii Airports Council International (ACI)

Appendix E



AIRPORT FACILITY NEEDS SHEETS AND REPORT CARDS

Appendix E can be found in Book 2 of the SASP or online via the SASP Planning Toolbox.

Appendix E



AIRPORT FACILITY NEEDS SHEETS AND REPORT CARDS

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UNIT COST ASSUMPTIONS

Overview

The assumptions that were used to determine quantities and the resulting unit prices for categories listed in the Project Needs Summary Estimated Costs for each airport are described below. The categories are from the Minnesota Airport Project Priority Equation with the two letter codes representing the "Type Points (T)" from the equation. Unit prices for construction related items include average soft costs such as preliminary studies, environmental reviews, design, and construction administration.

CO – Construction

Apron (For Based Aircraft Per Square Yard)

The following criteria were used to estimate the unit price for a concrete apron to serve large aircraft.

- No Removals
- Excavation Depth 20" under the apron
- Typical Concrete Apron section:
 - o 12" Granular Borrow
 - o 8" P-209 Aggregate Base
 - o 8" P-501 doweled Concrete
- Joint sealant
- Tie-downs

The resulting estimated unit price for a concrete apron for based aircraft is \$165 per square yard.

Transient Apron (Per Square Yard)

The following criteria were used to estimate the unit price for a bituminous apron to serve transient small aircraft.

- No Removals
- Excavation Depth 20" under the apron
- Typical Bituminous apron section:
 - o 12" Granular Borrow
 - o 8" P-209 Aggregate Base
 - o 4" P-401 Bituminous

The resulting estimated unit price for a bituminous apron for transient aircraft is \$32 per square yard.

DV (Development Land)

This item is for land acquisition with costs obtained from CIPs.



UNIT COST ASSUMPTIONS

EX (Extension/Expansion)

For purposes of the SASP and in accordance with MnDOT's classification system, only the extension/expansion of taxiways are listed under the EX code.

Taxiway (Lengthening Per Square Yard)

The width of existing taxiways will vary at different airports. Therefore, the unit price for taxiway lengthening was developed on a square yard basis, which allows the taxiway width to be taken into account when an estimated cost for lengthening of a taxiway is determined. The following criteria were used to determine the unit price per square yard.

- Saw cut existing end of bituminous taxiway
- Excavation Depth 20" under the taxiway
- Typical section:
 - o 12" Granular Borrow
 - o 8" P-209 Aggregate Base
 - o 4" P-401 Bituminous
- Seal joint between old and new bituminous

The resulting estimated unit price per square yard for lengthening a taxiway is \$32.

FF (Fuel Farm Development - Per Gallon)

Previous costs for fueling systems were used to develop an average estimated cost for new above ground fueling systems. The estimated unit cost includes the following criteria.

- Above ground tank
- Concrete containment below the tank
- Self-service pumping facility

The resulting estimated unit price for a new fueling facility was determined to be \$25/gallon.

IM (Improvements)

• Runway, Taxiway, and Apron Maintenance

The estimated costs for these were obtained from MnDOT for each airport.

Runway Extension/Expansion

Lengthening and/or widening of a runway are two extension/expansion options for which estimated unit prices were determined.



UNIT COST ASSUMPTIONS

Runway Lengthening (Per Square Yard)

The width of existing runways will vary at different airports. Therefore, the unit price for runway lengthening was developed on a square yard basis, which allows the runway width to be taken into account when an estimated cost for lengthening of a runway is determined. The following criteria were used to determine the unit price per square yard.

- Saw cut existing end of bituminous runway
- o Excavation Depth 20" under the runway
- Typical section:
 - 12" Granular Borrow
 - 8" P-209 Aggregate Base
 - 4" P-401 Bituminous
 - Seal joint between old and new bituminous

The resulting estimated unit price per square yard for lengthening a runway is \$32.

Runway Widening (Per Square Yard)

The length of existing runways varies. Therefore, the unit price for runway widening was developed on a square yard basis, which allows the runway length to be taken into account when an estimated cost for widening of a runway is determined. The following criteria were used to determine the unit price per square yard.

