Business Item

Transportation Committee

Item:2010-43

Meeting date: January 25, 2010

Metropolitan Council meeting: February 10, 2010

Date:	January 19, 2010
Subject:	2030 Aviation System Technical Report
District(s), Member(s):	All Districts
Policy/Legal Reference:	MS 473.145, 473.165, 473.621 Sd. 6&7
Staff Prepared/Presented:	Arlene McCarthy, Director MTS (651-602-1754) Amy Vennewitz, Dep. Director Finance & Planning (651-602-1058) Connie Kozlak, Manager Transportation Planning (651-602-1720) Chauncey Case, Senior Planner - MTS/Aviation (651-602-1724)
Division/Department:	Metropolitan Transportation Services

Proposed Action

That the Metropolitan Council adopt the 2030 Aviation System Technical Report for transmittal to the FAA and for use in future amendments of the *Transportation Policy Plan* (TPP).

Background

Under MS 473.611 and MS 473.165 the Council periodically updates the *Transportation Policy Plan* (TPP). In January, 2009 a Phase I update to the aviation element of the TPP occurred with revisions to the aviation policies and strategies, guidelines, review criteria and supporting text. In 2008 an FAA grant was received to conduct an 18 month aviation system study which includes new 2030 aviation forecasts and system evaluations and is documented in this Technical Report.

Rationale

The aviation system plan must be maintained to reflect current and future data, forecasts and system evaluations. A complete aviation system evaluation had not been done in this region since 1996. The pertinent information in this report will be used to prepare a Phase II update to the aviation element of the TPP later this year.

Funding

This action has no funding implications for the Council.

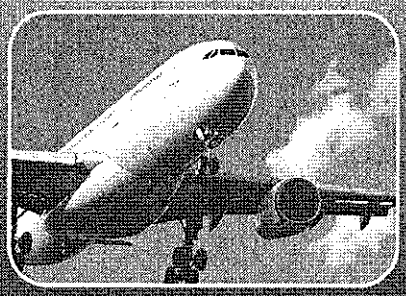
Known Support / Opposition

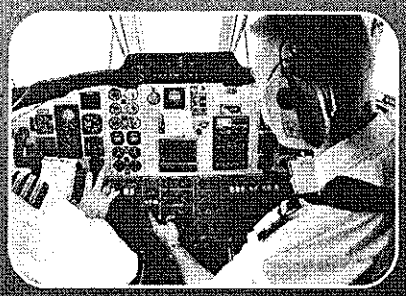
The Technical Report has been prepared with advice from the TAC Aviation Technical Task Force and has been reviewed by TAC (1-6-10) and TAB (1-20-10). Public involvement is reflected in specific recommendations of the report. Additional public review of any of this material which is incorporated into the TPP amendment will occur through the TAC/TAB review process and Council's TPP amendment process later this year.

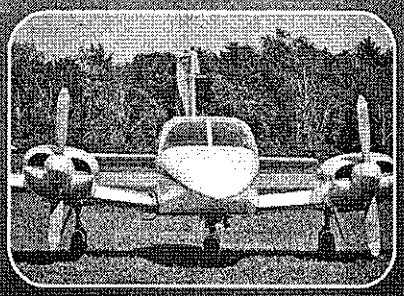
TWIN CITIES 2030

AVIATION SYSTEM TECHNICAL REPORT

EXECUTIVE SUMMARY







METROPOLITAN COUNCIL

PREPARED BY

KRAMER aerotek

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Executive Summary

This document is a technical report containing new aviation forecasts and evaluations to be used to update the Twin Cities 2030 Aviation System Plan. The aviation section of the region's Transportation Policy Plan (TPP) will be amended as appropriate to reflect the new technical information. The Twin Cities Regional Aviation System consists of 11 airports that provide aviation services to the seven county metropolitan region.

