Merced Municipal Airport

Master Plan
Final Report

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FINAL REPORT

Prepared for:

City of Merced
20 Macready Drive
Merced, California 95340

Prepared by:

DMJM Aviation
An AECOM Company
999 Town & Country Road, 4th Floor
Orange, California 92868
(714) 648-2098

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Chapter 1

Introduction

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INTRODUCTION

Merced Municipal Airport Macready Field is a 450 acre publicly owned facility that serves the aviation needs of the City of Merced and surrounding areas of Merced County. The airport is owned by the City of Merced and operated through the City Manager's office. In order to determine the potential of the airport and specific opportunities for improving facilities, the City sponsored an airport master plan through a planning grant from the FAA Airport Improvement Program (AIP). In December 2004, a contract was awarded to DMJM Aviation, Inc. of Orange, California to prepare a master plan for Merced Municipal Airport.

This document comprises the Final Report for the airport master plan that documents the research, analyses, and findings of the study. During the course of the study, an Interim Report was issued which documented the initial elements of the work program including inventory, market assessments, and facility requirements. The Interim Report was a working document and is superseded by this report.

PURPOSE AND SCOPE OF STUDY

The purpose of this study is to prepare an airport master plan to determine the extent, type and schedule of development needed to accommodate future aviation demand at the airport. The recommended development is a 20 year program presented in the following three planning periods: Phase 1 (2007-2011), Phase 2 (2012-2016), and Phase 3 (2017-2026). The recommended development will satisfy aviation demand, community development and other transportation modes, and is technically sound, practical, and economically feasible. The master planning study:

- Provides an effective graphic presentation of the ultimate development of the airport.
- Presents the pertinent backup information and data which were essential to the development of the airport master plan.
- Describes the various concepts and alternatives which were considered in the establishment of the proposed plan.
- Provides a concise and descriptive report so that the impact and logic of its recommendations can be clearly understood by the community the airport serves and by those authorities and public agencies that are charged with the approval, promotion, and funding of the improvements proposed in the master plan.
- Ensures reliability and safety of airport operations.

THE PLANNING PROCESS

A transportation planning study, such as this, is accomplished by following some fundamental, sequential steps that are briefly stated as an overview of the work to be accomplished. The initial step involves taking inventories of existing facilities and systems, documenting existing conditions, and coordinating activities with other agencies. Next, a market assessment of air traffic demand is undertaken and forecasts are prepared and then translated into a listing of required facilities. Once this list is determined it is possible to compare requirements with existing facilities to identify deficiencies. Alternative development concepts that satisfy the deficiencies are then developed and evaluated so that a recommended concept is identified. Once identified, the preferred alternative is then detailed and examined in terms of a staged development plan. This report documents the basic steps outlined above that were accomplished in preparing the master plan for Merced Municipal Airport.

It is should be noted that the airport master plan focuses on the airport and the planning of facilities within its property boundary. The evaluation of off-airport areas is considered to the extent that acquisition of land is required for airport use, or that off-airport areas are impacted by airport noise or height restrictions. The airport master plan is not intended as a comprehensive general development plan for the area surrounding the airport or community. However, it should be coordinated with or incorporated into other community development programs.

PLANNING ISSUES

A Technical Advisory Committee (TAC) was established for the project for the purpose of monitoring the progress of work and providing input on the study. The first TAC meeting was held in Merced on January 25, 2005 and the purpose of the meeting was to identify planning issues and solicit the Committee's "vision" for the airport. TAC members represented the airline serving Merced, City of Merced Municipal Airport and City management, the FBO operator, Castle Airport, Merced County Airport Land Use Commission, Merced Municipal Airport Authority, UC Merced, and the Merced Pilots Association. A summary of the issues identified are provided below.

Changing Community

- UC Merced – how will the University affect air travel demand in and out of Merced? The University is scheduled to be built out at 25,000 students (1,000 students the first year and 800 additional each year after) and 5,000-6,000 employees in 25 years
- Expected population increase – the Valley population is increasing rapidly
- Demographics of population changing – the income level and Bay Area influence will change demand for air travel
- A shifting to light industrial uses from agriculture
- Increase in aircraft usage for recreation destinations – as roads become more congested more people will rely on air travel to reach recreational destinations
- General aviation/personal use – the Bay Area crowding has increased demand for storing planes in the Valley

Market Assessment

- Scheduled air service – Mesa Airlines currently services Las Vegas, but plans to add scheduled service to Reno in the near future. Will demand increase with the population's demographics changing and UC Merced influence the need for services between other universities and other destinations?
- Personal aircraft usage
- Encroachment in region – how will overcrowding in the Bay Area and its airports affect demands on corporate and personal use at Merced?

- Light cargo at Merced vs. heavy at Castle – how will infrastructure support the two airports and how will their roles vary?
- Business/corporate usage – more businesses are using Merced to access the region because they have more flexibility at Merced
- Competing airports – how will Los Banos and other small valley airport development affect Merced Municipal Airport?
- Very Light Jets (VLJs) – what will the market demand be for new aircraft such as the Eclipse? What will their impact be on facility requirements at Merced?

Regional Context

- Airport Surveillance Radar (ASR) – with the addition of ASR-11 at Merced, will it increase efficiency and safety in the region and in turn demand at the various airports?
- Bay Area influence – as previously discussed, how will the role of Merced change with the shifting of population to the Valley?

