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- Dual track airport planning process
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**DUAL TRACK AIRPORT
PLANNING PROCESS**

**AVIATION ACTIVITY
FORECASTS**

Metropolitan Airports Commission
September 1993



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OVERVIEW

The Dual Track Airport Planning Process was established by the Minnesota Legislature's 1989 Metropolitan Airport Planning Act. The process is being conducted by the Metropolitan Airports Commission (MAC) and the Metropolitan Council.

One track addresses ways to provide the needed airport capacity and facilities at Minneapolis-St. Paul International Airport (MSP). The other track provides the needed capacity and facilities at a new (replacement) airport located in the Dakota Search Area. A third "no build" option is also being examined, along with other feasible alternatives as they are developed. The Airport Planning Act requires the MAC and the Metropolitan Council to recommend a preferred approach to the Legislature by July 1996.

As required by the Act, the MAC has reviewed the socioeconomic and aviation assumptions incorporated in the forecasts developed in 1990 and used for the Long Term Comprehensive Plan (LTCP) for MSP. The MAC has updated these forecasts using the latest information available. The new forecasts will be used for both the MSP LTCP Update and the New Airport Comprehensive Plan so that these plans are directly comparable.

This brochure reviews the forecast update process, summarizes the results of major forecast components, and compares the updated forecasts to the previous forecasts.



SCHEDULE FOR 1989 – 1996

1989	1990	1991	1992	1993	1994	1995	1996
	New Airport Search Area Study		New Airport Site Selection		New Airport Comprehensive Plan		
			Federal/State Environmental Documents				
			Community/Economic Studies				
MSP Long Term Comprehensive Plan (LTCP)				MSP LTCP Update			
			Decision Document				
Public/Agency Coordination							

The MAC has developed this schedule, which consists of eight major elements, in order to meet the requirements set forth by the 1989 Metropolitan Airport Planning Act. The Act requires that the process be completed by 1996. At that time, the Legislature will decide how to best meet the region's future aviation needs.



NEED FOR UPDATED FORECASTS

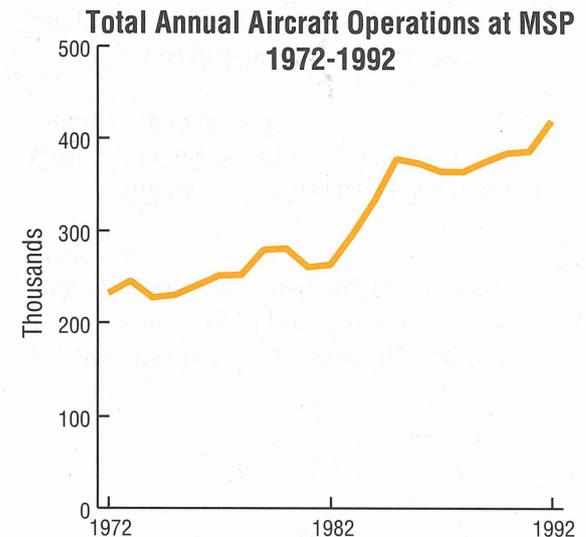
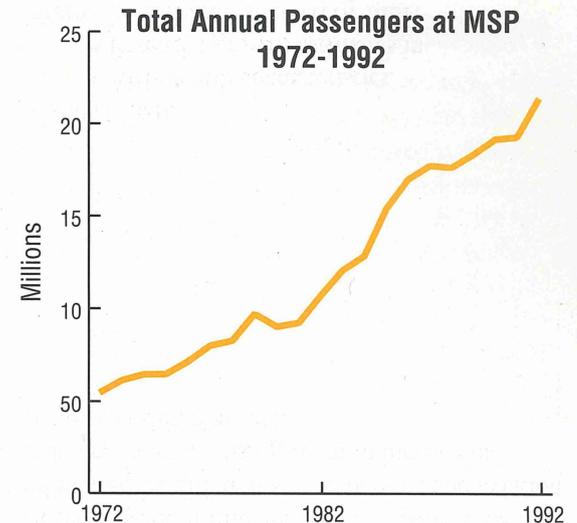
Airport planners use forecasts to help determine the facilities needed to keep the airport operating safely and efficiently. Since many facilities cost millions of dollars and can take years to develop, it is important to determine what facilities are needed, their size, where they should be located, and when they should be built.

