TRA Airport Consulting

Architecture
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MASTER PLAN
Anoka County · Blaine Airport

Minneapolis · Saint Paul
Metropolitan Airports Commission

Consultant's Report prepared for the
Metropolitan Airports Commission
Pursuant to 1983 Laws, ch 326, sec 18

MASTER PLAN

Anoka County-Blaine Airport

September 1983

Prepared for the

Minneapolis-Saint Paul
Metropolitan Airports Commission

by

TRA Airport Consulting

in association with

Plog Research, Inc.
The Parry Company
Toltz, King, Duvall, Anderson & Associates

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CHAPTER 1
INTRODUCTION

1.1 STUDY PURPOSE

The purpose of this study is twofold. The first is to evaluate alternatives for developing the Anoka County-Blaine Airport as a Minor airport. The second is to prepare an airport layout plan once an alternative airport configuration has been selected for implementation.

A planning goal was established to maximize site utilization with the airport in a Minor role. The goal of maximum utilization was selected for two reasons. First, it reflects the system plan policy to develop existing airport facilities to their maximum capability before investing in new facilities (Metro Council 1977). Second, it reflects the charge to the Metropolitan Airports Commission (MAC) to maximize return in aviation services for the dollars invested in the airport.

When the master plan process was begun in 1979, the central purpose of the study was to evaluate the social and environmental impacts associated with development of the airport as either an Intermediate airport or as a Minor airport. Anoka County-Blaine Airport is classified Intermediate in the 1990 system of the Aviation Chapter of the Metropolitan Development Guide, adopted in 1977 by the Metropolitan Council of the Twin Cities Area (Metro Council 1977).

During the conduct of the master plan study, legislation enacted by state government limited future development at Anoka County-Blaine Airport to that consistent with a Minor role. Further legislation required that existing runway lengths be maintained. Thus, the master plan study evaluates only alternative airport configurations within the Minor role.

1.2 TWIN CITIES AIRPORT PLANNING PROCESS

Airport planning in the Twin Cities metropolitan area is conducted at three levels: Systems Planning, Master Planning, and Project Implementation. Metro Council is responsible for aviation systems planning, which takes the form of the Aviation Chapter of the Metropolitan Development Guide. The systems plan determines the need for airports in the metropolitan area, and based on need, determines the role each airport within the region should serve.

Once Metro Council has determined the role each airport should fill, it becomes the responsibility of the Metropolitan Airports Commission (MAC) to develop a master plan for the airports which they own and operate and to conclude whether the planned role can be accommodated feasibly and compatibly. Once the MAC has prepared a master plan and airport layout plan for each airport, Metro Council reviews the master plan for consistency with the Metropolitan Development Guide. Thereafter, projects are implemented by the MAC.

An airport master plan is prepared following procedures recommended by the Federal Aviation Administration (FAA). An important step in the planning process is the formulation and evaluation of airport layout alternatives considering numerous criteria, including facility requirement needs, operational safety and efficiency, and social and environmental compatibility.

Project implementation occurs following adoption of the airport master plan. Specific development projects are proposed when they are needed, and construction documents prepared. Any state or federal funding required is applied for, and corresponding environmental documentation prepared. Following project review, proposed development is carried out by the MAC.

1.3 SUMMARY OF AVIATION SYSTEM PLAN

The Aviation Chapter of the Metropolitan Development Guide outlines several recommended changes or additions to the metropolitan airport system to meet the future aviation needs of the region to the year 1990.

The Aviation Chapter establishes a functional and operational classification of airports, by three classes: Major, Intermediate, and Minor. The classification allows each metropolitan aviation facility to be defined functionally in terms of the primary user, and operationally in terms of types of aircraft, size of facility, and extent of facility influence area.

Airports classified as Major serve an international, national, and statewide geographic area. The primary users accommodated at these facilities are the air carriers: scheduled, commuter, and supplemental. Minneapolis-Saint Paul International Airport (Wold Chamberlain Field) is the only airport classified as Major.

An Intermediate airport serves the national, state, and metropolitan area. Intermediate airports are designed to accommodate all classes of general aviation operations up through and including business jet aircraft. Saint Paul Downtown Airport (Holman Field) is currently classified and configured as an Intermediate airport. The 1977 Aviation Chapter of the Metropolitan Development Guide classified Anoka County-Blaine Airport as Intermediate in the 1990 system. However, as already discussed, legislative action has eliminated development as an Intermediate airport from consideration.

Minor airports have a state and metropolitan-scale service area. Personal business flying and instructional activity are the primary uses at Minor airports. Flying Cloud, Crystal, Lake Elmo, and Airlake airports are classified as Minor airports.

The current classifications of the seven airports owned and operated by the MAC are shown in Exhibit 1-1 and are listed in the following table.

Airport	Aviation Chapter Classification
Minneapolis-Saint Paul International (Wold Chamberlain Field)	Major
Saint Paul Downtown Airport (Holman Field)	Intermediate
Anoka County-Blaine Airport (Janes Field)	Minor (Aviation Chapter current classification)
Flying Cloud	Minor
Crystal	Minor
Lake Elmo	Minor
Airlake	Minor