This executive summary is organized into the following sections as described in more detail later:

- Inventory
- Aviation Industry Trends
- Forecasts
- Peer System Comparisons
- Airport Classification
- System Performance Evaluation
- Ground Travel and Airport Service Area Evaluation
- System Changes and Improvements
- System Financing

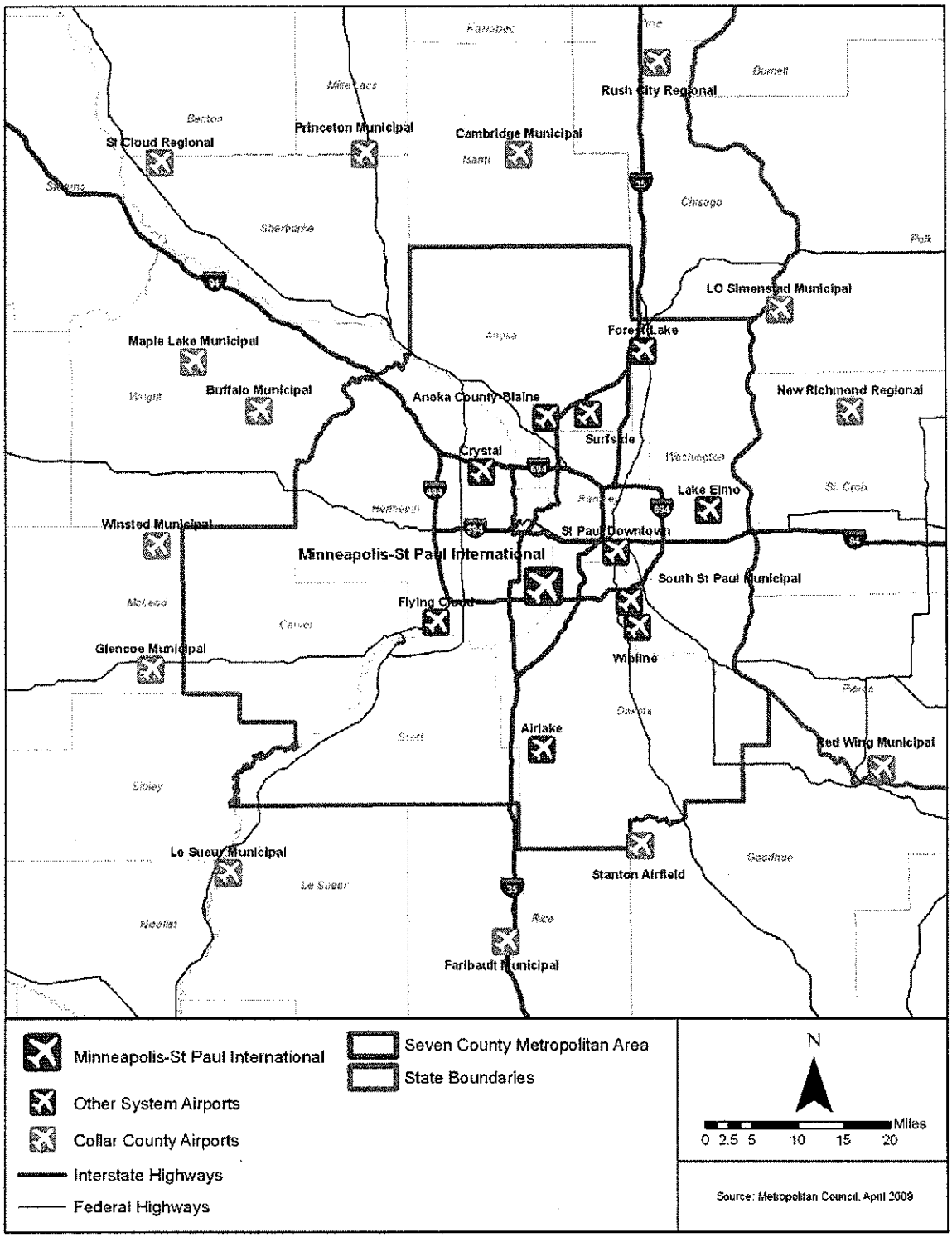
Inventory

The inventory of existing conditions is used to establish a baseline of facilities and services available at the study airports. Exhibit ES-1 shows the study airports along with the seven county metropolitan region. The eleven study airports are:

