

ASSESSMENT OF ENVIRONMENTAL EFFECTS

of the
Metropolitan Airports Commission's
Seven Year Capital Improvement Plan

1995 to 2001

FLYING CLOUD AIRPORT

for the
METROPOLITAN AIRPORTS COMMISSION



prepared by
THE AIRPORT TECHNOLOGY AND PLANNING GROUP, INC.

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Pursuant to Minn. Stat. 473.614 Subd. 1

Consultant's Report

ASSESSMENT OF ENVIRONMENTAL EFFECTS
Flying Cloud Airport
Metropolitan Airports Commission Seven Year Capital Improvement Plan

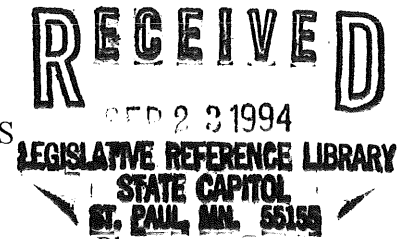


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ASSESSMENT OF ENVIRONMENTAL EFFECTS

FLYING CLOUD AIRPORT METROPOLITAN AIRPORTS COMMISSION SEVEN YEAR CAPITAL IMPROVEMENT PLAN

1. INTRODUCTION

This report, prepared in response to the requirements of Minnesota Statutes 1986, Chapter 473, amended by Minnesota Statutes 1988, Chapter 664, presents an assessment of the environmental effects of projects identified in the Commission's seven-year capital improvement plan (1995-2001) for Flying Cloud Airport. The Airport's location in the Metropolitan area is depicted in Exhibit 1.

This assessment examines the cumulative environmental effects of all the listed Capital Improvement Projects proposed for implementation at the Airport between 1995 and 2001. Many of the projects listed entail only repair or rehabilitation of existing facilities. Such work would not affect the before/after usage of the facilities and, as such, would not add to or subtract from the cumulative environmental effects. The projects included in this evaluation are those that have the potential of altering, creating, or in some manner affecting the environmental impact categories listed below.

2. IMPACT CATEGORIES USED TO ASSESS ENVIRONMENTAL EFFECTS

There are eight categories of impact that are used to assess the environmental effects of proposed development at the Airport. These categories and the types of projects that could be affected are discussed below.