In 1972, MSP handled about 5.5 million passengers and 231,000 aircraft operations (takeoffs and landings). By 1992 the number of passengers increased to over 21 million, while aircraft operations grew to 418,000, an increase of over 70 percent.

The forecasts used in the original Long Term Comprehensive Plan (LTCP) for MSP were

completed in 1990, using information through 1988. Since that time, there have been many changes in the aviation industry, both nationally and locally. The updated forecasts incorporate the latest available information, using 1992 as the base year. They will be used to reassess the facility requirements and alternative concepts previously developed for the MSP LTCP. These alternative concepts will be modified where needed, and a revised 2010 Development Plan and 2020 Conceptual Plan will be prepared.

For the potential replacement airport, the updated forecasts (with some possible adjustments based on the site location) will serve as the basis for preparing a comprehensive development plan.



EXPERT PANEL SESSIONS ON FORECASTS

Since October 1992, the MAC and the Metropolitan Council have convened four expert panel sessions to assist in the forecast update process. The panels consisted of airline representatives, economists, and others experienced in aviation forecasting. The first session, held Oct. 29, 1992, reviewed forecast methodologies. The second session was held Nov. 18 to discuss aviation assumptions. The third session, on Nov. 19, focused on socioeconomic assumptions.

The most recent expert panel session was held on May 27, 1993, to recommend the final assumptions, methodologies and scenarios to be used in the updated forecasts. The panel sessions provided valuable ideas and advice from many industry experts, and helped ensure that the latest trends were incorporated into the process.

A public hearing was conducted early in the forecast update process on Oct. 20, 1992, to solicit input from the general public.



AIRPORT FORECAST COMPONENTS

Aviation activity at MSP is divided into several components for purposes of developing activity forecasts, as follows:

- **Commercial Air Carriers** - This includes domestic airlines that provide scheduled service with large passenger jet aircraft.

- **Regional/Commuter Airlines** - This component consists of scheduled airlines that typically fly smaller turboprop aircraft and jets with fewer than 70 seats over shorter distances on scheduled service.

- **International and Charter** - International activity comprises all passengers and aircraft traveling between Minneapolis-St. Paul and cities outside the U.S. on scheduled nonstop flights. Charter activity includes both domestic and international passengers and flights on a non-scheduled basis.

- **Cargo** - Air freight (including small package express) and air mail comprise cargo activity. Their activity is measured in total volume (tonnage) and the number of all-cargo aircraft operations.

- **General Aviation** - General aviation (GA) includes all aviation activity except airline

and military operations. Typically, most GA activity is made up of private or corporate aircraft, ranging in size from single engine piston to private jets.

- **Military** - The Minnesota Air National Guard and the U.S. Air Force Reserve conduct military flights at MSP.

The updated forecasts address these components separately because each uses different airport facilities. In addition, the number of passengers and flights for each component are influenced by different socioeconomic and aviation industry factors, causing them to increase or decrease at different rates.



FORECAST METHODOLOGY

Each activity component was forecast using a different methodology. Statistical analyses relating socioeconomic and industry trends, market analysis of potential activity, and professional judgement were used. The following factors were incorporated into the forecast process:

- Socioeconomic trends (including income, employment and exchange rates).
- Industry changes (including the changing role of regional/commuter carriers, impact of airfield congestion, trends in airline costs and revenues, trends in aircraft size and the percentage

of seats filled).

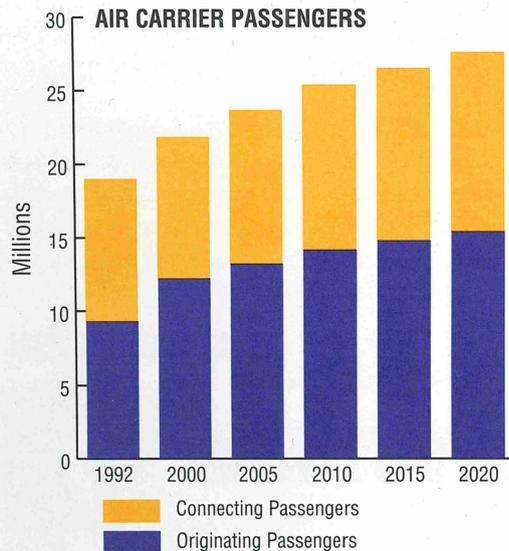
- Airline hub characteristics.
- Potential growth estimates in international markets served by MSP.
- Anticipated market share of international passengers.