- Minneapolis-St. Paul International
- Airlake
- Anoka County-Blaine
- Crystal
- Flying Cloud
- Lake Elmo
- South St. Paul
- St. Paul Downtown
- Surfside Seaplane Base
- Wipline Seaplane Base

This inventory documented the facilities and services available at the 11 system airports. In addition to summarizing the infrastructure of each airport, basic background information on each airport was also summarized, including ownership and historic aviation activity in the form of based aircraft and operations. The airspace in the metropolitan region was also summarized, with an explanation of how the FAA controlled the airspace to enhance operations around Minneapolis-St. Paul International.

Exhibit ES-1: Study Airports



Demographic trends in the Twin Cities region were also examined with a look at expected levels of population, employment, and income projected through 2030.

Aviation Industry Trends

Recent trends in the aviation industry, both general aviation and commercial aviation, were examined. Starting from a national perspective, the challenges faced by the aviation industry, and commercial aviation in particular, were illustrated.

Since the deregulation of the airline industry in 1978, volatility in the industry has grown. Airlines as a whole have operated above their breakeven load factors as often as they have fallen below it in the past 20 years. Numerous recent trends have added to that volatility.

The fluctuations in fuel prices contributed significantly to airline difficulties, with crude oil peaking at $160 per barrel in July 2008 after rising from $90 per barrel in August 2007. By November 2008, it was down to $61 per barrel. This rise in crude oil prices more than offset the efforts by airlines to reduce costs through restructurings, downsizing, new labor agreements, and productivity gains.

Additionally, the recent economic recession resulted in increased unemployment, which helped to drive down air travel demand. Amidst this airline industry downturn, the commercial carriers responded by attempting to raise revenues in various ways. When increased fares met with only modest success, airlines resorted to surcharges and new fees to generate additional income. These fees included fuel charges, extra costs for checking baggage, charges for onboard food/snacks, and financial penalties for ticket changes.

Airlines also have reacted to the economic downturn by slashing seat capacity and eliminating service on unprofitable routes. By one estimate, approximately 500 airliners were grounded by the end of 2008.

The Twin Cities commercial airport – Minneapolis-St. Paul International (MSP) – has weathered these trends and faces additional challenges and uncertainties. The airport's main airline, Northwest Airlines, underwent a period of reorganization when it entered bankruptcy in September 2005 and emerged in May 2007. The ongoing merger with Delta Air Lines raises questions of what role the airport will play in the merged airlines network. Further complicating the situation at MSP is the entry of low-cost carrier Southwest Airlines in March 2009. These events make anticipating future commercial activity at MSP difficult.

General aviation has also experienced challenges over the years. As with commercial aviation, high fuel prices have contributed to the overall decline in general aviation activity. Even before the downturn in the economy, the general aviation airports of the Twin Cities region were experiencing a decline in general aviation activity. From 2000 to 2007, general aviation operations dropped by 46 percent at the six general aviation airports owned by the Metropolitan Airports Commission.

Forecasts

Starting with the aviation trends identified previously, forecasts of aviation activity were developed for the regional airport system and collar county airports. The forecasts were broken down into general aviation and commercial aviation sectors. General aviation in the metropolitan area is expected to continue its downward trend for the near term before reversing and recovering to current activity levels by the end of the 20-year forecast period. Aviation activity in the outlying collar county airports is expected to be more robust, but still modest. General aviation activity in the metropolitan region is anticipated to show average annual growth between 0.1 percent and 0.2 percent. **Exhibit ES-2** shows the forecast growth in based aircraft and operations at the 11 system airports.