- Saw cut existing edge of bituminous runway
- o Excavation Depth 20" under the runway
- Typical section:
 - 12" Granular Borrow
 - 8" P-209 Aggregate Base
 - 4" P-401 Bituminous
- Seal joint between old and new bituminous

The resulting estimated unit price for widening of a runway is \$33 per square yard.

IN (Instrument Approach)

• ILS (Instrument Landing System – Per Each)

Costs for this item were obtained from CIPs and/or MnDOT.

• FAA ILS Monitoring (Per Each)

The following criteria were used for determining an estimated cost for an airport's ILS to be certified by the FAA as an alternate airport.

- Telephone hardline 2,000 feet
- Cost per foot for telephone line \$3

The resulting estimated unit price for each monitoring system is \$6,000.



UNIT COST ASSUMPTIONS

LI (Lighting)

Runway

For the SASP, only runway lighting was identified as a need. The type of runway lighting will depend upon the type of runway. Following are estimated costs for the three types of runway lighting. In addition, it was assumed that all runway lights would be replaced for any runway being widened.

HIRLS (Per Light, Per 200 Feet)

The following criteria were used in determining an estimated unit cost for HIRLS every 200' along the edge of a runway.

- o One light every 200 feet on each side of the runway.
- Estimated cost for one light is \$1,350
- Estimated cost for wiring for one light is \$450

The resulting estimated unit price for HIRLS on both sides of a runway every 200 feet is \$3,600

MIRLS (Per Light, Per 200 Feet)

The following criteria were used in determining an estimated unit cost for MIRLS every 200' along the edge of a runway.

- o One light every 200 feet on each side of the runway.
- o Estimated cost for one light is \$650
- Estimated cost for wiring for one light is \$450

The resulting estimated unit price for MIRLS on both sides of a runway every 200 feet is \$2,200

LIRLS (Per Light, Per 200 Feet)

The following criteria were used in determining an estimated unit cost for LIRLS every 200' along the edge of a runway.

- o One light every 200 feet on each side of the runway.
- Estimated cost for one light is \$550
- o Estimated cost for wiring for one light is \$450

The resulting estimated unit price for LIRLS on both sides of a runway every 200 feet is \$2,000

Taxiway

For the SASP, taxiway lighting was only identified as a need where a taxiway extension to an existing lighted taxiway was identified. For a taxiway extension, an estimated cost of \$4,000 per 1,000 feet of extension was used.

MA (Master Plan)

All planning related to airports has been included under this category with estimated costs identified below.

ALP (Airport Layout Plan)

The estimated cost for preparing an ALP varies by the type of airport and is:

- Landing Strip \$60,000
- Intermediate \$190,000
- Key \$320,000



UNIT COST ASSUMPTIONS

Master Plan

The estimated cost for preparing a Master Plan varies by the type of airport and is:

- Landing Strip \$45,000
- Intermediate \$100,000
- Key \$150,000

Other

Estimated costs for the following additional planning related studies have been included under "Other" within the project needs cost summary.

MS (Miscellaneous)

• Buildings

Estimated costs were developed for the following two types of buildings based on the need of an airport.

Administration Building (Per Each)

The following criteria were used to determine an estimated total cost for an administration building.

- Building 30 foot x 40 foot including electrical, HVAC, parking, and utilities
- Total unit price including parking and utilities \$130 per square foot

The resulting estimated total unit cost for an administration building is \$156,000.

Restrooms (Per Facility)

The total estimated cost to provide a single room restroom facility is \$15,000.

Hangars

A unit price was estimated for T-Hangars, Conventional Hangars, and Site Preparation. Additional considerations in developing SASP costs for hangars included the following assumptions:

- T-Hangars The smallest T-Hangar that would be constructed would provide space for four single engine aircraft.
- If less than 4 aircraft require hangar space, a conventional hangar is assumed for each aircraft.
- It was recognized that aircraft vary in size and space needs within a hangar. For this reason, the average space for a single aircraft within a conventional hangar was assumed to be 1,000 SF.
- The term "Unit" is used in the hangar cost estimates to reflect the storage area of a single aircraft.