A. Aircraft Noise

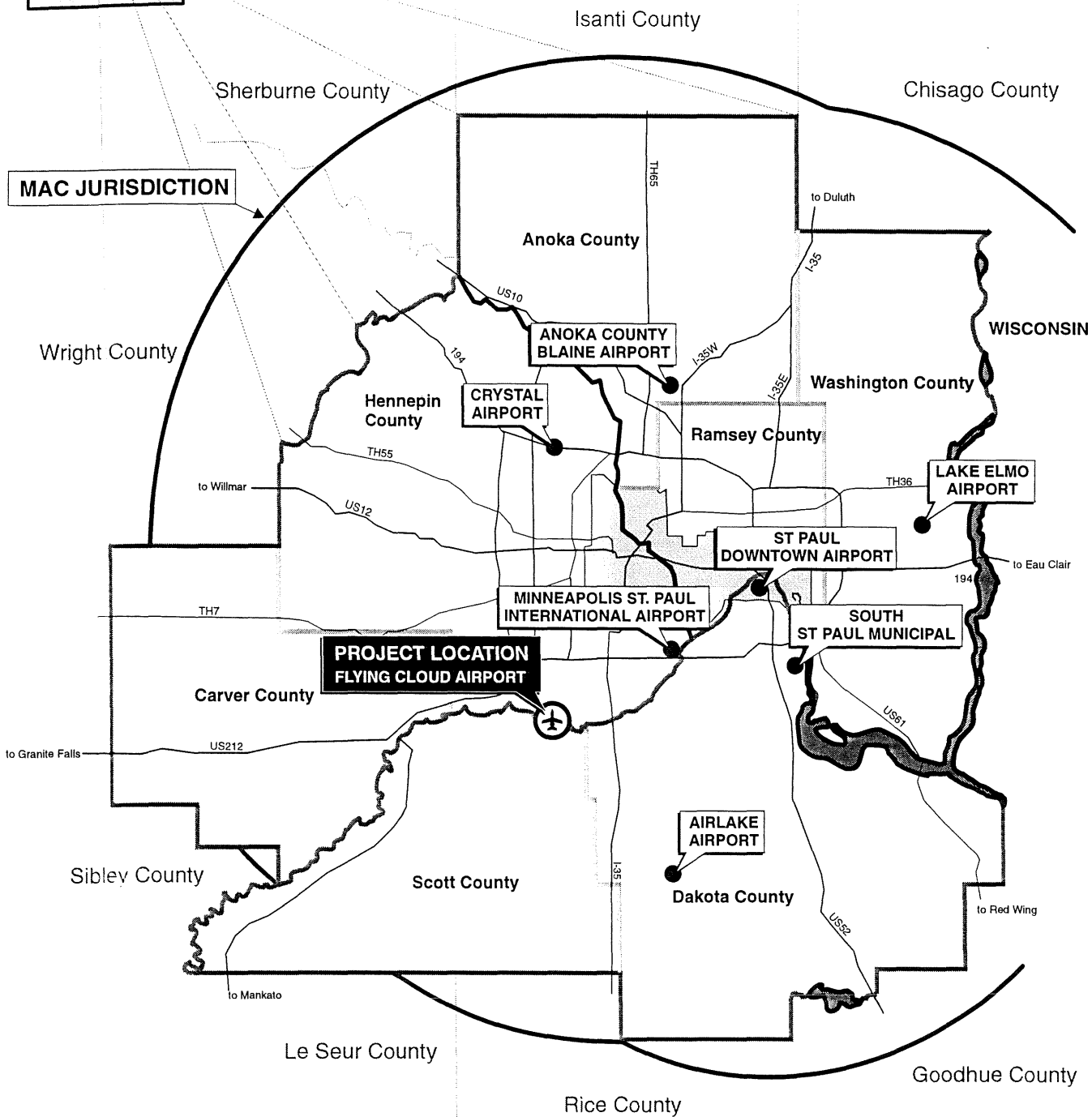
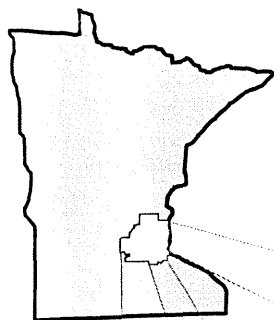
The types of projects which might impact the effects of noise on the environment are new or lengthened runways, new or lengthened taxiways, new maintenance hangars, facilities that may increase operations, and noise insulation and other noise mitigation measures.

B. Vehicular Traffic

The types of projects which might impact the effects of traffic at the Airport or to the surrounding community are new buildings or building additions, new parking spaces or structures, and new or modified roadways or roadway systems.

C. Air Quality

Air quality impacts at the Airport will be primarily caused by changes in vehicular or aircraft activity. Projects which might have an impact will generally be the same projects which affect aircraft noise or vehicular traffic.



SOURCE: M.A.C.



FLYING CLOUD AIRPORT

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PROJECT LOCATION

EXHIBIT

1

D. Water Quality

Projects which might affect water quality are those which create additional runoff (new pavements or building), fire suppression systems, new retention basins, or projects which might affect the groundwater.

E. Light Emissions

Projects evaluated under this category are airport beacons, lights associated with new runways or taxiways, and lights associated with new roadways, parking lots, or ramps.

F. Sewage

Those projects which have the potential to increase sewage discharged into the sewage disposal system are new or expanded buildings or other changes that significantly alter the number of people using a facility.

G. Wetland Impact

All projects are evaluated to see if they would entail the full or partial filling of wetlands.

H. Relocation Impacts

Relocation impacts are associated with land acquisition projects that will displace occupied residential units or businesses.

3. PROJECTS WITH POTENTIAL ENVIRONMENTAL EFFECTS

Table 1 provides a listing of all the projects included in the MAC's Capital Improvement Plan for the years 1995 through 2001. Those projects determined to contribute or not contribute to the cumulative environmental effects at the Airport are so noted on Table 1. Four projects are scheduled between 1995 and 2001. Three of these projects (South Building Area Construction, Runway 9R/27L Extension, and Utility Connections) were previously addressed in the 1991 AOEE. The findings of the 1991 AOEE assessment are still valid since there has been no significant change to the scope of these projects. Where appropriate, additional data have been added to the information presented in the previous AOEE. One project (Land Acquisition) that has not been previously discussed has the potential for environmental effect.

4. CUMULATIVE ENVIRONMENTAL EFFECTS

Following is a summary of the cumulative environmental effects by impact category for the four projects scheduled for completion between 1995 and 2001. Exhibit 2 depicts these projects. Appendix A contains an analysis of environmental effects on a project-by-project basis.