FORECAST PROJECTIONS BY COMPONENT

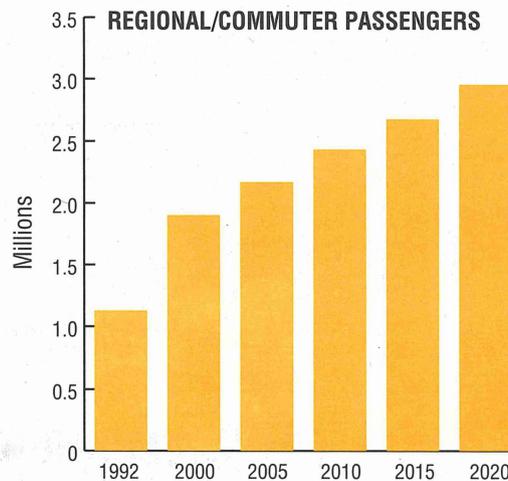
Air Carrier Passengers

Air carrier passengers are divided into two categories: origination-destination passengers and connecting passengers. Origination-destination passengers are those who begin or end the air portion of their trip at MSP. Connecting passengers are those who transfer from one flight to another at MSP. As a hub for Northwest Airlines, MSP has about 50 percent connecting passengers. In the future, this percentage is expected to decrease to 44 percent as origination-destination passengers comprise a greater share of total MSP traffic. Total annual domestic scheduled passengers are forecast to grow from 19.1 million to 27.7 million in 2020 - a 45 percent increase.



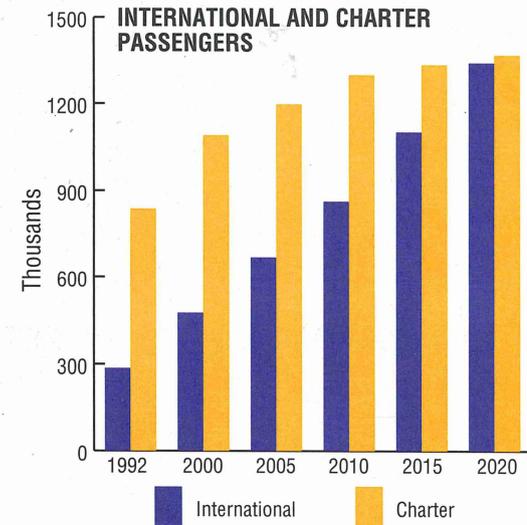
Regional/Commuter Passengers

Regional/commuter passengers are predicted to increase significantly at MSP. One reason is that large airlines are concentrating on routes where their larger aircraft can be used more efficiently and are shifting less profitable short-haul routes to their regional partners, who can better serve these smaller markets. From 1992 to 2020, regional/commuter passengers are expected to increase 160 percent from 1.1 million to nearly 3.0 million.



International and Charter Passengers

International traffic is projected to be the fastest growing segment of passengers in the nation. This trend is also anticipated at MSP. Because MSP has limited international service today, travelers must fly to another U.S. city to transfer to an international flight. During the forecast period, international passengers will increase 370 percent, from 288,000 to 1.3 million. Charter passenger activity is forecast to grow 63 percent, from 838,000 to 1.4 million.