Exhibit ES-2: Summary Table of Based Aircraft and Operations Forecasts at the 11 System Airports

	2007	2015	2020	2030	Average Annual Growth
Total Based Aircraft	1,913	2,046	2,007	1,993	0.2%
Total Operations	641,550	612,680	639,540	663,940	0.1%

Sources: Metropolitan Airport Commission and KRAMER aerotek, inc.

Because of the significant number of unknowns surrounding the future of MSP (e.g., fuel costs, merger between Delta and Northwest, and future expansion by Southwest), it was deemed prudent to develop a number of different scenarios that could address some of these factors. As a result, four scenarios were developed in addition to a base forecast for both passenger forecasts and aircraft operations at MSP. Based on these various scenarios, MSP is expected to experience anywhere from 1.7 percent to 3.3 percent growth in enplaned passengers, as shown in **Exhibit ES-3**.

Exhibit ES-3: Forecast of Enplaned Passengers at MSP by Scenario

Scenarios	2008	2015	2020	2030	Average Annual Growth 2008-2030
Base Case	25,936,600	31,229,600	35,988,600	47,896,300	2.8%
High Fuel Cost	25,936,600	27,860,500	30,814,000	37,955,800	1.7%
Low Fuel Cost	25,936,600	32,555,500	38,056,700	52,502,900	3.3%
High Economic Growth	25,936,600	33,335,700	38,570,400	51,877,000	3.2%
Declining Connections	25,936,600	29,946,800	33,634,500	42,755,100	2.3%

Source: Metropolitan Airport Commission, interpreted by KRAMER aerotek, inc.

Aircraft operations, under the same scenarios, are expected to undergo slightly less growth. **Exhibit ES-4** shows that aircraft operations at MSP are expected to grow between 0.6 percent and 2.0 percent annually, depending upon various factors beyond the control of the airport.

Exhibit ES-4: Forecast Aircraft Operations by Scenario

Scenarios	2008	2015	2020	2030	Average Annual Growth 2008-2030
Base Case	450,000	507,700	546,900	630,800	1.5%
High Fuel Cost	450,000	449,400	469,500	514,000	0.6%
Low Fuel Cost	450,000	534,000	583,900	697,800	2.0%
High Economic Growth	450,000	546,600	591,600	688,400	2.0%
Declining Connections	450,000	484,700	512,000	571,900	1.1%

Source: Metropolitan Airport Commission, interpreted by KRAMER aerotek, inc.

Peer System Comparisons

To put the Twin Cities Regional Aviation System in perspective, it was compared to a number of peer airport systems. These peer airport systems were selected on the basis of having similar populations, and a single major commercial airport serving as a hub for an airline. It was determined that airports systems in Atlanta, Charlotte, Denver, Detroit, Philadelphia, and Pittsburgh were suitable peers. In comparing to these airports systems, it was found that:

- The Minneapolis system has an above average number of reliever airports in its system and higher levels of aircraft operations.
- The Minneapolis system of airports also has a large number of based aircraft, and based general aviation jets by comparison.

Given the merger between Delta and Northwest, other airline hubs that have experienced consolidation were examined in an attempt to draw parallels. It was noted that since 2000, American downsized its hub at St. Louis; US Airways closed its Pittsburgh hub, Delta closed its Dallas hub and has cutback Cincinnati. Following the Delta-Northwest merger, the combined airline will have a network that includes seven domestic hubs and nine regional carrier subsidiaries or code-sharing partnerships. The likelihood of further consolidation and capacity cuts are high, with MSP likely to experience cutbacks to some degree. This is expected to result in declines of passenger service as that is what similar hub reductions have experienced. Between 2000 and 2008, St. Louis enplanements dropped 55 percent; Pittsburgh's fell 50 percent; and Cincinnati's declined 25 percent.