D. Water Quality

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TABLE 1

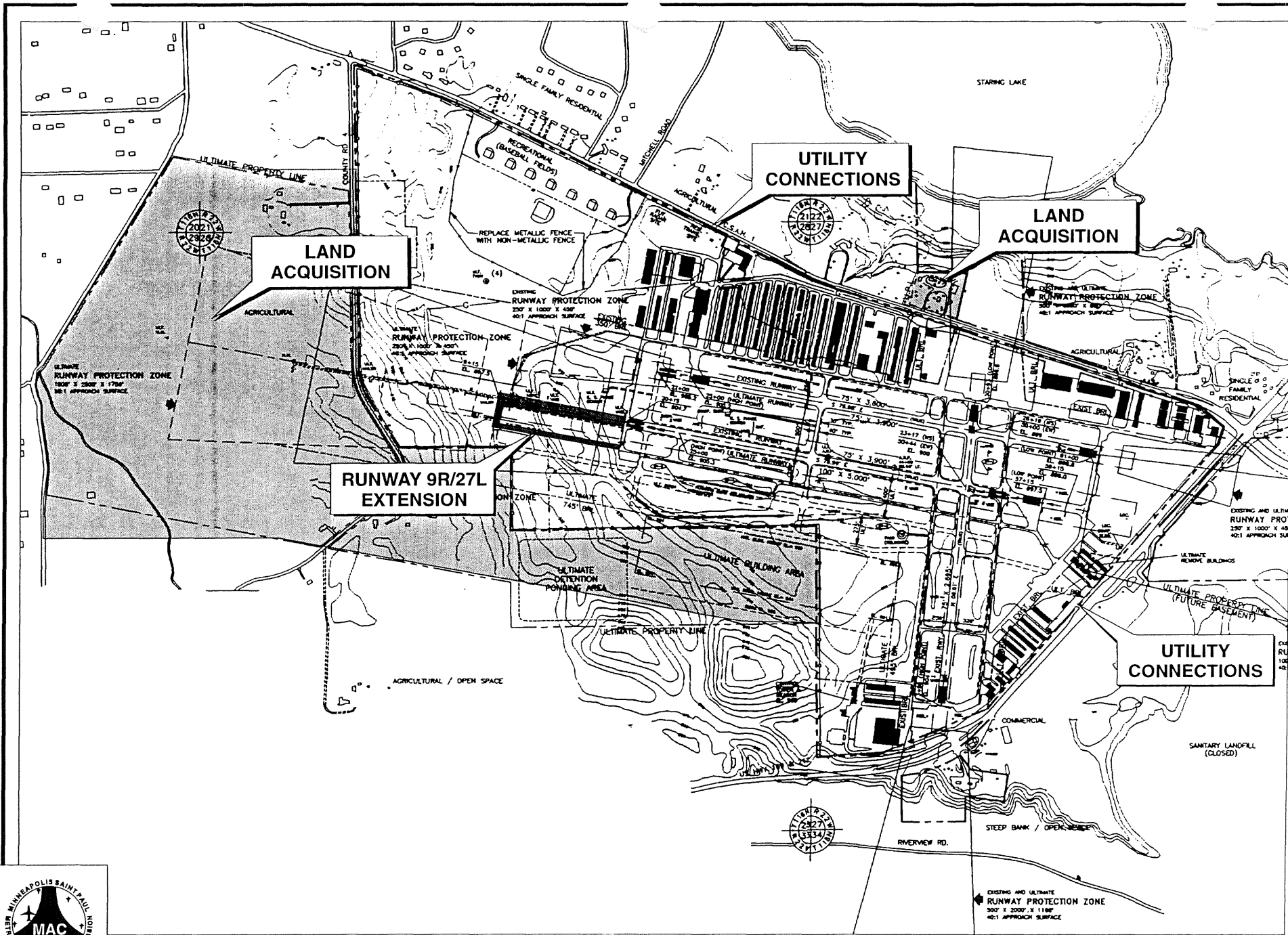
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See Note	Project Description	1995	1996	1997	1998	1999	2000	2001
*	Land Acquisition	\$1,750,000						
^	South Building Area Construction		\$6,100,000	\$700,000				
^ **	Runway 9R/27L Extension		\$4,000,000					
^	Utility Connections				\$1,500,000			
Flying Cloud - Total		\$1,750,000	\$10,100,000	\$700,000	\$1,500,000	\$0	\$0	\$0

Notes:

- (*) This item has the potential for effects and is discussed in the AOEE text.
- (1) A rehabilitation project that does not physically alter the original size.
- (2) A structural, mechanical, or electrical modification or airport support function that does not increase size or passenger capacity.
- (^) Project addressed in previous Assessment of Environmental Effects (AOEE) and no change of workscope is expected.
- (**) Project has also been addressed in other environmental document (EA/EIS/EAW).