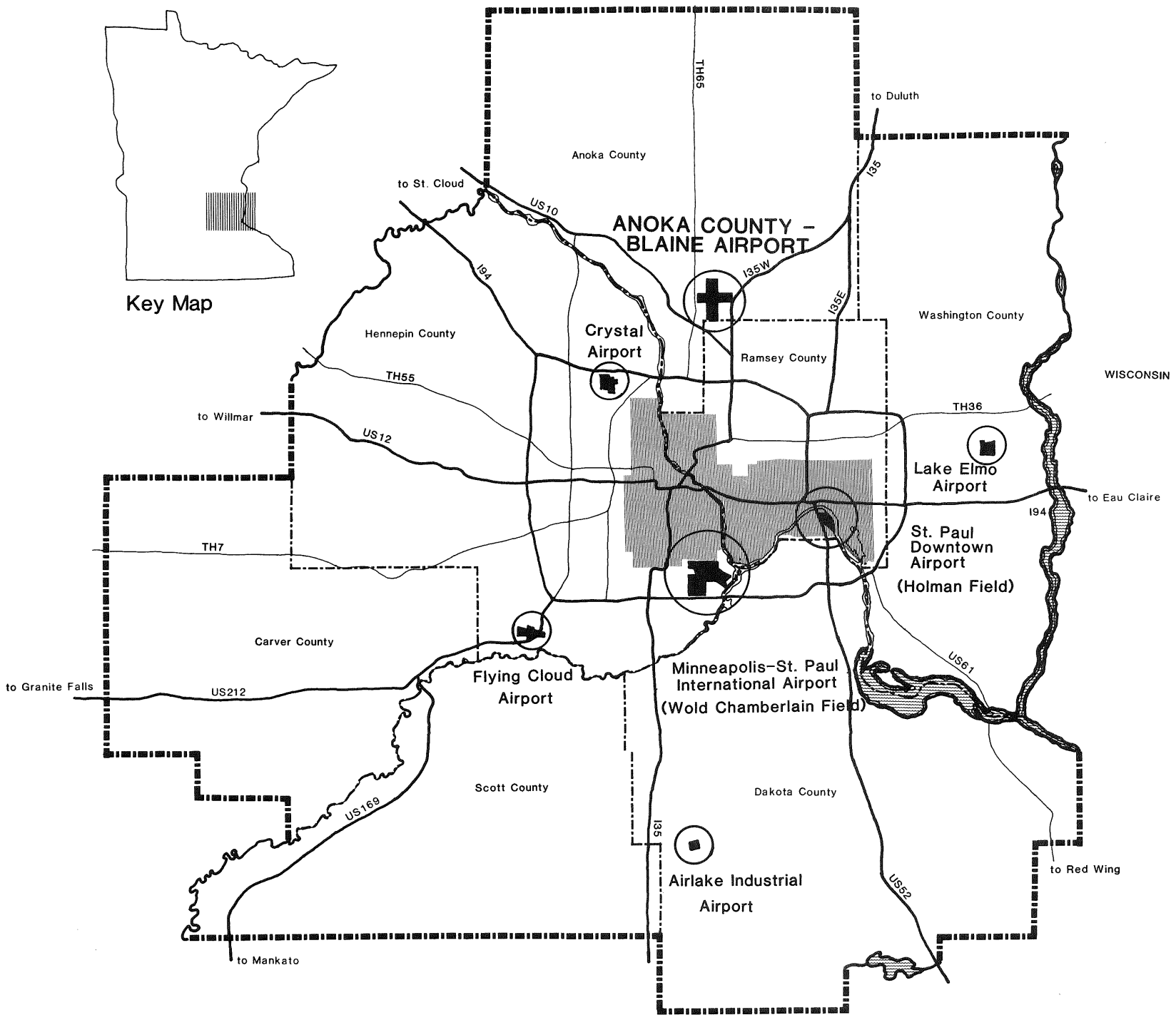
Sources: Aviation Chapter, Metropolitan Development Guide, 1977; MAC.

1.4 HISTORY OF ANOKA COUNTY-BLAINE AIRPORT

The Metropolitan Airports Commission (MAC) was established by the State Legislature in 1943, and charged with the responsibility for development and management of the airports within the Twin Cities region. The Anoka County-Blaine Airport first underwent major development in the 1950s. The airport was developed to serve in an Intermediate role as it was then considered. At that time the primary north-south runway was 5,900 feet in length. The crosswind east-west runway was 3,200 feet in length. In the mid-1960s, the north-south runway was shortened to 4,855 feet, the length it remains today, and the unused pavement was removed.

Under MAC's auspices the presently approved airport layout plan for the Anoka County-Blaine Airport was developed in the mid-1960s. Since that time, the proposed future role of the airport within the regional system has changed several times. An understanding of the history of the regional airport system plan process is necessary in order to understand the history of Anoka County-Blaine Airport. This is presented in the paragraphs which follow.

Metro Council, established by the Minnesota State Legislature in 1968, is vested with authority to conduct regional planning, including regional



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EXISTING MAC AIRPORT SYSTEM

Exhibit 1-1

airport systems planning. Over the years, planning accomplished by Metro Council has had a substantial impact on Anoka County-Blaine Airport.

In 1968, aviation was growing rapidly throughout the country. In response to increased demand in the Twin Cities region, the need for a new major air carrier airport was identified, and the vicinity of Hamm Lake was designated for its location. Following this action, aviation demand exhibited an unanticipated decrease. Metro Council reviewed the situation and concluded that a new air carrier airport located at Hamm Lake was not feasible due to environmental concerns. Subsequently, the Hamm Lake airport proposal was dropped from consideration.

In 1972, Metro Council updated the regional aviation system plan by publishing the first Aviation Chapter of the Metropolitan Development Guide. The forecast of future aviation demand again identified the need for a new major air carrier airport by the mid-1980s. The vicinity of Grow Township was designated as the search area for the new airport. In order to prevent any possible airspace conflict with the new air carrier facility, nearby Anoka County-Blaine Airport was designated as what is today known as a Minor airport.