Offsetting these hub reduction risks at MSP is possibility of service expansion by Southwest Airlines. Looking at other airports where Southwest has initiated service shows that the airline typically enters

new markets aggressively and deliberately. Denver service started in 2006 with 20 daily departures to five cities and continued in 2009 with 111 daily departures to 32 cities. Likewise, Philadelphia service began in 2004 with 14 daily departures and immediately expanded to 28 departures to 13 cities. Service build-out occurred within four years and today Southwest offers 64 daily departures to 19 cities. Should the economy improve sufficiently, it is possible that Southwest could expand to as many as 40 daily departures at MSP.

Airport Classification

An integral part of system planning is the periodic review of the roles each airport serves in the system. By identifying the role an airport plays in a system, its performance in terms of the facility and services it provides can be benchmarked against a set of defined facility and service criteria. The airports in the Twin Cities Regional Aviation System have roles assigned by various classification systems, each tailored to the specific needs of the particular system, whether it is a national, state, or regional system.

In an effort to improve upon these classification systems, a system based upon the classification method used in the last system plan was proposed. Legislative restrictions effectively limit runway lengths on most airports in the Twin Cities region, thereby constraining the roles airports in the Twin Cities region can serve. The proposed classification method, which was ultimately discarded, took into account these legislative restrictions while attempting to provide some additional differentiation over the classification method used in the last system plan.

For each airport role, a set of facility and service objectives were developed, based upon the types of aviation users the airport predominately served. These recommended objectives covered the following airside facilities, landside facilities, and services:

- Airport Reference Code
- Primary Runway Length
- Taxiway Type
- Instrument Approach
- Runway Lighting
- Approach Lighting Systems
- Visual Glide Slope Indicators
- Other Visual Aids
- Air Traffic Control Tower
- Weather Reporting
- Paved Aircraft Parking
- FBO
- Auto Parking
- Fuel
- Ground Transportation
- Food Services
- Phone
- Snow Removal

System Performance Evaluation

Using the recommended objectives identified above, each airport was evaluated based on the proposed role assigned to it under the proposed classification system. Not surprisingly, the system airports met most of their objectives. The Twin Cities Regional Aviation System is a mature and well developed airport system, with little in the way of unmet facility and service needs. This is not to say that the system does not need improvements and maintenance. There are numerous projects identified by

individual airport planning documents, as well as maintenance of current infrastructure, needed by these airports. However, from a system perspective, this study identified very few objectives that the system airports were not currently meeting. Out of all objectives, the system airport met 98 percent.

In addition to evaluating facility and service objectives, this study also examined the geographic coverage provided by the system airports.