FLYING CLOUD AIRPORT
ASSESSMENT OF ENVIRONMENTAL EFFECTS

CAPITAL IMPROVEMENT PLAN IMPACT PROJECTS

A. Noise Impacts

Noise modeling contained in the 1992 Comprehensive Plan indicates that aircraft noise, with the runway extension and building area expansion in place, will not reach levels that are incompatible with adjacent land uses according to Federal standards. The 65 DNL contour remains well inside Airport property except for one small area on the southwest side of the Airport's boundaries. A comprehensive noise abatement plan was prepared by MAC in concert with the Flying Cloud Airport Advisory Commission and FAA. This noise abatement plan has been approved by the City of Eden Prairie and is currently in effect. The implementation of the new noise abatement plan has helped insure that unnecessary aircraft noise is kept to a minimum. New Federal regulations requiring the phase out of noisier (Stage II) jet aircraft by the year 2000 will also insure that noise is minimized. Even so, aircraft noise will continue to be associated with the Airport. The Metropolitan Council has developed model noise zoning standards. These model standards put certain conditions on development in Zone C (60 to 65 DNL) and Zone D (55 to 60 DNL outside the MUSA line). Zone D only applies in rural areas which, by definition, are outside the Metropolitan Urban Service Area (MUSA) line. Part of the area surrounding Flying Cloud Airport is designated rural and part is urban.

According to the 1992 Comprehensive Plan, the number of existing houses that could be brought into Noise Zone D by the year 2010 is 15. Zone D is described as having minimal noise effect. It is possible that Zone D may not even exist if the MUSA line is extended into this area. An additional 17 homes, which are just outside the existing Noise Zone C, could be brought into Zone C. These homes are located in the Tree Farm Addition and are relatively new. All of the homes in Noise Zones D and C are in areas that currently have numerous aircraft overflights. The changes in noise will, therefore, hardly be noticeable over 20 years as opposed to an area being subjected to a new airport or runway.

A Federal Environmental Assessment (EA) and State Environmental Impact Statement (EIS) will be prepared for the extension of Runway 9R/27L. This document will include an updated noise analysis.

B. Traffic Impacts

The cumulative effects of the projects are not expected to create significant impacts to vehicular traffic.

C. Air Quality Impacts

The cumulative effects of the projects are not expected to create significant impacts to air quality.

D. Water Quality Impacts

The total amount of impervious surface will be increased due to widening and lengthening of Runway 9R/27L and the construction of the new building area. New ditches and a detention pond will be created to keep all of the increased runoff on Airport property. The water which accumulates in the detention pond will ultimately seep into the soil. This detention pond will help improve areawide water quality by containing non-point source pollution.

E. Light Emissions Impact

The relocation of the approach lights for Runway 9R is the only item which is anticipated to impact light emissions. The approach lights are fairly unidirectional, pointed at the approach path for arriving aircraft. A grove of pine trees separates residential areas from the end of the approach lights. Therefore, the cumulative effects of the projects are not expected to create significant light emission impacts.

F. Sewage Impacts

Sanitary sewer and water main connections will principally involve installing water and sewer mains adjacent to the existing building areas. Individual services will be connected into the mains as need warrants. The MWCC sewer system is adequately sized to handle the minimal increase.

G. Wetland Impacts

Preliminary field analysis conducted in 1992 indicated that no wetlands will be impacted by the projects.

H. Relocation Impacts

Five residential properties will be taken as part of the land acquisition for approach and transitional surface zone protection for the Airport. The residents of the owner-occupied properties will be relocated in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), which provides that assistance be granted to persons, businesses, farms, and non-profit organizations that may be displaced by public improvements. The rest of the property will also be acquired according to State and Federal criteria. It is hoped that a majority of the property which is acquired for Runway Protection Zone and safety zone purposes can be leased back to the City of Eden Prairie for a low density park usage which is considered a compatible land use. Therefore, the land acquisition impacts are not anticipated to be negative.