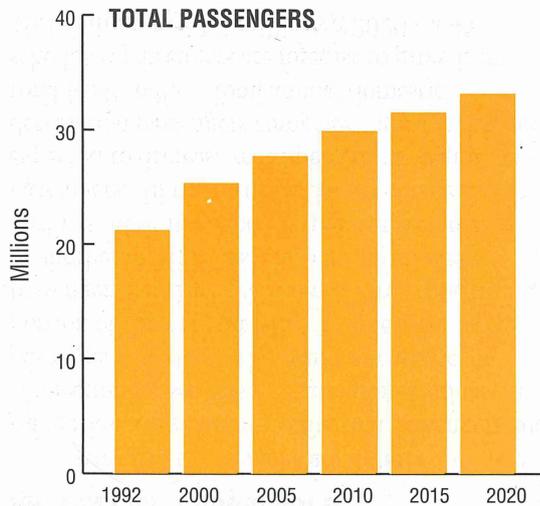




FORECAST PROJECTIONS BY COMPONENT

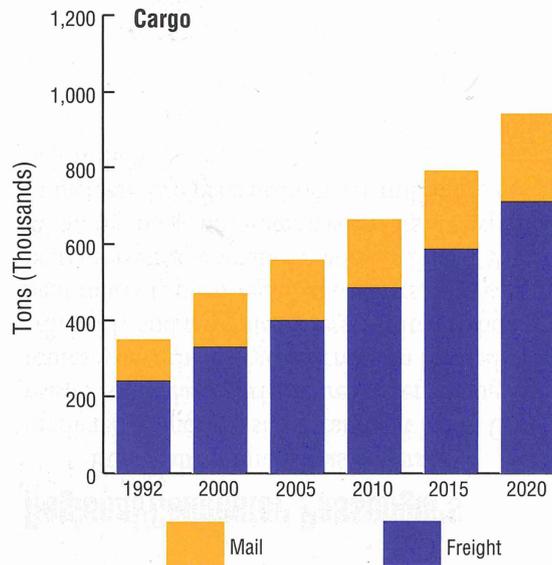
Total Passengers

When the airline, regional/commuter, and international and charter passengers are added together, an increase of 12 million passengers is expected during the forecast period. This reflects a 56 percent increase in total passengers, from 21.4 million today to 33.4 million in 2020.



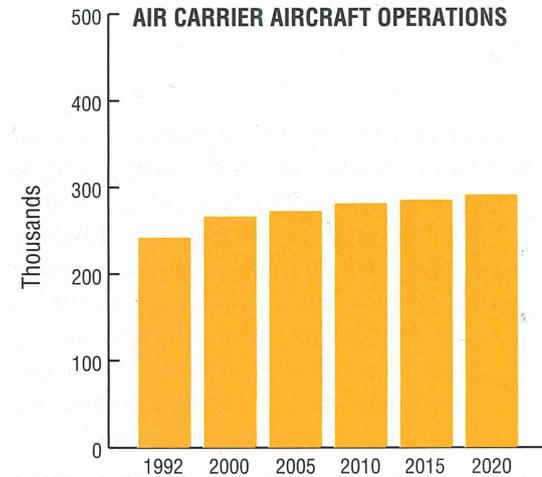
Cargo

Strong growth is expected in this sector. The forecasts for freight and mail at MSP are projected to continue to parallel the growth rates reflected in the FAA's National Forecast. Total freight tonnage is expected to nearly triple by 2020 from 242,000 tons to 712,000 tons, while mail is forecast to more than double from 112,000 tons to 234,000 tons in this period.



Air Carrier Aircraft Operations

Domestic scheduled airline operations are forecast to increase by 20 percent between 1992 and 2020, from 243,000 to 292,000. Operations will increase at a slower rate than passengers because airlines are expected to use larger aircraft that can hold more passengers and to fly them with higher load factors.