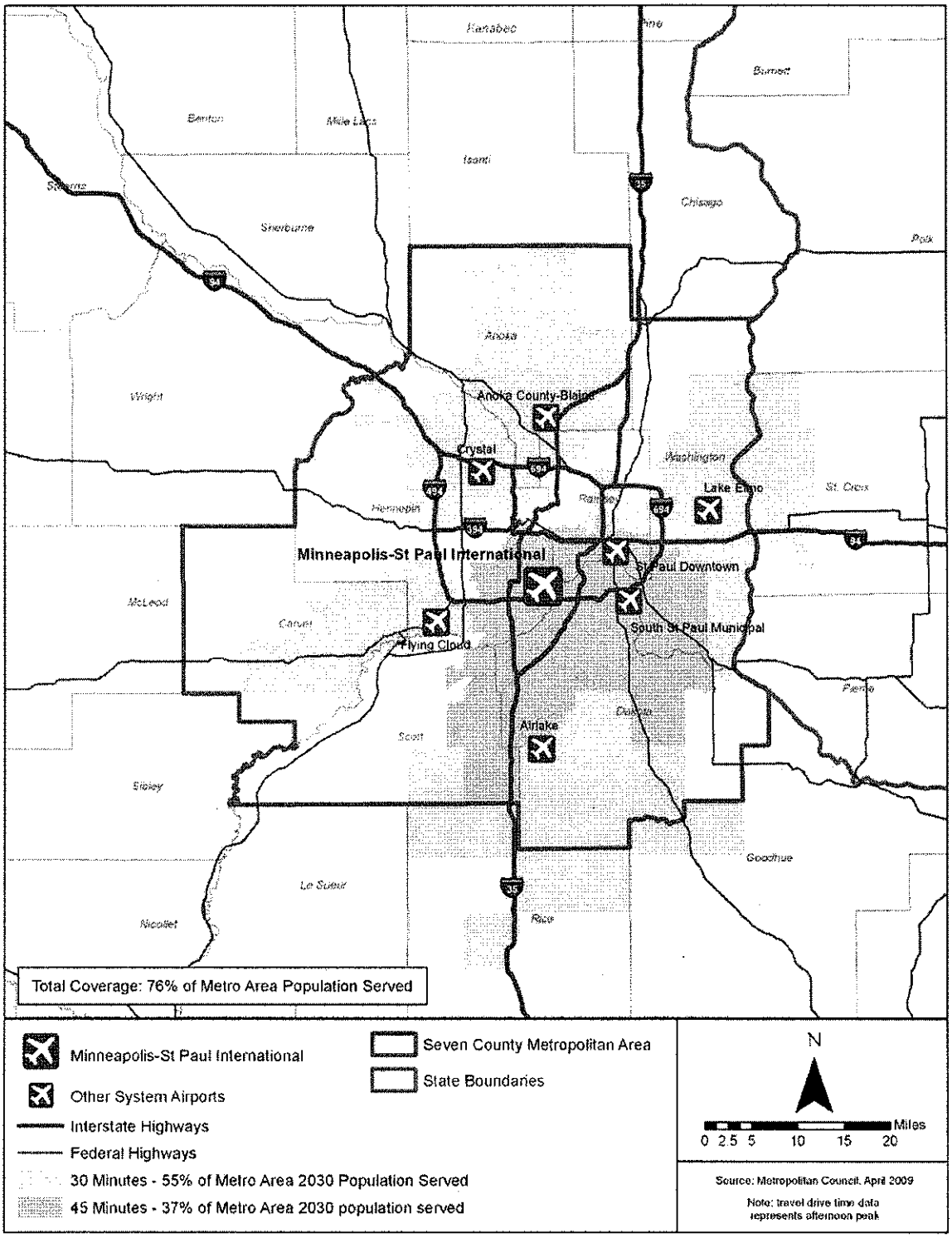
Ground Travel and Airport Service Area Evaluation

An airport system that serves the largest possible number of citizens and businesses is an important goal. The primary benchmark by which airport accessibility is measured is by their proximity to population centers. This is true not only of the Twin City's commercial service airport, which is important to businesses and individuals for airline travel worldwide, but also of its general aviation airports, which accommodate a far wider set of aviation activities. An analysis of drive times was used to evaluate the extent to which the airport system overall, as well as airports within their proposed roles, provided service to the region's population.

Overall, the system airports provide extensive coverage for the people of the Twin Cities region. Even with increasing traffic congestion, the system airports are expected to provide 30-minute access to 76 percent of the region's projected 3.7 million population in 2030, as shown in **Exhibit ES-5**.

The drive time analysis also examined whether there was still a need for a proposed new general aviation airport to the northwest of downtown Minneapolis, where a lack of service had been identified in previous planning studies. The drive time analysis showed that development of airports outside the Twin Cities Regional Aviation System provided some coverage of areas within the seven county metropolitan area. These outlying airports help to alleviate some of the demand on system airports. This additional capacity provided by collar county airports coupled with greatly reduced demand as compared with forecasts from earlier planning studies, leads to the conclusion that there is no longer a need for a new general aviation airport during the planning period.