In 1976, the MAC conducted a runway pavement resurfacing overlay project at the airport to prevent runway pavement deterioration. Partially funded by the FAA, the funding grant agreement included a covenant that requires MAC to maintain runways as constructed as long as the facilities are needed, or not to exceed a twenty-year period.

In 1977, trends in aviation demand were exhibiting less than the growth rates previously forecast. In response to this trend and to an analysis of capacity for passengers, aircraft, and surface vehicles that was produced as part of the master plan for Minneapolis-Saint Paul International Airport, Metro Council determined that there was no need for a new major airport. This caused the search area for a new site to be eliminated from the Metropolitan Development Guide. At the same time, a need for an additional Intermediate category airport was identified, and Anoka

County-Blaine Airport was classified Intermediate. On the basis of this classification, MAC undertook the present master plan study.

In 1977, the State Legislature also initiated a study to consider potential alternatives to location of National Guard helicopters at Saint Paul Downtown Airport (Holman Field). Among the alternatives, Anoka County-Blaine Airport was considered as a potential location. Ultimately it was concluded that helicopters should remain based at Holman Field.

In June 1979, the State Legislature passed into law House File No. 1 (Extra Session). The bill established a moratorium prohibiting any land acquisition or construction of facilities at the Anoka County-Blaine Airport until July 1, 1981, and directed the preparation of a master plan for the airport.

In April 1980, while the preparation of the airport master plan was underway, the Minnesota State Legislature enacted legislation prohibiting the MAC from expanding an existing metropolitan airport from Minor classification to Intermediate classification as defined by the Metropolitan Development Guide. As a result, the MAC dropped consideration of development of Anoka County-Blaine Airport as an Intermediate airport. This master plan only considers alternatives which enable the airport to develop in a Minor role. The selected plan is for a Minor Airport. However, at present the Anoka County-Blaine Airport remains classified Intermediate in the 1990 system by Metro Council under the 1977 regional systems plan.

The 1983 Legislature enacted one further modification on the ability of the Metropolitan Airports Commission to develop the airport. House File 1290, Section 232, states:[1]

> The metropolitan airports commission shall not take any action with respect to an airport owned by it that would result in a permanent net reduction in usable runway length at the airport. Retention of existing usable runway length at an airport owned by

> the metropolitan airports commission shall not cause the airport to be reclassified from a minor use to an intermediate use airport.

Simply put, the 1980 legislation remains in full force and effect, with the sole exception that MAC may not take any action to permanently reduce "existing usable runway length."[2]

1.5 STUDY SPONSORS

This study has been sponsored by the Minneapolis-Saint Paul Metropolitan Airports Commission. It was financed in part by the Federal Aviation Administration with funds provided through the Planning Grant Program of the Airport and Airway Development Act of 1970. Additional funds were provided by the Minnesota Department of Transportation, Division of Aeronautics.

1.6 STUDY CONSULTANTS

Four firms formed a consultant team to conduct the master plan study. The firms are: TRA Airport Consultants, The Parry Company, Plog Research, and Toltz, King, Duvall, Anderson & Associates (TKDA). TRA is the leader of the team and is responsible for overall coordination of the study, and for the majority of technical analysis leading to the alternatives evaluation. The Parry Company is responsible for the noise analysis and preparation of the noise exposure contours. Plog Research is responsible for the community involvement survey. TKDA is responsible for preparation of the detailed airport layout plan once an alternative is selected for implementation.

1.7 CITIZEN PARTICIPATION

At the start of the master plan study, a broad citizen participation process was established to ensure both that the public would be kept continually informed, and that public input would make a meaningful contribution to the development of a master plan. Exhibit 1-2 diagrams the

relationship of the citizen participation process to the master plan study as originally envisioned.

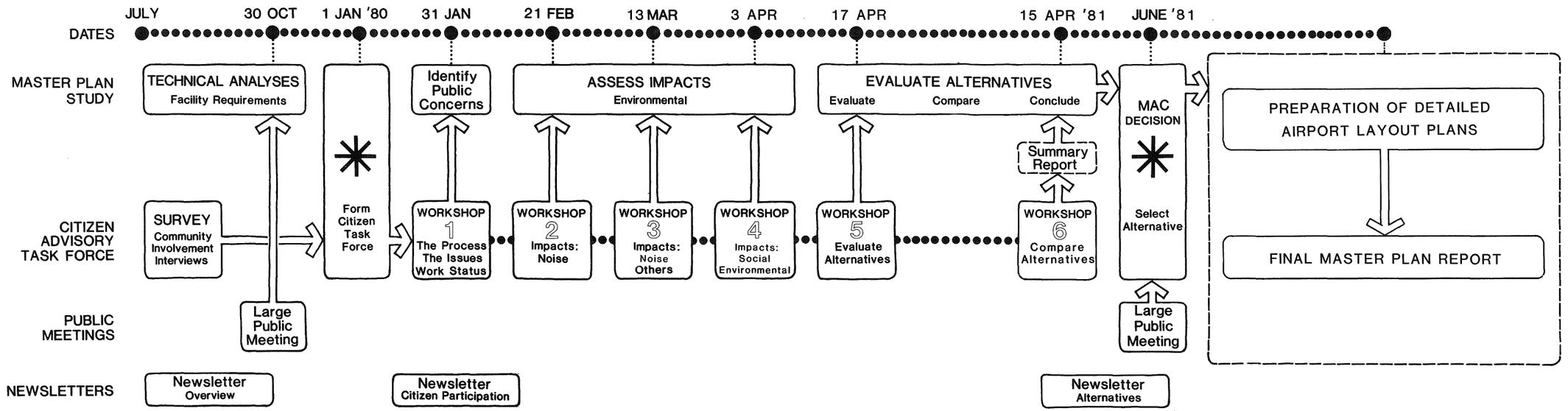
The process included three major types of activities: newsletters, large public meetings, and a series of workshops with the Anoka County-Blaine Airport Advisory Task Force. The major component of the citizen participation program was the work of the airport Task Force, the official group ensuring that all local citizens' concerns were represented and considered in the master plan study.