UNIT COST ASSUMPTIONS

T-Hangars (Per Unit)

It was assumed that the smallest 4 unit T-Hangar would be a nested T-Hangar with an average dimension of 51' wide x 105' long (5,355 square feet). The unit price for an average four unit T-Hangar was developed based on the following assumptions.

- Electrical Minimal overhead lighting and outlets throughout the building
- No heating or plumbing
- Building Steel roof, steel siding, and wood framed with no windows
- Doors Each unit within the T-Hangar has a single man door and an accordion type hangar door
- Site preparation including hangar floor and apron are not included in the unit price

The resulting estimated total cost for a four unit T-Hangar is \$182,000, which results in an estimated price of \$45,500 per unit (aircraft).

T-Hangar Site Preparation (Per Unit)

Site preparation for a four unit T-Hangar was assumed to include the following items:

- Excavation depth 18" over the entire footprint of the building and apron
- Typical section under building and exterior aprons:
 - o 12" Granular Borrow
 - o 8" Aggregate Base
 - o 6" Concrete
- Apron Four 20' wide aprons extending out a distance of 20 feet.

The resulting estimated total cost for site preparation for a four unit T-Hangar is \$90,000, which results in an estimated price of \$22,500 per unit (aircraft).

Conventional Hangars (Per Unit)

The average dimension for a Conventional Hangar was assumed to be 100' wide x 100' long (10,000 square feet). The unit price for an average Convention Hangar was developed based on the following assumptions.

- Electrical Full building service and wiring throughout the building
- Heating, plumbing, and AC included
- Water and sanitary services included
- Interior office room
- Building Steel roof, steel siding, large span structural steel framing, and insulated with four windows.
- Doors –Two man doors and accordion type hangar door
- Site preparation including hangar floor and apron are not included in the unit price

The resulting estimated total cost for a Conventional Hangar is \$950,000, which results in an estimated price of \$95,000 per 1,000 SF of space for one unit (aircraft).



UNIT COST ASSUMPTIONS

Conventional Hangar Site Preparation (Per EA Unit and/or SF)

Site preparation for a four unit T-Hangar was assumed to include the following items:

- Excavation depth 18" over the entire footprint of the building and apron
- Typical section under building and exterior aprons:
 - o 12" Granular Borrow
 - o 8" Aggregate Base
 - o 6" Concrete
- Apron Extends out 35 feet from the front, along 80% of the front side of the hangar.

The resulting estimated total cost for site preparation for a 10,000 SF Conventional Hangar is \$120,000, which results in an estimated price of \$12,000 per 1,000 SF of space for one unit (aircraft).

OB (Obstruction Removal)

It was assumed existing approaches that do not meet the SASP recommendations are restricted from being enhanced by obstructions. Based on this assumption, the following average estimated costs for removal of obstructions such as trees, buildings, and roads were used where an enhanced approach is recommended.

- Landing Strip and Intermediate Airports = \$100,000
- Key Airports = \$600,000.

If an airport had identified obstruction removal costs in their CIP, the CIP costs were used.

PA (Parking – Per Automobile)

Two separate unit prices were developed for this category. The first unit price is for the construction of a major parking lot, having curb and gutter and a full storm sewer system. The second is for the construction of a minor parking lot, having no curb and gutter and a minor storm sewer system. The following criteria were used to determine the unit prices for the two types of parking lots.

- Average space required for a car and associated drive lane is 300 square feet
- Removal of existing infrastructure on major lot and no removals on minor lot
- Excavation Depth 18" under the parking lot
- Typical section:
 - 12" Granular Borrow
 - 8" P-209 Aggregate Base
 - 4" P-401 Bituminous
- Full storm sewer system for major lot and minimal storm sewer for minor lot
- Pavement striping
- Curb and gutter on major lot and none on minor lot
- Electrical and landscaping on major lot and none on minor lot

The resulting estimated unit price for a major automobile parking lot is \$3,450 per automobile and \$1,850 per automobile for a minor parking lot.