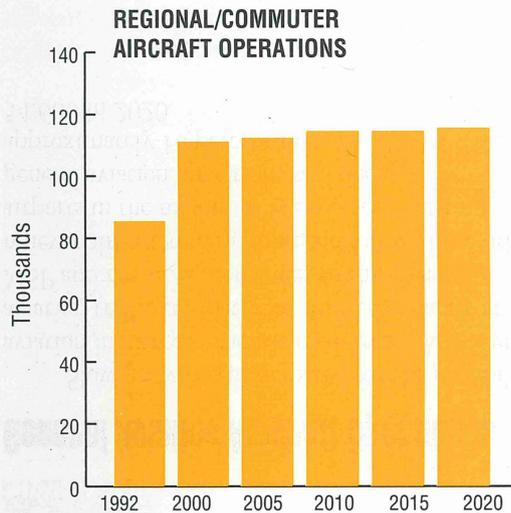




FORECAST PROJECTIONS BY COMPONENT

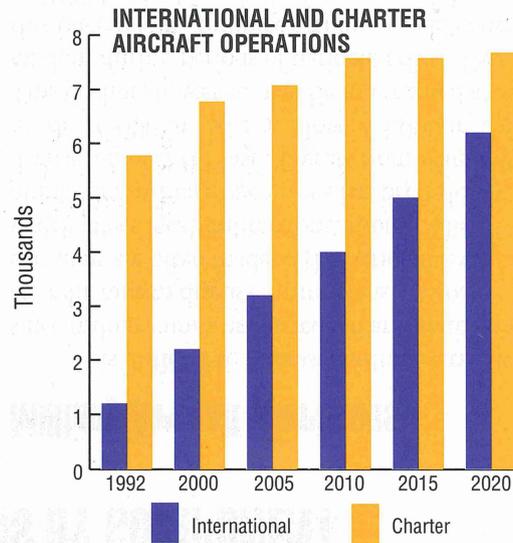
Regional/Commuter Aircraft Operations

The average number of passengers per regional/commuter operation is expected to nearly double by the end of the forecast period, due to increases in average aircraft size and load factors. Regional/commuter operations are forecast to grow rapidly until the year 2000, and then level off as larger aircraft comprise more of the fleet. In 1992, there were approximately 86,000 regional/commuter aircraft operations. In 2020, 116,000 operations are forecast, a 35 percent increase.



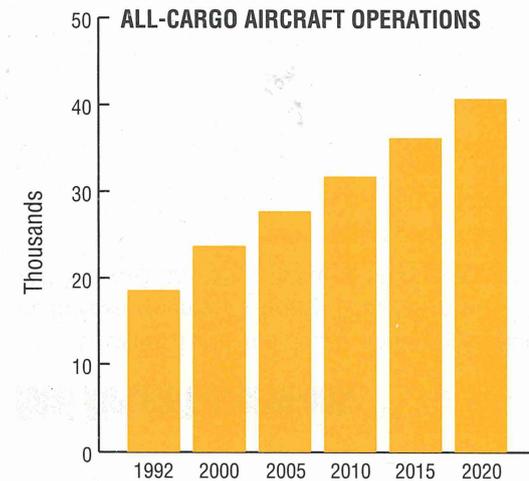
International and Charter Aircraft Operations

International operations are predicted to grow at a slightly faster rate than passengers, reflecting a trend toward the use of smaller aircraft that can serve smaller international markets more efficiently. In 1992, there were approximately 1,200 scheduled international aircraft operations. By 2020, this level is expected to increase to 6,200 operations. Charter aircraft operations are forecast to grow 33 percent, from nearly 5,800 in 1992 to 7,600 in 2020.



All-Cargo Aircraft Operations

In 1992, approximately 40 percent of total cargo (including freight, express cargo and mail) was carried in all-cargo aircraft, with 60 percent carried in passenger aircraft. It is anticipated that the share of total cargo carried on all-cargo aircraft will increase to 66 percent by 2020, with passenger aircraft transporting 34 percent. All-cargo operations totaled 18,700 in 1992, a level that is expected to more than double to 41,000 by 2020.

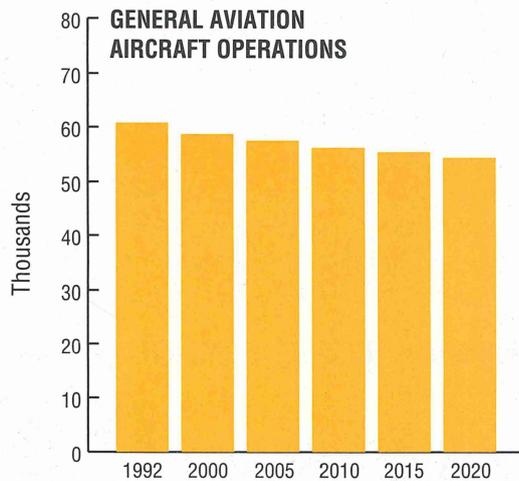




FORECAST PROJECTIONS BY COMPONENT

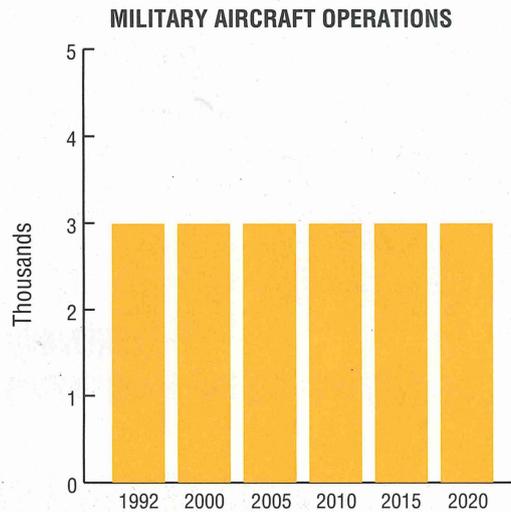
General Aviation Aircraft Operations

Slow growth is anticipated for the general aviation industry at the national level. As general aviation traffic competes for limited capacity at MSP and the MAC continues to improve its reliever airport system, more aircraft will use other airports in the region. It is expected that total general aviation operations will decrease by approximately 10 percent from 61,000 in 1992 to 54,600 in 2020.