Exhibit ES-5: All System Airports Drive Times



System Changes and Improvements

The Twin Cities Regional Aviation System is a well developed aviation system that amply serves the needs of the metropolitan region. The continued protection and maintenance of this system is an important aspect of the Twin Cities transportation infrastructure. This chapter identified a number of recommendations to further enhance the regional aviation system. Those recommendations are:

- Retain the existing regional airport classification system – the benefits of providing greater differentiation among system airports proved to be less advantageous than anticipated. Therefore, use of the existing airport classification system is recommended.
- Fulfill long term comprehensive plan objectives - the recommendations in this analysis are based on a system level examination of the Twin Cities Regional Aviation System. This type of planning is not intended to supplant planning efforts undertaken for individual airports, which take into account additional factors. However, the recommendations found in long term comprehensive plans need to be consistent with system policies and plans.
- Consider eliminating Search Area A from the Plan – when Search Area A was identified more than 20 years ago as a potential new general aviation airport site, forecast activity projected severe capacity shortfalls among the general aviation airports of the system. However, general aviation activity in the metropolitan area has not grown to the levels expected. That fact, coupled with continued urban development and capacity improvements at Buffalo Municipal Airport and other collar county airports, has reduced the need for an airport in the geographic area of Search Area A. Therefore, it is recommended that a new airport located in Search Area A be removed from further consideration for the regional airport system plan.
- Consider changing Forest Lake Airport's role – with no new airports proposed in the 2030 system update, it is important to protect and enhance existing facilities. Forest Lake represents an opportunity to accomplish this goal. The first step involves changing the role of the Forest Lake Airport from a Special Purpose Airport to a Minor Airport classification. As a Minor Airport, additional improvements would be needed to meet the recommended facility and service objectives.
- Install a lighting system at South St. Paul Municipal Airport – as the only Minor Airport in the system without any sort of approach lighting system or runway end identifier lights (REIL), it is recommended that REILs be installed on the runway.
- Examine the feasibility of intermodal connectivity options to system airports – Minneapolis has an extensive network of light rail and bus service. However, with the exception of Minneapolis-St. Paul International, none of these intermodal options serve the system airports. It is recommended that the economic feasibility of establishing intermodal service to the system airports be explored.

System Financing

In order for airports in Metropolitan Council's jurisdiction to meet their facility and service objectives outlined in this study and for the airport system to maintain its performance and function, continued investment in system airports will be needed over the 20-year planning period. Using information from various planning documents, it was estimated that the system airports will need $1.1 billion over the next 20 years to meet their maintenance needs, and local and system planning development objectives. **Exhibit ES-6** summarizes the costs for each airport category.

Exhibit ES-6: Estimated Cost of Recommended Regional System Improvements

Capital Improvement Projects	Major	Intermediate	Minor	Special Purpose	All Airports
Airfield Pavement & Lighting					
Runways	$2,800,000	$0	$13,800,000	$1,400,000	$18,000,000
Taxiways	$11,500,000	$0	$2,592,300	$1,200,000	$15,292,300
Airfield Lighting	$1,800,000	$0	$0	$180,000	$1,980,000
Pavement Maint & Rehab	$12,300,000	$4,800,000	$6,045,000	$0	$23,145,000
Visual/Navigational Aids					
Approach Lighting	$0	$0	$50,000	$50,000	$100,000
NAVAID/Radar	$5,000,000	$0	$0	$218,000	$5,218,000
Automated Weather Reporting	$0	$0	$0	$65,000	$65,000
Facilities					
Terminal Buildings	$725,185,000	$0	$0	$0	$725,185,000
Car Parking	$119,550,000	$0	$0	$0	$119,550,000
Aircraft Storage	$6,780,000	$0	$14,435,000	$250,000	$21,465,000
Aircraft Parking	$0	$0	$720,000	$0	$720,000
Other					
Fuel	$0	$0	$80,000	$0	$80,000
Noise Mitigation	$65,700,000	$0	$0	$0	$65,700,000
Utilities	$8,050,000	$1,300,000	$0	$12,000	$9,362,000
Snow Removal Equipment	$0	$0	$200,000	$0	$200,000
Other Improvements	$98,000,000	$1,800,000	$2,283,700	$1,614,800	$103,698,500
Total Airfield	$28,400,000	$4,800,000	$22,437,300	$2,780,000	$58,417,300
Total Navigational Aids	$5,000,000	$0	$50,000	$333,000	$5,383,000
Total Facilities	$851,515,000	$0	$15,155,000	$250,000	$866,920,000
Total Other	$171,750,000	$3,100,000	$2,563,700	$1,626,800	$179,040,500
Total Costs for Airport System	**$1,056,665,000**	**$7,900,000**	**$40,206,000**	**$4,989,800**	**$1,109,760,800**