UNIT COST ASSUMPTIONS

SE (Security Improvements)

Only fencing of an airport has been included as a requirement and resulted in an estimated cost within the SASP.

• Fencing (Per Each)

The following criteria were used to determine an estimated cost for providing either a partial or total fence around an airport.

- Partial fence length 2 miles
- Total fence length 5 miles
- Fence height 10 feet
- Pedestrian gates 4 for partial fence and 8 for full fence
- Double swing gates 4 for partial and 8 for full fence

The resulting estimated total cost for a partial fence is \$166,400 and \$412,000 for a full fence.

SZ (Safety Zone (RPZ))

Zoning is the only item identified within this category within the project priority equation.

Zoning Ordinance (Per Each)

The estimated cost for developing a zoning ordinance varies by the type of airport and is:

- Landing Strip \$3,000
- Intermediate and Key \$15,000

VI (Visual Approach Aids)

Estimated costs were developed for the following visual approach NAVAIDS.

MALSR (Per Each)

The total estimated unit price for a MALSR with a building on one end of a runway is \$550,000

PAPI (Per Each)

The following criteria were used in estimating the cost of a 4 box PAPI for each runway end.

- 4 box PAPI
- 3,000 feet of wiring

The resulting estimated unit price for each runway end is \$43,500. This results in a total unit price of \$87,000 per each runway where a PAPI would be installed on each runway end.

REILS (Per Each)

The total estimated unit price for a REIL on the end of a runway is \$12,000. This results in a total unit price of \$24,000 per runway where a REIL would be installed on each runway end.



UNIT COST ASSUMPTIONS

Rotating Beacon (Per Each)

The following criteria were used in estimating the cost of a rotating beacon.

- Cost for beacon on tip down pole and installation with a 15' deep by 36" diameter concrete base -\$30,000
- Estimated cost for electrical conduit and wire to site \$2,000

The resulting estimated total unit price is \$32,000 per each.

WX (Weather Reporting Equipment)

The following two items were identified for inclusion within the SASP under this category.

• Automated Weather Observation Station (AWOS - Per Each)

The total estimated total cost for installation of an AWOS is \$150,000.

Windsock (Per Each)

The following criteria were used in estimating the cost of a lighted windsock.

- Windsock FAA L-807, LED, internally illuminated, size 2, style 1
- Estimated cost for installed Windsock \$7,000 for the unit and concrete base
- Estimated cost for electrical conduit and wire to site 1,000 lf at \$4.50 per foot (\$4,500)

The resulting estimated total unit price for a Windsock is \$11,500 per each.

NW (New Key Airport)

Four airports were identified for total runway and taxiway construction/extensions that would result in a change to their designation from Intermediate to Key Airport. The following items were included under this estimated cost:

- ALP and Master Plan
- Parallel Taxiway
- Perimeter Road and Fence
- 10,000 Gallon Jet-A-Fuel Tank
- FBO Hangar
- Additional Hangar space for 10 aircraft
- Terminal Building

The above items resulted in a total estimated cost of \$6,210,000. Other costs associated with changing an airport's designation are included under Runway Extension/Expansion either in the airport's CIP or in the SASP mid-term costs.