APPENDIX A

ENVIRONMENTAL ANALYSIS OF INDIVIDUAL PROJECTS

1. PROJECTS BEGINNING IN 1995

The following project is included in MAC's Capital Improvement Projects for 1995 and has the potential to effect the environment:

A. Land Acquisition

The land acquisition project involves the acquisition of approximately 245 acres of private property in the approach to Runway 9R to improve approach and transitional surface zone protection (consistent with FAA guidelines).

- **Relocation Impacts**

Five residential units will be taken with the land acquisition. The residents of owner-occupied units will be relocated according to the provisions of The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), which provides that assistance be granted to persons, businesses, farms, and non-profit organizations which may be displaced by public improvements. The remainder of the property will also be acquired according to State and Federal criteria.

2. PROJECTS BEGINNING IN 1996

The following projects are included in MAC's Capital Improvement Program for 1996 and have the potential to effect the environment:

- South Building Area Construction
- Runway 9R/27L Extension

A. South Building Area Construction

The new south building area is planned for 1996. It is located in the southwest quadrant of the Airport, south of Runway 9R/27L. Taxiway modifications and building area construction will require relocation of the VOR. Construction plans include an earthen berm, approximately 20 feet high, to be constructed on the south side of the building area to hide the hangars when viewing the river bluff area from the south. Buildings on the north side of the new building area will be limited to a maximum height of 20 feet so as to not obstruct the view of the air traffic control tower. Buildings on the far south side of the building area will be limited to a maximum height of 44 feet.

- **Traffic Impacts**

The increased building area will enable more services and aircraft to be based at the Airport. The increased traffic is not expected to be a significant impact.

- Water Quality Impacts

The impervious surface will be increased by additional hangars and taxilanes. Additional runoff will be collected in the new ditches and the new detention pond to be constructed to service the runway extension and the building area. The overall water quality of the area will not be impacted.

B. Runway 9R/27L Extension

The existing Runway 9R/27L will be lengthened from 3,900 feet to 5,000 feet and widened to 100 feet. The runway shall be designed to handle a maximum aircraft weight of 30,000 pounds. MAC Ordinance 51 shall be modified to increase the maximum weight of aircraft at the Airport from 20,000 pounds to 30,000 pounds. Analysis has shown that many of the newer, quieter (Stage III) business jets are in the 20,000 to 30,000 pound weight category. Runway 9R/27L should be designed for the dimensional standards for general utility II runways with an airport reference code of B-II. This is consistent with the Airport's designation as a minor reliever airport and the MAC's desire to limit the critical aircraft to small and medium-sized business jets. A State Environmental Impact Statement/Federal Environmental Assessment (EIS/EA) will be prepared to address impacts from this project.

- Aircraft Noise Impacts

Noise modeling indicates that aircraft noise, with the extended runway in place, will not produce levels of noise that are incompatible with adjacent land uses according to Federal standards. The 65 DNL contour remains well inside Airport property except for one small area on the southwest side. The implementation of MAC's noise abatement plan has helped to insure that unnecessary aircraft noise is reduced to a minimum. New Federal regulations requiring the phase out of noisier (Stage II) jet aircraft by the year 2000 will also insure that noise is minimized. Even so, aircraft noise will continue to be associated with the Airport. The Metropolitan Council has developed model noise zoning standards. These model standards put certain conditions on development in Zone C (60 to 65 DNL) and Zone D (55 to 60 DNL outside the MUSA line). These conditions should be included within local zoning ordinances as appropriate. As in the Cumulative Effects section, noise modeling indicated that 15 additional homes could be added to Zone D and 17 homes could be added to Zone C by 2010.

- Water Quality Impacts

The majority of the Airport's current runoff flows to a depression located near the west end of Runway 9R/27L, where the runoff quickly percolates into the ground due to the well-drained sandy subsurface soils. The extension of Runway 9R/27L and the parallel taxiway will result in most of this depression being filled. New ditches and a new detention pond will be created during the construction of this project. This on-Airport detention pond will be an effective tool for avoiding non-point source

pollution to surrounding water bodies. A final drainage plan has not yet been prepared for the Airport.

- Light Emission Impacts

The runway extension will require the relocation of the Medium Approach Lighting System (MALSR), the glideslope and middle marker, the VASI on each runway end, and the Runway End Identifier Lights (REILS) on the east end. The lights will be pointed at the approach path for arriving aircraft and a grove of pine trees separates them from residential areas. Significant light impacts are not anticipated.