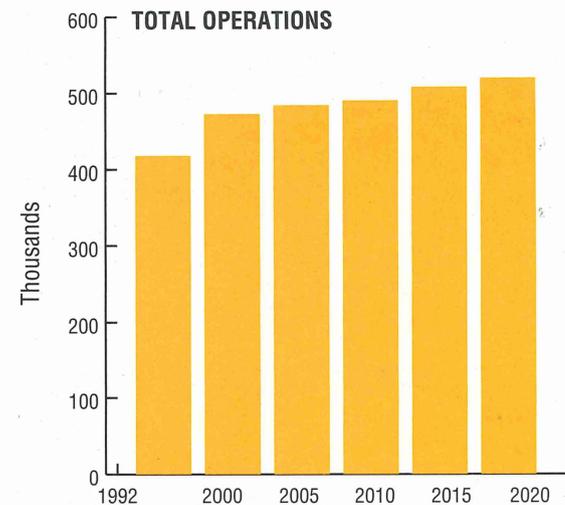
Military Aircraft Operations

It is difficult to forecast military activity since military units at the federal and state level are reluctant to discuss future plans. Also, decisions are often made at the national level, which affect local military operations. The number of military operations has been slowly decreasing over the last 20 years from a high of nearly 16,000 in 1972 to a low of 3,000 in 1992. This decline, however, may be interrupted at random during periods of national crisis. Due to this uncertainty, military activity is held constant at 1992 levels through the forecast period.



Total Aircraft Operations

Between 1992 and 2020, aircraft operations are forecast to grow by nearly 102,000 from 418,500 to 520,200, an increase of 24 percent.



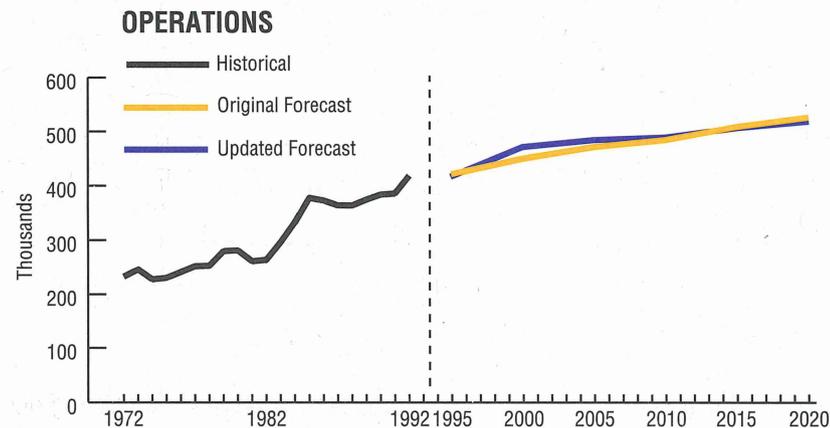
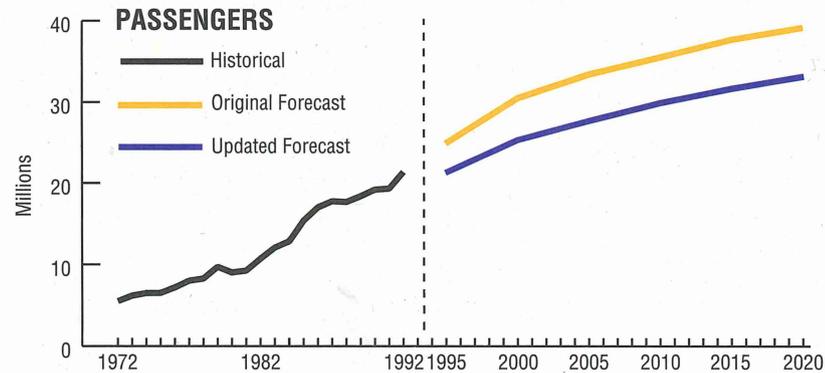


COMPARISON BETWEEN FORECAST UPDATE AND ORIGINAL FORECAST

The updated passenger and aircraft operations forecasts are lower than those previously developed for use in the MSP Long Term Comprehensive Plan (LTCP), using the year 2020 for comparison. Some individual components are higher, while others are lower. On the high side, the updated forecast of air carrier origination-destination passengers is over two million passengers higher than the original forecast, an increase of nearly 18 percent. This reflects a trend toward greater demand for air travel in recent years for a given level of economic activity. Regional/commuter passengers are 29 percent greater and operations are 9 percent higher, reflecting the shift of more air carrier markets to regional/commuter carriers.