TRA met with the Airport Task Force five times between January and April 1980. Participating on the Airport Task Force were official representatives appointed by the mayors of the adjacent cities, and approximately 50 local individuals representing various interests. The Task Force was formed from those expressing interest through the Community Involvement Survey, at the first large public meeting, and at the first workshop.

The Task Force role was twofold: to keep the MAC and TRA continually informed of public opinion, and to contribute input to the eventual selection of an alternative future for the airport. This contribution took several forms including:

- Aiding in the evaluation of the relative impacts and benefits of each alternative;
- Aiding in the evaluation of the significance or importance of the social and environmental impacts;
- Aiding in the development and evaluation of potential mitigation and implementation measures.

Each Airport Task Force workshop was an informal working session and included active participation by all members. Within the week following each workshop TRA prepared a summary memorandum to the MAC synthesizing the discussion in the workshop and detailing the Task Force's position on the issues. This memo was also sent to the Task Force



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THE CITIZEN PARTICIPATION PROCESS

Exhibit 1-2

NOTES TO CHAPTER 1

1. House File 1290, Section 232.

2. Ibid.

CHAPTER 2
FINDINGS AND RECOMMENDATIONS

2.1 FINDINGS

The Anoka County-Blaine Airport will need various improvements in aviation facilities if it is to continue to meet three basic objectives:

(1) to operate the airport safely and efficiently;

(2) to develop and operate the airport in a manner as compatible with the environment as possible;

(3) to provide adequate airport facility capacity to meet future aviation demand.

The airport is located in one of the most rapidly urbanizing portions of the Twin Cities Metropolitan Area. The cities within the airport vicinity have changed considerably in the past 15 years and trends indicate increased urbanization will continue. Continued urban growth will both increase demand for aviation facilities in the northern suburbs, and at the same time, increase the potential for land use conflict between the airport and the adjacent communities.

The forecast of future aviation demand indicates that by 1985 the airport will experience demand for between 322 and 399 based aircraft, and a total of between 177,100 and 279,300 total annual aircraft operations. Peak day operations will range from 533 to 841 operations, and peak hour operations from 60 to 94 operations. By the year 2000, demand for based aircraft is expected to increase in the range of 510 to 630 aircraft, and total annual operations are expected to increase in the range of 280,500 to a high of 441,000.

The forecast indicates that annual operations will be nearing the existing runway capacity of approximately 230,000 operations between 1985 and 1990. If no improvements in airport facilities are made, demand will exceed existing capacity sometime in the early to mid-1990s.

Conflicts presently occur between the existing airport and the adjacent communities. The Airport Advisory Task Force and other citizen input indicates that the public is concerned about a number of issues. The future of the airport is viewed to involve tradeoffs between regional benefits and localized impacts, between general economic expansion and deterioration in the local quality of life. Paramount among local concerns are associated noise impacts, air safety considerations, increased surface traffic, and effects on nearby property values.

Currently the City of Mounds View south of the airport is most acutely affected by airport operation. The existing primary runway, Runway 17-35, is oriented north-south, requiring the majority of air traffic to be concentrated over the residential area south of the airport. Concerns of local residents appear to be with low-flying aircraft -- primarily noise impact from take-offs and landings and safety considerations because the airport currently does not have a full-time air traffic control tower.

Residential areas to both the east and west also experience aircraft overflights when the crosswind runway, Runway 8-26, is in operation, and by aircraft in the flight patterns to Runway 17-35.

The noise exposure analysis conducted as part of this master plan indicates that off-airport cumulative noise exposure of the existing airport configuration is within acceptable limits according to the FAA guidelines (see Chapter 7). However, single noise events associated with single overflying aircraft can and do cause short duration noise at levels sufficient to cause annoyance. The noise analysis indicates that as the use of the airport increases, cumulative noise exposure south of the airport will increase, unless basic changes in runway configuration and threshold location are made.

Three alternative airport runway configurations have been developed, each of which would reduce cumulative noise exposure south of the airport by

creating a more uniform distribution in all directions. Exhibit 2-1 shows each alternative runway layout in comparison to the existing airport configuration. Any one of the alternatives would accommodate future forecast demand and accommodate safe and efficient airport operation, by separating high-performance aircraft from slower, less powerful aircraft, on parallel runways in the primary operating direction. Alternative C would make this possible in two directions. No alternative would result in significant social and environmental impacts according to current standards and guidelines (see Chapter 7). Future land use compatibility for any one of the alternatives can be achieved through coordination with the adjacent communities in planning and zoning activities.

The primary vehicle for such coordinated planning would be the establishment of a joint Airport Zoning Board as allowed under Minnesota law. The MAC and representatives from each adjacent community would comprise the Board. To the extent allowed by Minnesota Department of Transportation (Minnesota DOT) rules and regulations, the Board would evaluate existing zoning around the airport, determine and implement appropriate zoning controls compatible with both future airport operation and adjacent communities' comprehensive land use plans.

2.2 RECOMMENDATIONS

Future development and operation of the airport should be directed toward the three broad objectives listed in the beginning of this chapter.

The first and third objectives can be met through additional runway capacity and establishment of instrumentation and air traffic control.