Appendix F UNIT COST ASSUMPTIONS



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Appendix G



GOALS MATRIX

SASP Goal	Statement	Strategies	Measures & Indicators	Minnesota GO	Statewide Multimodal Transportation Plan
Safety	Enable development of Minnesota's aviation system to not only enhance the overall safety of airport operations but also minimize and/or reduce aviation fatalities and injuries.	* Provide technical assistance to airport sponsors so that their airport zoning ordinances are acceptable under Minnesota's standards. All airports in the state should be zoned to protect their existing, future, and ultimate infrastructure configurations.	Percent of Airports with adequate Safety Zoning Ordinance	Integrate Safety Build to Respect Physical & Social Context	Traveler Safety Strategy: Ensure that transportation facilities are planned and maintained with consideration for the safety of all users
		* Evaluate the State's zoning standards, and consider revisions to appropriately balance public safety and provide airport compatible development opportunities near and around airports.		Build to Support Quality of Life & Prosperity	Transportation in Context Strategy: Support land use plans that minimize costs by taking advantage of existing infrastructure investments
		* Approach airspace should continue to be kept clear of obstructions. Obstructions identified during airport safety inspections should be removed as soon as possible.	Percent of Airports with No Obstructions to protected airspace	Integrate Safety	Asset Management: Strategically manage airspace
		* Airport sponsors should continue to acquire land to control and maintain the State Clear Zones (an area similar to the FAA Runway Protection Zone or RPZ) and achieve compliance with MnDOT Office of Aeronautics' Clear Zone Policy.		Integrate Safety	
		* Assist and collaborate with the entities and agencies that utilize the aviation system to protect and enhance local, regional and state safety including but not limited to firefighting, search and rescue, border protection, homeland security and air medical transport.	Percent of Airports with AdequateProximity to Weather Reporting	Use Partnerships	
		* Enhance delivery of medical resources to the critical trauma centers, and life- saving facilities throughout the state that play a critical role in preventing death following traumatic injury.	EMS Response Time Coordination (under development)	Ensure Accessibility	Traveler Safety Strategy: Work with emergency medical and trauma services to reduce response time and increase survivability
		* Support air medical providers' ability to save lives and increase chances of survival in the minutes and hours following traumatic injury – a period commonly referred to as the "Golden Hour".			
		* Support MnDOT's continued efforts in the Toward Zero Deaths (TZD) initiative and work collaboratively with proponents to incorporate all modes, including aviation, into the initiative.	Number of Aviation Accidents and Fatalities in Minnesota	Use Partnerships Integrate Safety	Traveler Safety Strategy: Increase participation in TZD and work together to improve safety for all modes
Mobility and	Ensure the people and businesses of Minnesota have convenient access to the air transportation network.	* Maintain and enhance the critical air connections for the people, products, and businesses of Minnesota to markets and resources outside the state and country.	Airports with Adequate Approaches for Classification	Emphasize Reliable Predictable Options	<i>Critical Connections Strategy:</i> Work together to ensure the people and businesses of Minnesota have convenient access to the air transportation network
		* Develop a comprehensive strategy to identify and address Americans with Disabilities Act (ADA) concerns within the system.	Proximity to Alternate	Ensure Accessibility	
		* Provide viable connections to outstate by maintaining or improving airline services in Greater Minnesota, where appropriate. In doing so, collaborate with and support efforts of the Local Air Service Action Committee (LASAC).	Percent of Population near Airline Service Airport (60 Minutes Travel Time) Non-Stop Destinations Originating Passengers	Ensure Connections Use Partnerships	Critical Connections Strategy: Work together to define priority networks based on connectivity and accessibility
		* Consider feasibility of increasing airline connections for Greater Minnesota		Emphasize Reliable Predictable	
		airports with surface transportation options.		Options	
		* MnDOT Aeronautics will host periodic Air Service Summits to bring together aviation stakeholders in an effort to share critical air service information and develop specific strategies concerning air service in the state.		Use Partnerships Leverage Investments	Critical Connections Strategy: Work together to improve freight operations and connections for better access to the transportation system
		* Monitor changes to the federal Essential Air Service (EAS) program (subsidies for commercial airline service to Minnesota airports) and work with stakeholders to develop recommendations for an EAS program that is both effective and can withstand scrutiny.		Strategically Fix the System Ensure Connections	