The greatest decrease occurred in the number of connecting passengers, reflecting a reduction in Northwest Airlines' connections from 51 percent in 1992 to 44 percent in the future. When the updated forecasts are compared to the original forecast, this results in a one-third reduction in connecting passengers. Total air carrier operations are 5 percent lower in the updated forecasts.

Combined, these changes result in baseline forecasts that show a 15 percent reduction from the original forecast in total passengers and a 1.4 percent reduction in total aircraft operations in the year 2020.





ALTERNATIVE SCENARIOS

One way to ensure timely and cost-effective airport expansion is to develop alternative forecast scenarios to test a range of possible future activity levels. As part of the forecast update process, 12 alternative scenarios were developed in addition to the baseline forecast. They are as follows:

1. *High Regional Economic Growth* -

The region's income and employment will grow 50 percent higher than assumed in the baseline forecast.

2. *Low Regional Economic Growth* -

The region's income and employment will grow 50 percent less than assumed in the baseline forecast.

3. *Increased Airfares* -

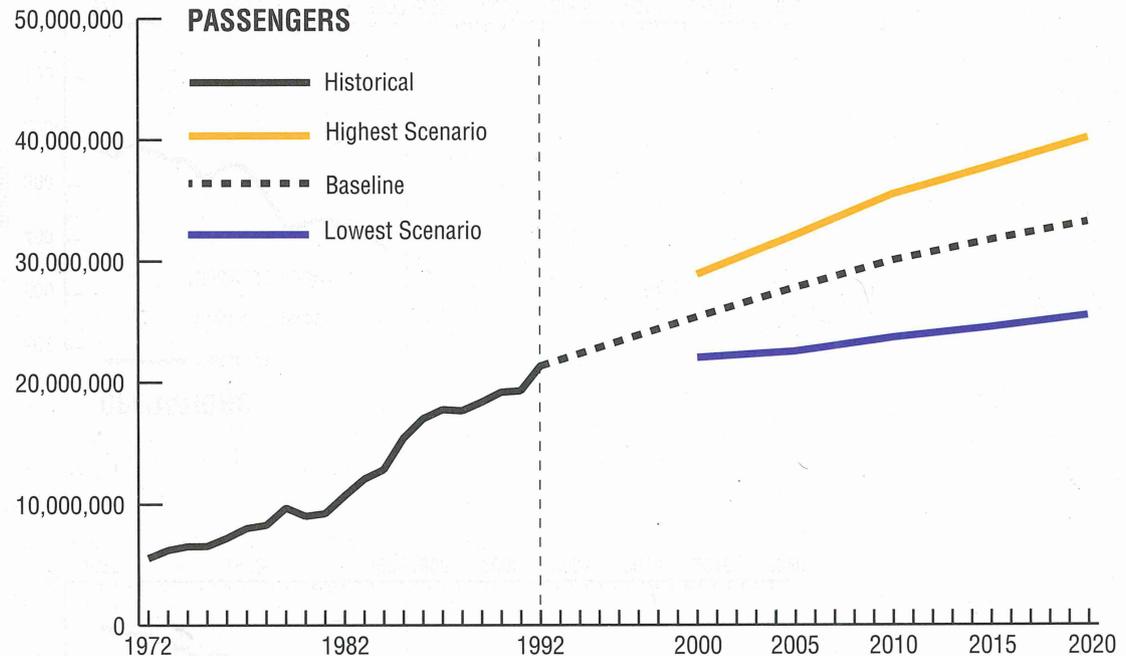
Airlines will begin charging more for tickets than assumed in the baseline forecast, lowering demand but increasing profitability.

4. *Decreased Airfares* -

Airlines will begin charging less for tickets than assumed in the baseline forecast, thereby stimulating additional demand.

5. *Increased Influence of Airfares* -

Increases the forecast's sensitivity to changes in airfares and reduces the sensitivity to socioeconomic factors. Higher airfares will result in less activity.