Each alternative includes a parallel runway in the primary operating direction. With parallel runways, high-performance turboprop aircraft and itinerant operations can be physically separated from less powerful single-engine aircraft, training activity, and local operations. As a result, potential conflict both on the ground and in airspace can be avoided, and the airport can operate more safely and efficiently than if all traffic is concentrated on a single primary runway.

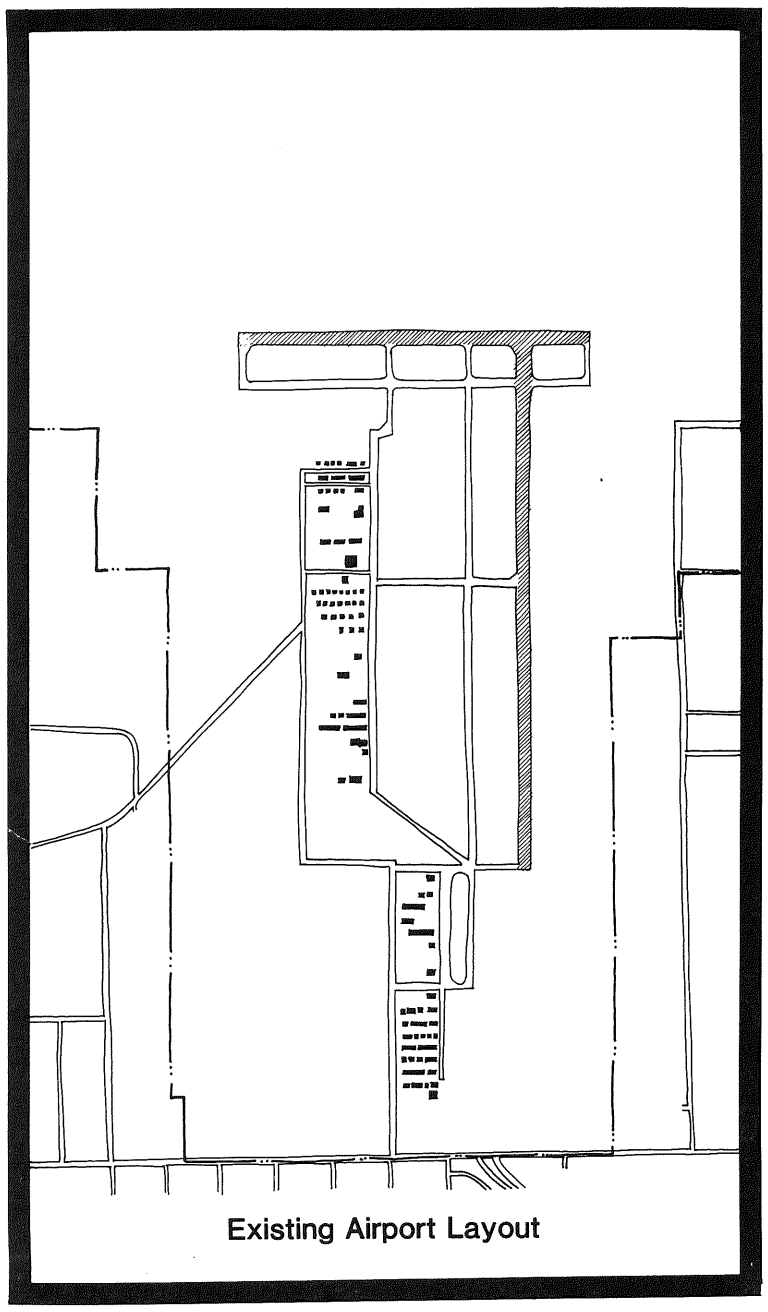
An Instrument Landing System (ILS) is recommended for the primary runway. For Alternative A the ILS should be established on Runway 35L. For Alternatives B and C the ILS should be established on Runway 26L. A further description of the recommended ILS is contained in Chapter 5, Facility Requirements.

Establishment of an FAA-operated air traffic control tower is recommended. Annual operations in 1980 are projected to meet the FAA criterion for establishment of a tower. Actual justification results from FAA traffic counts. To date, the FAA has not made traffic counts at the airport. Typically, a new control tower at a general aviation airport is operated 16 hours a day.