On-Airport Issues

- Terminal and other buildings – aging buildings need to be renovated or rebuilt
- Facilities (i.e. executive lounge) – better facilities to accommodate pilots and travelers
- Services (i.e. car rental)
- Parking long- and short-term – safe vehicular parking is necessary
- Circulation conflicts with aircraft and vehicles – is a critical issue
- Runway extension – to accommodate regional jets
- Drainage – is a major issue
- Utilities – need to rehabilitate existing utilities

Off-Airport Issues

- Land use compatibility – need to preserve to ensure development does not encroach upon future airport operations
- Improved access – signage and better access to the airport needs to be addressed

Other Issues

- Marketing the airport – need to better publicize that the airport exists and the role and importance of it to the community
- Security – need to address TSA requirements with increased usage and scheduled services
- Role of Castle vs. Merced

AIRPORT VISIONING WORKSHOP

As part of the TAC meeting a Visioning Survey was conducted of TAC members. Figure 1-1 provides a synopsis of the responses to the Visioning Survey completed by TAC members at the meeting.

The following input was obtained from the TAC with respect to airport role, expected growth in airport activity and the need for services and facilities. The degree of importance reflected below is based on the responses shown in Figure 1-1.

Airport Role (Types of Use)		Future Importance		
		Limited Importance	Somewhat Important	Very Important
Personal / Recreational		1	1	10
Pilot Training			2	10
Business / Corporate			3	9
Scheduled Air Service (Existing service)			1	11
Scheduled Air Service (Increased service)		1	1	10
Air Cargo		7	5	
Heavy Aircraft Maintenance		7	5	
Government (Law Enforcement, etc.)		3	7	1
Emergency / Medical Transport			4	8

Growth in Airport Activity		Expected Growth		
		Little Growth	Moderate Growth	High Growth
Based Aircraft			10	2
Takeoffs and Landings			8	4
Enplaned Passengers (Air Carrier)			8	4
Air Cargo (including overnight)		6	5	1

Airport Services and Facilities		Future Needs		
		Limited Importance	Somewhat Important	Very Important
Longer Runway		1	7	4
NAVAIDS / Instr. Approach / Visual Aids		1	4	7
Terminal Building			4	8
FBO Services (maintenance, fuel, etc.)		1	1	10
Pilot Facilities (lounge, flight planning area)		2	1	9
Portable hangars		6	4	2
T-hangars (included Nested T-hangars)		2	5	5
Conventional, Bay Hangars (Large)			6	6
Tie-downs		8	2	2

Figure 1-1
Airport Visioning Survey Responses

Airport Role

- Existing Air Service – Very important
- Pilot Training – Very important
- Business Corporate – Very important
- Personal/Recreational – Very important
- Increased Air Service – Very important
- Emergency/Medical Transport – Very important
- Government (Law) – Somewhat important
- Air Cargo – Limited importance
- Heavy Aircraft Maintenance – Limited importance

Expected Growth in Activity

- Based aircraft – Moderate growth
- Takeoffs and landings – Moderate growth
- Enplaned passengers – Moderate growth
- Air cargo (including overnight) – Little growth

Needs for Services & Facilities

- FBO services (maintenance, fuel) – Very important
- Terminal building – Very important
- Pilot facilities – Very important
- Conventional, bay hangars – Very important
- NAVAIDS/Visual Aids – Very important
- Longer runway – Somewhat important
- T-hangars – Somewhat important
- Portable hangars – Limited importance
- Tie-downs – Limited importance

GOALS AND OBJECTIVES

Planning can be defined as a rational process for formulating and meeting desired goals and objectives that properly express the benefits that such a plan will produce for its users. Goals are defined as desired ends relating to the physical, social or economic context as to how the airport should develop and how it should be operated. It should be pointed out that goals might not entirely be attainable. Objectives, on the other hand, are specific and attainable actions, which lead to the attainment of goals. The goals and objectives serve as a foundation used to guide the planning process. They can also be used to rate the merits of alternative plans.

The following preliminary goals and objectives were developed based on the planning team's master planning experience and the discussion of issues at the first TAC meeting.

GOAL NO. 1 – Function: The airport should accommodate scheduled air service, business aviation, and based aircraft owners and needs of existing and anticipated tenants.

Objectives:

1. Provide through planning, an orderly and timely development of facilities adequate to meet future air transportation needs.
2. Develop the role of the airport in terms of its specific capabilities and market assessment.
3. Accommodate those classes of commercial, cargo, general aviation and military operations consistent with the airport role.

4. The plan should be expandable and flexible.

GOAL NO. 2 – Safety: The operation of the airport related to all aspects of air transportation for the users, operators and general public should be safe.

Objectives:

1. Minimize exposure to risk.
2. Conformance with FAA regulations and airport design standards.
   - FAA Advisory Circular 150/5300-13, Airport Design (Change 10)
   - FAR Part 77, Objects Affecting Navigable Airspace which forms the basis for zoning regulations to prevent obstructions to air navigation.
   - FAR Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers which prescribes rules governing the certification and operation of airports which serve scheduled or unscheduled passenger operations of an air carrier.

GOAL NO. 3 – Efficiency and Economy: The airport should achieve financial self-sustenance.

Objectives:

1. Maximize best possible use of existing facilities.
2. Maximize the ability to implement the plan.
3. Identify means of local funding requirements.
4. Minimize costs to users, operators, and general public.

GOAL NO. 4 – Environment: The airport should be developed and operated with a minimum of adverse effects on the social and natural environment.

Objectives:

1. Develop new airport facilities and correct deficiencies in existing aviation facilities to conform to Federal and State environmental regulations.

GOAL NO. 5 – Local Compatibility: The airport should be developed in agreement with proposed land use plans.

Objectives:

1. The plan should agree with the goals of the South Merced Strategic Plan.
2. It is important that the airport be protected from residential encroachment. The plan should provide information for off-airport land use planning and control to facilitate updating of the ALUCP and assure compatibility with operations. The State encourages that the Merced ALUCP be updated.
3. The plan should recognize the potential development of adjacent industrial land to the extent practical serve to attract businesses to the adjacent area.