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October 1988

Is the Airport Adequate?

Report of the Minneapolis/St. Paul International Airport Adequacy Study Advisory Task Force to the Metropolitan Council

Part I: Findings and Recommendations



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Part 1 of 2 parts

Is the Airport Adequate?

Report of the Minneapolis/St. Paul International Airport Adequacy Study Advisory Task Force to the Metropolitan Council

Part I: Findings and Recommendations

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Preface

The *Report of the Minneapolis/St. Paul International Airport Adequacy Study Advisory Task Force to the Metropolitan Council* consists of two parts and a technical appendix. The first part is a summary of the study principles and findings of the task force, as well as its recommendations to the Council. The second part is a summary and analysis of the various issues studied by the task force—air service demands, capacity, economic costs and benefits, finance, noise and others.

The technical appendix is a compilation of the background reports and working papers of the study, many of which were developed by the task force's consulting team: Apogee Research, Inc.; Thompson-Hickling Aviation, Inc.; CH2M Hill and Enviroscience. The technical appendix is available on request after Nov. 1 from the Metropolitan Council Data Center, 230 E. Fifth St., St. Paul, MN 55101, telephone 291-8140.

A minority report of the Minnesota Business Aircraft Association is found in Part II.

Contents

	Page
The Adequacy Study	1
Task Force Findings	1
Adequacy Study Principles	3
Capacity Development Options Considered	3
Contingency Planning and Risk Assessment	4
Task Force Recommendations	5
Table 1 - Implementation Strategy	7
Task Force Members	8

The Adequacy Study

The Metropolitan Council is charged with setting policy for the structure of the airport system in the seven-county Metropolitan Area, including determining the need for a new major airport and the general area where a new airport would be built. The Metropolitan Airports Commission (MAC) conducts detailed airport master-planning, and owns and operates Minneapolis-St. Paul International Airport (MSP) and six other airports that are part of the public regional system.

The 1987 legislature directed the Council to make a determination of the long-term adequacy of MSP to meet the aviation needs of the Metropolitan Area through the year 2020.

In April 1987 the Council appointed a 35-member MSP Adequacy Task Force to examine the issues of demand, capacity, environmental capacity and economic impact as they relate to MSP and to make recommendations. The task force is composed of representatives from the airline industry; business community; federal, state and regional agencies; local government; and the general public. The group met on a monthly basis to receive background information from guest speakers on domestic and international trends affecting aviation. The task force was also briefed by agency staffs and reviewed consultant products. Additional input and review of major work tasks (e.g., forecasts) were obtained through use of separate "expert" panels with national and local experts participating. The task force also met periodically in small group sessions for more in-depth discussions and to give input on the draft of the task force report.

The Council will hold public meetings and hearings on the report and recommendations of the task force before making its recommendations to the legislature in December 1988.

Task Force Findings

Importance of Aviation

- The long-term economic health and growth of the Metropolitan Area and its multi-state economic region depend on a high level of commercial air service.
- A high probability exists that growing demand for aviation service will exceed the existing capacity of MSP within 10 years.
- The Metropolitan Area risks foregoing substantial economic gains if airport capacity is not expanded in a timely fashion over the next 30 years. Once traffic is lost, it will be more difficult to get it back. Therefore, the longer the period of capacity constraints, the lower the level of service and economic gains will be.
- A sound and efficient airport system is vital to the region's image as a dynamic and attractive place to live and work.

Level of Service

- An ambitious but achievable goal would be to design an airport with an 80 percent chance of meeting future demand.

Capacity Constraints

- Runway and taxiway capacity form the major long-term constraints on growth at the current site. Terminal capacity and ground access also constitute significant constraints; the MAC's MSP master plan presently under development begins to address these needs.

Noise

- Even with the steady introduction of quieter aircraft, the greater frequency of flights will increase noise stress on most surrounding communities,

affecting more households over time.

Technology

- While future technological changes will improve the efficiency, safety and to some limited degree the capacity of the current site and aviation in general, technology alone does not appear to be sufficient to meet projected demand.

Competition

- The nation's airport system is under stress and efforts are under way elsewhere to increase capacity (new runways or new airports). The region needs to expand in order to keep pace with airport expansion efforts in other major cities to maintain or potentially increase MSP's role in the national and international air transportation system.