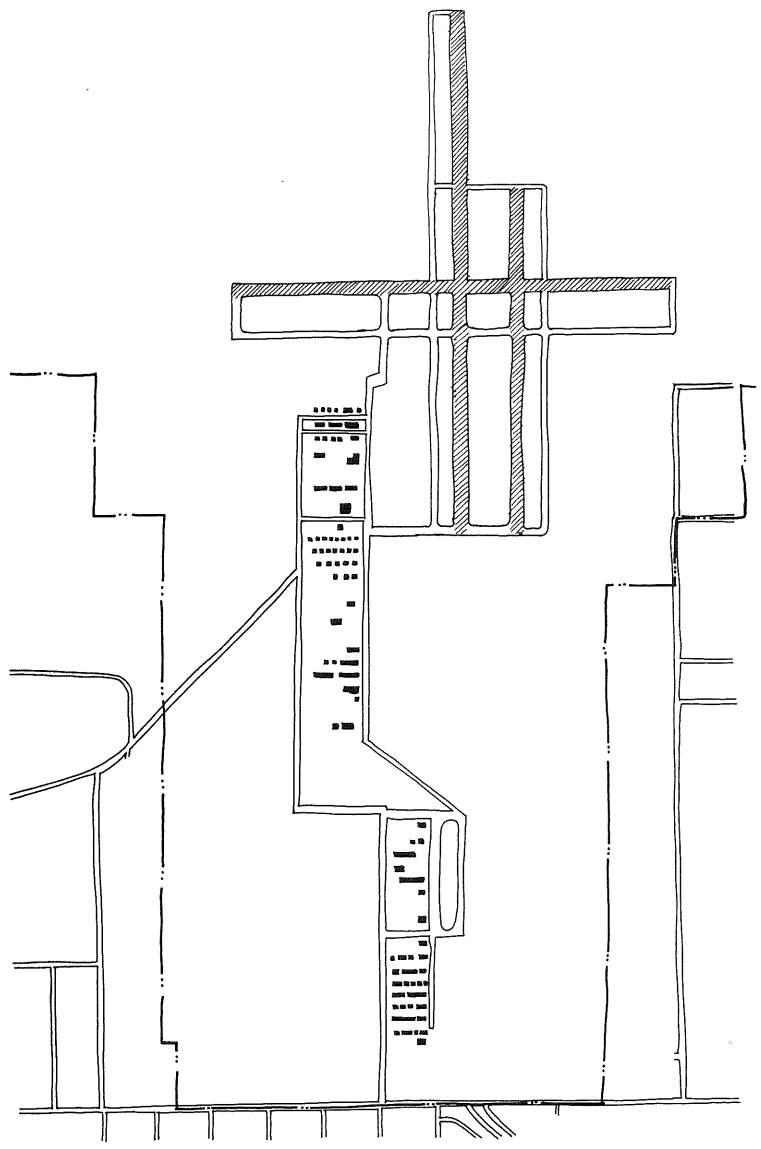
The second objective, to develop and operate the airport in as socially and environmentally compatible a manner as possible, can also be achieved. The environmental analysis conducted as part of this study indicates that social and environmental changes would be associated with each of the three alternatives evaluated, but that none would create significant impacts according to state and federal standards and guidelines. Therefore, any one of the alternatives could be developed and operated to be more compatible with the surrounding community than if the existing configuration were allowed to continue to grow to capacity.

Maintaining the airport as it exists today and allowing operations to grow until capacity is reached will cause higher cumulative noise exposure south of the airport than would any of the development alternatives. Noise exposure east and west of the airport would increase, although within acceptable limits according to the guidelines. In short, the existing airport configuration at capacity would do nothing to decrease noise exposure or increase land use compatibility.

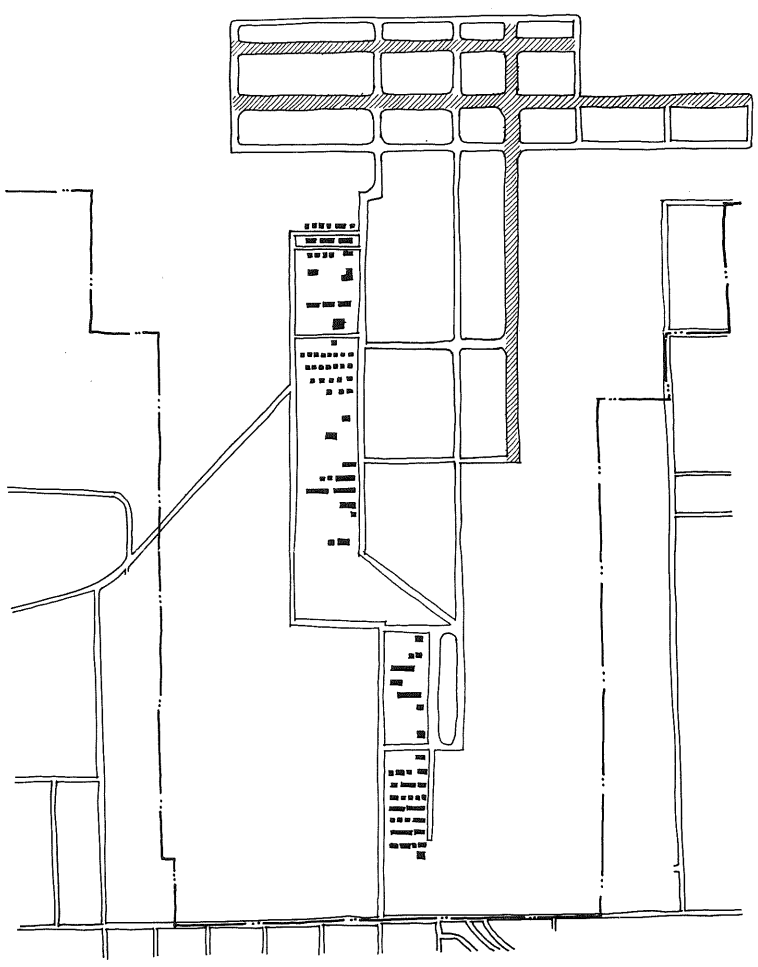
Alternative A would cause little impact to the environmental impact parameters analyzed. However, because the primary operating direction would remain oriented north-south, Alternative A would cause the highest cumu-