Sources: MnDOT and MAC

The money for these projects will come from a variety of sources. Federal Airport Improvement Funds can be expected to provide the majority of funding for eligible projects. Other sources of funding likely include Minnesota state funds, airport revenues, and, in some cases, private funding.

Transportation Advisory Board

of the Metropolitan Council of the Twin Cities

January 25, 2010

Peter Bell, Chair
Metropolitan Council
390 Robert Street No.
St. Paul, MN 55101

Mr. Bell,

On January 20, 2010, the Transportation Advisory Board reviewed and discussed the 2030 Aviation System Technical Report.

The TAB agrees with the conclusions in the technical report and recommends that the Metropolitan Council accept the report for use in updating the Aviation Chapter of the Transportation Policy Plan. Additional information is attached to Action Transmittal 2010-02.

Sincerely,

for Bill Hargis, Acting Chair
Transportation Advisory Board

cc: Chauncey Case

Transportation Advisory Board
of the Metropolitan Council of the Twin Cities

ACTION TRANSMITTAL

No. 2010-02

DATE: January 25, 2010

TO: Metropolitan Council

FROM: Transportation Advisory Board

SUBJECT: Twin Cities 2030 Aviation System Technical Report

MOTION: The Transportation Advisory Board recommended acceptance of the attached 2030 Aviation Technical Report to the Metropolitan Council and forwards it for use in amending the Aviation Chapter of the Transportation Policy Plan.

BACKGROUND AND PURPOSE OF REVIEW: The Council periodically updates the region's aviation system plan. In 2007/2008 the aviation policies, guidelines and review criteria (Phase I) were revised for the TPP Update. The Council applied for and received an FAA planning grant to fund consultant assistance in preparing aviation forecasts and other technical materials/evaluations (Phase II) as input to amending the TPP in 2010.

TECHNICAL REPORT CONCLUSIONS: Overall, the system can be characterized as mature. Aviation demand is being accommodated by existing airports. Forecasts indicate slow growth for general aviation and no new facilities are proposed; commercial air-service growth is fluctuating and only incremental facility improvements are being envisioned. The focus is on protection, enhancement and sustainability of system facilities. Detailed individual airport plans are looking at balancing airside and landside capabilities in an environmentally and financially sustainable manner. This report makes the following recommendations at the system level:

1) Retain existing airport classification system of Major, Intermediate, Minor and Special Purpose Airports.
2) Fulfill Long Term Comprehensive Plan Objectives for each system airport.
3) Consider eliminating Search Area (A) from the system plan.
4) Consider changing Forest Lake Airport's role from Special Purpose to Minor airport.
5) Install a runway-end identifier lighting system at South St. Paul Municipal Airport.
6) Examine feasibility of inter-modal connectivity options to system airports.

ROUTING

TO	ACTION REQUESTED	DATE COMPLETED
TAC Aviation Technical Task Force	Review & Recommend	December 14, 2009
Technical Advisory Committee	Review & Recommend	January 6, 2010
TAB Policy Committee	Review & Recommend	January 14, 2010
Transportation Advisory Board	Review & Recommend	January 20, 2010
Metropolitan Council	Review and Accept	

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