Options to Expand Capacity

- The region's short-term needs up to the year 2000 require either a new runway at the current site or a new replacement airport.

- The region's long-term needs up to 2020 and beyond require a new airport or further runway expansion at MSP.

- Because of the complexity of a site selection process, the identification and preservation of a potential site with a reasonable access would enhance the viability of a new replacement airport option.

- All the development options to expand capacity show significant net benefits to the region and to the airlines.

- Given the overall cost-effectiveness of all the development options under consideration, the strength of the regional economy and the management and financial performance of MSP, there is a high probability that financing for capacity expansion can be obtained.

- Low-cost options such as demand management (to encourage smaller aircraft to use reliever airports) and schedule changes (to shift regional flights and other commercial aircraft to off-peak periods) could help buy valuable time but do not represent a sufficient long-term solution.

Actions

- Because of the importance of aviation to the region's future and because of the long lead time needed to plan major airport additions and obtain community consensus, work should begin now to implement capacity improvement options for the region, including enhancement of MSP and landbanking for a new replacement airport.

- Delaying implementation of capacity options may foreclose some of those options and runs the risk of significant long-term economic loss to the Metropolitan Area, the state and the multi-state economic region.

- A dual-track strategy to maximize the capacity of the current MSP site, while actively securing a site for a new airport, offers the greatest economic, social and financial returns with limited risk.

- Starting immediately the landbanking process offers a low-cost, low-risk action that keeps open the option of a future new airport without committing the region to build one prematurely.

- Reuse of the existing MSP site represents a unique asset with the potential to generate significant economic activity for the adjacent communities, for the Metropolitan Area and for the state as a whole.

- Demand management and modest schedule changes should be encouraged to ease the transition to capacity improvements.

Adequacy Study Principles

1. Single Major Airport Within a Metropolitan Airport System

A single major airport for scheduled air carrier service and a geographically balanced system of reliever airports within the metropolitan airport system should be developed and operated. If a new major airport is built, MSP shall be closed and reused for a non-aviation use. New terminal concepts (remote terminal, satellite terminals) appear relatively costly but ought to be investigated.

2. High Level of Air Service

Facilities at the major airport should be planned and developed to afford the region a high level of aviation service with minimum delay and congestion.

3. Competitive Facilities — National and International System

Facilities at the major airport should provide service levels which maximize the region's competitive position in national and international air transport markets.

4. Competitive Airport — Air Service

Adequate facilities at the major airport should be developed to promote competitive airline services and to support major hubbing activity.

5. Economic Vitality and Development

The economic development needs of the Metropolitan Area and state should be a priority in the development and operation of the major airport. Decisions concerning the major airport ought to take into consideration the existing capital investments of the airlines, business community and public agencies.

6. Finance

Major capital investments should be financed in a balanced manner among federal grants, user-based fees and charges, state financial support and private sector investments. The participation of the private sector in funding, developing and operating landside facilities (terminals, gates, parking facilities, ancillary commercial and support services) should be investigated.

7. Environmental Capacity

To the degree practicable, measures to limit the adverse environmental/noise impacts in communities around MSP should be implemented. At a new major airport appropriate and feasible controls should be implemented to limit potential noise/land-use development conflicts.

8. Safety

To the degree practicable, the State Land Use Safety Zone Requirements should be implemented at MSP; at a new major airport, these zoning requirements should be fully implemented.

Capacity Development Options Considered

Demand-Management Strategy: Use demand-management techniques to alter the schedule and use of MSP by the air carriers and regional commuters to maximize the capacity. Assume successful implementation of MAC policy to remove corporate/general aviation from MSP by the mid-1990s. Some level of demand management has been assumed in all subsequent strategies.

Base-Case Strategy:	Make MSP work with the existing runway system, implementing the current capital improvement program (CIP) including the 4-22 runway extension and technological improvements in air traffic control. The base-case program is assumed in all subsequent strategies.
North-South Runway Strategy:	Enhance MSP by building a new north-south runway to be operational in the 1990s.
Maximum Development Strategy:	Enhance MSP to its maximum airside capacity potential (within the "ring-road" highway system) by building both a north-south runway in the 1990s and then a new far parallel runway after the year 2000.
New Airport Strategy:	Site and build a new replacement airport by the year 2000 and close MSP.
Dual-Track Strategy:	Enhance MSP by implementing the current CIP including the runway 4-22 extension; secure land for a potential new airport during the early 1990s; enhance MSP by building a new north-south runway in the mid-1990s; when justified by the contingency planning process, build and open a new replacement airport after the year 2000.