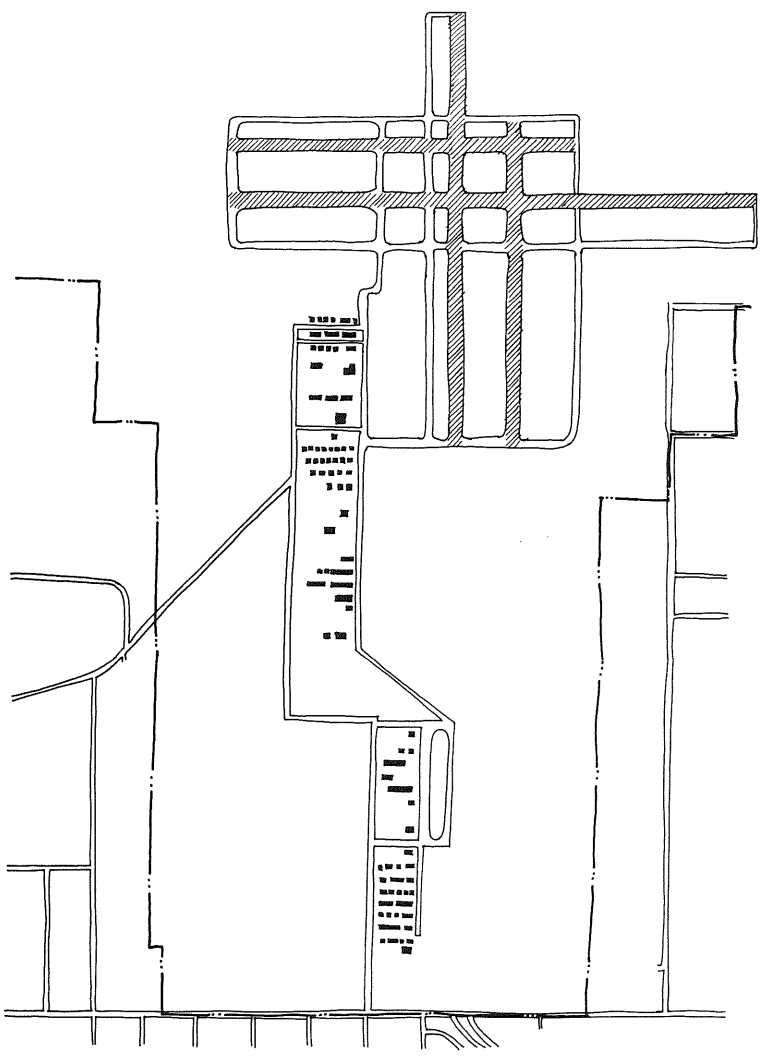
Existing Airport Layout



Alternative A



Alternative B



Alternative C

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ALTERNATIVE AIRPORT LAYOUTS

Exhibit 2-1

lative noise levels of any development alternative, off the airport property to the south. When fully developed in the year 2000, cumulative noise levels south of the airport would be approximately what they are at present, even though total aviation traffic will have increased between 1980 and 2000. This result is achieved by displacing the runway threshold northward. When fully developed, cumulative noise levels off the airport would remain within limits of acceptability according to the FAA guidelines.

Alternative B would shift the primary operating direction from north-south to east-west and would concentrate noise exposure in the new primary direction. Alternative B will have a higher associated social impact than either of the other alternatives. Considering environmental impact, Alternative B would require the least amount of new runway to be constructed. However, most new construction would have to occur in floodplains and wetlands, creating a moderate amount of impact to wetlands, wildlife habitat, and the hydrologic system.

Alternative C would have the least relative impact of any alternative to the social environment. The alternative would retain both existing runways and require construction of two new runways, a parallel runway in each direction. Providing parallel runways in both operating directions would greatly reduce cumulative noise exposure on all sides of the airport.

At Anoka County-Blaine Airport predominant wind conditions permit such flexibility to be achieved by allowing the airport's primary runway to operate in either the north-south or east-west orientation. Parallel runways in each direction with equal runway length and operating capacity allows this flexibility.

While Alternative C would result in the least noise exposure and social impact, it would require the greatest disturbance of the site. Thus, it is likely to have higher relative impacts to the natural environment than would Alternatives A or B.

2.3 SUMMARY

In summary, allowing the airport to remain in its existing configuration can only exacerbate the problems of operational efficiency, safety, and community noise exposure present at the airport. Any of the three alternatives can improve operating conditions and meet the three recommended objectives if it includes establishment of an ILS and an FAA-operated air traffic control tower. Even though Alternative C would require the greatest amount of facilities development and on-site environmental disturbance during construction, it provides the best opportunity for long-term development and operation in a manner compatible with the adjacent communities.

The remainder of this report presents the detailed master plan study findings for each subject area, and is organized as follows:

Chapter 3: Inventory
Chapter 4: Forecast of Aviation Demand
Chapter 5: Facility Requirements
Chapter 6: Alternative Evaluation
Chapter 7: Environmental Analysis
Chapter 8: Plan Implementation

Appendix A: Citizen Participation Program

CHAPTER 3
INVENTORY

3.1 INTRODUCTION

The objective of an airport inventory is to document existing conditions at the airport, and to review background information that will serve as input to the airport master plan. It also provides the base information for development of the forecast of aviation demand and facility requirements.[1]

The inventory is divided into two major sections. First, the regional context and airport vicinity are described, and the characteristics of the surrounding communities are reviewed. Second, the existing airport facilities are documented.

3.2 REGIONAL CONTEXT

3.2.1 Regional Urbanization

Anoka County-Blaine Airport is located in the City of Blaine, Anoka County, in the northern portion of the Twin Cities Metropolitan Area, within one of the most rapidly urbanizing portions of the entire region.

The Twin Cities Metropolitan Area consists of the seven counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. Conversion of land from rural or open space uses to urban uses has accelerated during the past decade. Between 1970 and 1975, about 3 percent, or approximately 56,000 acres, of the region's vacant and agricultural land was converted to urban uses.[2] This compares to a total of only 88,000 acres converted to all urban uses during the entire preceding decade from 1960 to 1970. Of the total land converted, about 50 percent was converted to public and recreational land. In many cases, this represents a change in land use classification rather than any actual conversion to built urban land uses.