6. *Minimum Airline Hub* -

Northwest Airlines' hubbing activity is reduced to the minimum level permitted in covenants between Northwest and the MAC.

7. *Maximum Airline Hub* -

The percentage of connecting passengers stays at the current level instead of decreasing as assumed in the baseline forecasts.

8. *Higher Growth in Aircraft Size* -

The average number of seats per aircraft will increase at a higher rate than expected in the baseline forecast, resulting in fewer aircraft flights carrying the same number of passengers.



ALTERNATIVE SCENARIOS (continued)

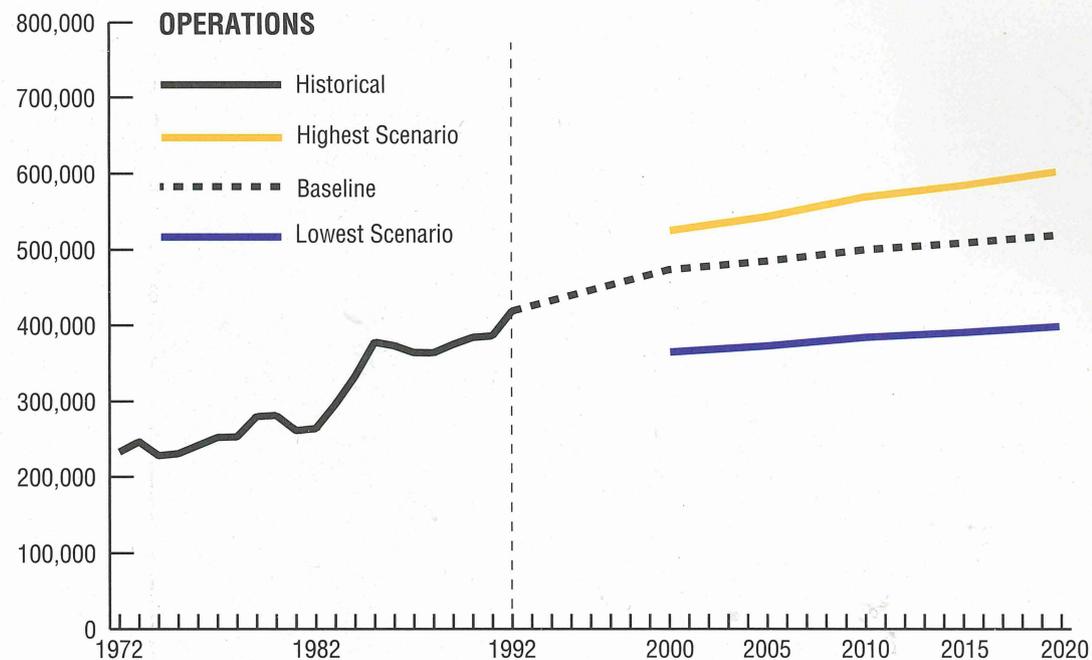
9. *High Regional/Commuter Activity* - Regional/commuter airlines will operate more of the routes currently operated by the large air carriers, as compared to the baseline forecasts.

10. *Low Regional/Commuter Activity* - The replacement of air carrier service by regional/commuter service is less than assumed in the baseline forecasts.

11. *Full International Market Potential* - International service at MSP will increase at a higher rate than in the baseline forecast, capturing a greater share of the region's international passengers.

12. *Restructured Air Travel Demand* - Assumes a fundamental change in the relationship between the economy and the demand for air travel, as compared to the baseline forecasts. This results in less air travel demand for a given level of economic activity.

All of the above scenarios indicate that passenger traffic will grow in the future, although at varying levels depending on the assumptions incorporated. The results offer flexibility and a range of possibilities for future development of a preferred plan.





SUMMARY AND NEXT STEPS

Demand for air service will increase in the Twin Cities region through the year 2020. The degree of growth, however, depends on several factors. The MAC and Metropolitan Council have put forth considerable effort to incorporate input from experts in various industry disciplines and to understand the effects these factors may have on local aviation needs.

Facility requirements and development alternatives for MSP and a potential replacement airport will be updated using the latest forecasts. This will be done to provide the basis for developing updated comprehensive plans for each option beginning in late 1993. The forecast scenarios will provide a basis for building flexibility into the plans.



APPENDIX

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