Contingency Planning and Risk Assessment

Once one of the strategy options has been selected, a risk management and contingency planning process should be established. This process will entail monitoring and analyzing selected benchmarks annually to adjust the timing of the selected strategy to cope with unfavorable events or favorable opportunities. The purpose of this strategic management approach is to provide flexibility in dealing with a dynamic and complex issue. Course adjustments and corrections will be required as it may take several decades to fully implement the plan. In addition, the number of local, metropolitan, state and federal governmental jurisdictions involved, each with their own agendas and perspectives, requires some flexibility.

Most important, the incorporation of a risk management and contingency planning process into the overall decision-making process supports a strong clear decision at the outset. If events prove to be different than envisioned, the contingency process will allow changes in the implementation schedule. Hedging and unnecessarily compromising the initial decision are not necessary if adequate contingency safeguards are put in place. The risk-assessment approach used for the MSP adequacy study strongly support this contingency planning process.

Risk Management/Contingency Planning Process Benchmarks

An annual assessment of the following benchmarks should be made to evaluate shifts in the industry, shifts in demand for air travel, or changes in operational efficiency of the airport or airline industry. In addition, an assessment should be made of the combined impact of all factors on the timing of implementation, the need for capital improvements, and the amount and type of demand management needed.

1. Enplanements and Operations — Actual number of annual enplanements and operations of scheduled air carrier and regional commuter service over three years exceeds or falls below forecast level by 20 percent or more.

2. Technology — Technological changes offer a more than 15 percent increase in capacity/utilization of runways.

3. Aircraft Size — Change in average seat size of aircraft fleet using MSP significantly vary from forecast increase of two seats per year. Average over three years shows no change or more than 10 seats.

4. Economic Factors — Regional economic growth or national GNP growth greater than expected, or major recession occurs of more than 36 months in duration. Regional economic base shifts and air travel demand needs change.

5. Airline Industry — Significant major airline mergers; hubbing activity reduced/increased at MSP; ratio of origin/destination passengers to transfer traffic drops below 1.9 or rises above 2.3 (forecast level is 2.1).

6. Airfares — Real airfares rise/fall from 1988 levels, affecting demand.

7. Regulation and Safety — Federal regulation of airline industry and airspace; state regulation including land use safety/compatibility affecting airport operations.

8. Noise — Adverse change in noise impact from noise energy or frequency of flights due to traffic or fleet mix.

9. Implementation of Strategy — Implementation schedule of enhancement of MSP or landbanking for new airport gets delayed significantly due to community acceptance, financial feasibility or airline industry changes.

10. Demand Management — Demand-management techniques of schedule changes (spreading flights over a longer time period during the day, also known as "depeaking"); pricing adjustments and reliever system use by general aviation are more/less effective in efforts to handle congestion and delay.

Task Force Recommendations

1. The Metropolitan Area and the state need to be assured on an annual basis that this region has adequate air transportation service. Priority should be placed on investments and operational procedures to keep MSP adequate, and meeting safety requirements and air service needs with a minimum of airport-caused delay for as long as MSP is the major airport.

2. In the short-term, keeping MSP adequate will require construction of at least one new runway in the five- to ten-year time frame in addition to the use of demand-management techniques. Demand-management techniques include: (1) continued development of the reliever airport system for general aviation/corporate aircraft, (2) schedule changes/depeaking operational practices by the airlines and specific implementation policies by the MAC, and (3) pricing policies by the MAC.

3. In the longer-term, from 15 to 30 years ahead, the Metropolitan Area will need either an additional runway at MSP or a new airport; therefore, the region should begin immediately to secure a site. The site should be of adequate size to meet long-range aviation needs and to minimize environmental impacts. The location should serve the existing urban development dependent upon air transportation needs and future economic development needs of the region.