- Relocation Impacts

Land acquisition of approximately 245 acres will be required for the extension of Runway 9R/27L and the building area. As indicated previously, five residential units will be acquired. The residents of the owner-occupied units will be relocated according to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. The land between County Road 4 and Eden Prairie Road, which underlies the Runway Protection Zone and Minnesota Safety Zone A will be acquired. Most of the land acquired for the runway on the west end will not be required for Airport purposes. Certain low density park uses are compatible in the Runway Protection Zone and Minnesota Safety Zone A. It is possible that much of the land acquired can be leased back to the City of Eden Prairie for a compatible use.

3. PROJECTS BEGINNING IN 1998

Only one project, Utility Connections, is planned for initiation in 1998. Flying Cloud Airport is currently served by individual septic systems and private wells, and borders the Metropolitan Urban Service Area (MUSA) on its north and east sides. Eleven thousand linear feet of sewer and water service will be extended to the control tower and FBO buildings with new 8" mains, beginning at Mitchell Road and continuing on MAC property adjacent to CR1 and TH 169, and ending at the control tower. Positive social environmental effects will be obtained by the provision of municipally-controlled and monitored utility services, capping of several existing wells with questionable water quality, and elimination/clean up of several individual septic systems. Cumulatively, these improvements will provide improved potable water supplies and waste distribution methods at Flying Cloud Airport, as well as an enhancement to existing Air Rescue and Fire Fighting protection facilities.

Individual services will be connected into the mains as need warrants.

4. OTHER PROJECTS

No projects will begin in 1997, 1999, 2000, or 2001.

APPENDIX B

CAPITAL IMPROVEMENT PROJECTS (1995)
CAPITAL IMPROVEMENT PROGRAM (1996)

1. CAPITAL IMPROVEMENT PROJECTS - 1995

A. Land Acquisition - \$1,750,000

Flying Cloud Airport is bounded by T.H. 169/212 on the east and south sides; County Road 1 (Pioneer Trail) on the north; and County Road 4 (Spring Road) on the west. The Metropolitan Council's Metropolitan Development Guide, Aviation Chapter, recommends guidelines that communities should use to encourage compatible land uses in airport environs and discourage incompatible land uses. The City of Eden Prairie's comprehensive plan addresses the airport as a "special" plan area and identifies airport zoning standards (acknowledged but not adopted at this time).

However, recently there has been and continues to be considerable residential development to the east and west/northwest of the airport. The degree of development to the west/northwest of the airport brings to question the ability of "comprehensive plans/zoning standards" to adequately protect existing airport facilities from encroachment by non-compatible land uses. Obviously, the most positive method of preventing non-compatible land uses is to acquire the land and control its use.

It is proposed to acquire approximately 245 acres of property immediately south and west of existing airport boundaries and an approximate 3.4 acre parcel north of the airport to provide approach and transitional surface zone protection.

The proposed acquisitions south and west of the airport would consist of those parcels identified to be within the FAA Participation Lines as determined from the location of the existing runway 9R/27L thresholds. The FAA participation lines encompass a rectangular area that extends 5,200 feet along runway centerline from each threshold and laterally 1,550 feet from the runway centerline.

The property acquisition north of the airport consists of a single parcel that abuts airport property. There are structures on the property that are within the Runway Protection Zone and penetrate the 20:1 approach surface.

The proposed acquisitions would be undertaken in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, DOT regulations and with FAA Order 5100.37, Land Acquisition and Relocation Assistance for Airport Development.

Once the property has been acquired in fee simple title, any existing structures will be removed by relocation or demolition and remaining basements will be filled and topped with clean fill and top soil. Turf will be reestablished over disturbed and filled areas. Public/Private utilities will be vacated, capped, or otherwise severed to the individual properties. Existing vegetative cover (trees and shrubs) will be preserved to the extent practical.

2. CAPITAL IMPROVEMENT PROGRAM - 1996

A. South Building Area Construction - \$6,100,000

The Long Term Comprehensive Plan for Flying Cloud Airport recommends that a new building area be constructed on the south side of the airport. As hangar space is at a premium, it is proposed to construct the new building area at this time. A Federal and State environmental assessment will be prepared for this project.

B. Runway 9R/27L Extension - \$4,000,000

The Long Term Comprehensive Development Plan for Flying Cloud Airport recommends that Runway 9R/27L be lengthened from 3,900 feet to 6,000 feet to allow for safer operation of light to medium sized business jets and heavy twin engine aircraft. Included with the runway extension would be the extension of the existing north and south parallel taxiways. A Federal and State environmental assessment will be prepared for this project. Previously approved by the Commission.