APPENDIX G GOALS MATRIX

Appendix G

GOALS MATRIX



SASP Goal	Statement	Strategies	Measures & Indicators	Minnesota GO	Statewide Multimodal Transportation Plan
Financial Opportunity and Responsibility	Improve system airports' ability to become more financially sustainable, attract appropriately planned economic development opportunities, and fit into the context of the community from which it receives support.	* Develop, in cooperation with system airports, new and innovative ways to generate revenues that ultimately bring them closer to self-sufficiency.		Leverage Investments	Asset Management: Keep Minnesota's transportation system on a sustainable track for the future
		* Collaborate with the state's aviation stakeholders to continue to provide predictable funding for the State Airports Fund.		Use Partnerships	
		* Consider support of modified construction standards to reduce project cost		Leverage for Economic	Critical Connections Strategy: Apply lower cost, high beneft
		(e.g., warm mix paving applications).		Competitiveness	investments to maintain the system
		* Inventory comprehensive plans of communities surrounding airports to advise on airport compatible development. A community and its airport should have compatible plans so that they foster growth for each other.	Percent of Airports with Up-to- Date Planning Documents	Build to Respect Physical & Social Context	
		* Consider the role of airports in supporting and furthering Context Sensitive		Build to Respect Physical &	Tin C: Plan, design, develop, and maintain projects in a way
		Solutions for sponsor communities. * Support local and community efforts to create jobs with a particular focus on	Percent of Airports within 50 nm	Social Context Build to Support Quality of	that is consistent with the principles of CSS
		enhancing the state's aviation sector.	of Aircraft Repair and	Life & Prosperity	
		* Support and promote system airport's efforts to pursue special or unique funding opportunities such as the joint MnDOT and Department of Employment and Economic Development (DEED) Transportation Economic Development	Maintenance Facilities Percent of Population near Cargo	Leverage Public Investment for	Transportation in Context Strategy: Support statewide economic vitality and create and maintain jobs through transportation infrastructure investments
		(TED) program designed to address both the state's transportation system needs and economic development objectives.		Multiple Purposes	
Operations	Ensure the system is operated in a manner that users can rely upon.	* Identify the areas of the State suitable, from an aeronautical perspective, for tall structure siting and consider similar analysis for other potential airport incompatible land uses.		Leverage to Support Energy Independence	
		* Upgrade the state's critical navigation facilities while allowing for reduction and/or phase out of unused or outdated components.	Percent of Airports with Up-to- Date Navigation Systems	Strategically Fix the System	Critical Connections Strategy: Apply lower cost, high beneft investment strategies to maintain and improve the
		* Develop a method for more precise life-cycle tracking of the navigation system.			multimodal transportation system
		* Work with MnDOT's Office of Transportation and Data Analysis to research available technologies to more precisely analyze activity at airports. These technologies may be auditory or visual, able to recognize differing aircraft types, and should be tested on a limited scale to help determine accuracy.	Percent of Airports with Adequate Proximity to Alternate Airport	Build to Maintainable Scale	System Security Strategy: Collaborate with emergency plannir efforts to ensure effcient and coordinated response (Additionally many airports are developing Emergency Response Plans)
		* Work to ensure FAA efforts to incorporate Unmanned Aircraft Systems (Unmanned Aerial Vehicles) into the Minnesota's airspace are pursued in a safe and transparent manner.		Ensure Accessibility	Accountability, Transparency, and Communication Strategy: Work with system users to understand todays needs and what will matter tomorrow
Preservation	Ensure the structural integrity of existing airport infrastructure to meet current needs of the system and not compromise what is needed in the future.	* Work collaboratively with airport sponsors to align maintenance and preservation needs with the state's funding priorities.	Percent of Airports with Good Pavement Condition	Build to Maintainable Scale	
		* Periodically review the State's project prioritization formula and consider recommendations for adjustments that are developed in a collaborative manner.		Build to Affordably Contribute	Asset Management: Prioritize maintaining and operating asset on identified priority networks
		* Explore a risk based approach to making future investment decisions.		Strategically Fix the System	
		* Ensure that construction projects are justified and appropriately sized.	Percent of Airports with Up-to- Date Planning Documents	Ensure Connections	Asset Management: Keep Minnesota's transportation system on a sustainable track for the future

APPENDIX G GOALS MATRIX