4. The Metropolitan Council and the Metropolitan Airports Commission should implement a dual-track strategy that allows for capacity enhancements at MSP ("Track A") while keeping the new airport option open ("Track B").

5. In order to implement this dual-track strategy, the 1989 legislature should direct the Metropolitan Council and Metropolitan Airports Commission to adopt by December 1989 an intergovernmental agreement with specific responsibilities, a timetable for action, a process for implementation and a process for annual contingency planning assessments. Specifics of the intergovernmental agreement are contained in subsequent recommendations.

6. Expanding MSP's capacity ("Track A") should begin immediately with the implementation of the current capital improvement program, including the extension of runway 4-22, implementation of appropriate elements of the master plan

update and the Part-150 Program for noise abatement; enhancement of the reliever system to handle corporate/general aviation traffic diverted from MSP; and implementation of demand-management strategies designed to maximize the capacity at MSP. In the mid-1990s the new north-south runway (with operations only to the south) should be built and made operational, with exact timing to be determined by the annual contingency planning process.

7. Track B ("New Airport Option") should begin immediately with (1) the Metropolitan Council identifying a new airport search area (1989-1990); (2) the MAC identifying a new airport development site, developing the new airport design requirements including runway layout and terminal design options, and conducting the necessary environmental impact statement process (1990-1993); (3) the Council initiating the provisions of the Major Airport Zoning Act to protect the site and ensure compatible land use development around the site (1990 and beyond); (4) the MAC acquiring the new airport site and negotiating appropriate interim use agreements to recoup to the maximum degree practicable the holding costs (1991-1993); (5) the Council in conjunction with the affected communities implementing land use controls developed under the Major Airport Zoning Act once the specific site is selected (1990-1993); and (6) the Council and the MAC in consultation with the adjacent communities and affected state and federal agencies developing a plan for the reuse of MSP including agreements with the military (U.S. Air Force and Minnesota Air National Guard) on location of their operations.

8. The intergovernmental agreement should outline the process and risk assessment factors to be used in annual contingency planning. Air transportation trends, factors which may affect the timing and scaling of airport investments and the progress/problems being made in implementing the dual-track air transportation strategy should be monitored. The Council should be the lead agency in preparing the annual assessment report. The intergovernmental agreement should charge the Council with determining the need for and timing of actions contained in the five-year capital improvement program of the MAC. The MAC should be charged with determining the design, operation and financial specifics of capital improvement program items.

9. The contingency planning process should determine, beginning in 1995, the timing and scope of implementation of Phase II of the long-term aviation strategy. At that time one of two general courses of action should be chosen: (1) continue to enhance MSP with an additional runway and to hold the landbank for long-term future airport development or (2) develop the new replacement airport, develop and implement transition strategies, close MSP and then implement reuse strategy for MSP.

Table 1
IMPLEMENTATION STRATEGY TO MEET LONG-TERM AVIATION NEEDS OF THE METROPOLITAN AREA

1988	1989	1990	1995	2000	2005	2010	2020

Contingency Planning Process: Forecasts, Implementation Strategy and Timing Assessed Annually

Phase I

Track A: MSP Enhancement

- 4/22 Extension/Taxiway Improvements
- North/South Runway (Design, EIS, Acquisition, Construction)
- Master Plan Update Improvements
- Part 150 Program
- Reliever System Enhancement
- Demand Management

MSP Adequacy Task Force Reports to Met Council

Met Council Reports Recommendations to Legislature

Legislature Directs Met Council & MAC to Adopt an Intergovernmental Agreement

Intergovernmental Agreement Adopted

TRACK B: NEW AIRPORT OPTION

- Search Area Identified
- Site Selected
- New Airport Zoning Act Provisions Initiated
- Site Acquired
- Site Protected
- MSP Reuse Strategy Developed

Phase II

Implementation of Phase II as Directed by Contingency Planning Process

- Far Parallel (11L-29R) (Design, EIS, Acquisition, Construction)
- Part 150 Program
- Reliever System Enhancement
- Demand Management
- Landbank Held for New Airport Development

OR

- New Airport Built
- Existing MSP Closed
- MSP Reuse Strategy Implemented

AIRPORT ADEQUACY STUDY ADVISORY TASK FORCE

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