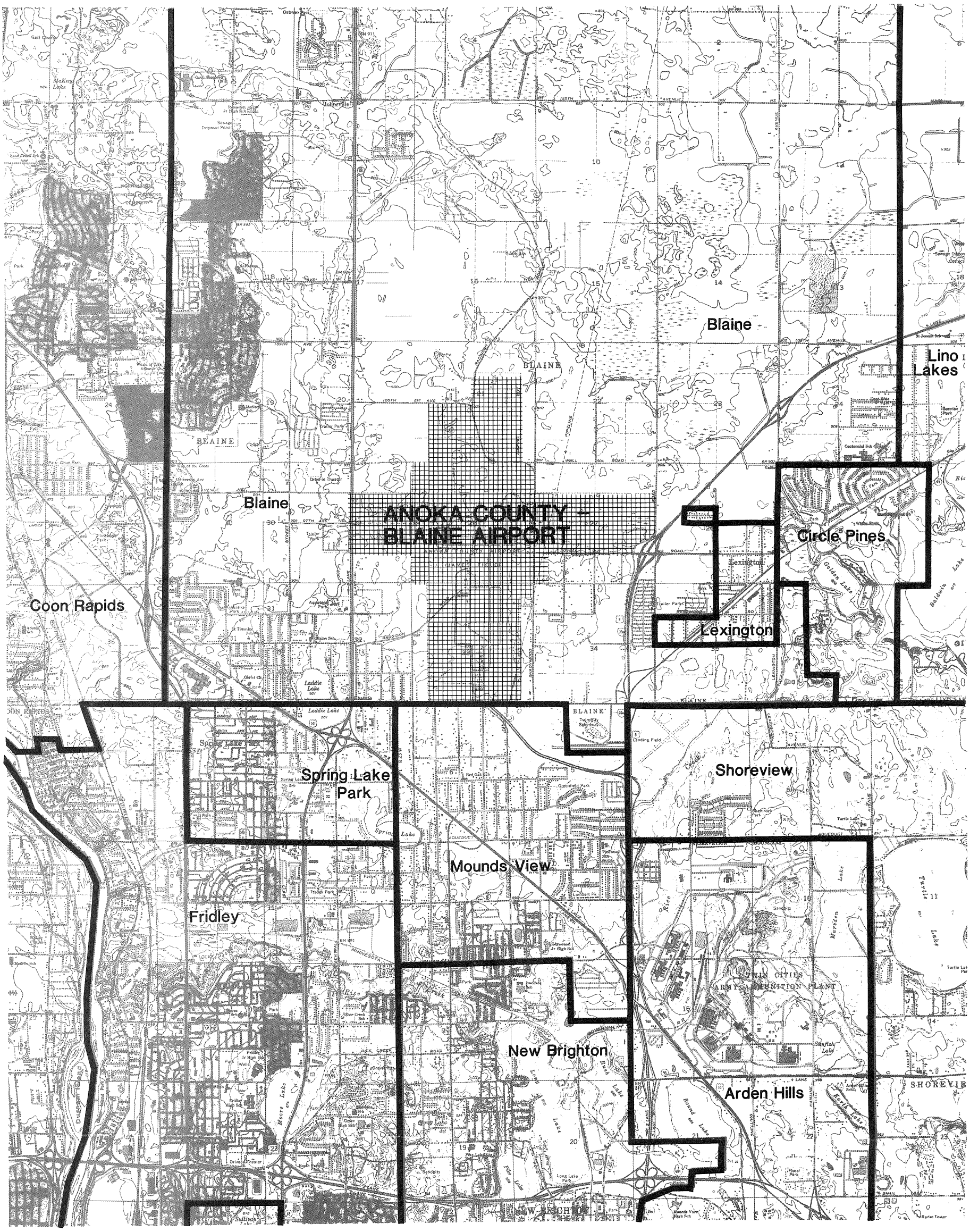
Of all urban land uses, residential use accounted for the largest amount, approximately 30 percent of all land, converted to urban uses between 1960 and 1975.

Commercial and industrial land comprised about 20 percent of all urbanized land in the metropolitan area, and exhibited considerable growth during this period. Even though commercial land represented a small proportion of the total urban land in the region, it showed a very rapid growth rate, almost doubling in the 15-year period. This was largely a result of new suburban shopping center development.

While the entire metropolitan area has been under pressure for urbanization, it is the pattern of that growth that has most directly affected the cities in the vicinity of the Anoka County-Blaine Airport. While the southern portion of the metropolitan area underwent the greatest total acreage conversion to developed urban land uses between 1970 and 1975, the northern suburbs have received the greatest amount of growth of low-density residential uses. Anoka County alone saw 4,251 acres and 11,750 new housing units of low-density residential development during this five-year period.

The Metro Council Development Framework planning program documented in the Metropolitan Development Guide has classified the metropolitan area into eight suburban planning sectors, exclusive of the cities of Minneapolis and Saint Paul.[3] Three development "rings" around the Twin Cities have been overlaid on these sectors in order to distinguish communities that are considered to be "Inner Ring Suburbs, Developing Suburbs, and Rural Areas."

The Anoka County-Blaine Airport is located in the "North Minneapolis Sector" of the developing suburban ring, as are the surrounding communities of Blaine, Lexington, Circle Pines, and Coon Rapids (see Exhibit 3-1). The communities to the east and southeast of the airport, Lino Lakes, Shoreview, and Arden Hills, are located in the "North Saint Paul Sector" of the developing suburban ring.



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feet in thousands
0 1 2 3 5
miles
0 1/4 1/2 3/4 1

acres
160
40
10

AIRPORT VICINITY

Exhibit 3-1

The remaining communities in the vicinity of the airport, Spring Lake Park, Mounds View, Fridley, and New Brighton, are within the "North Minneapolis Sector" of the inner suburban ring.

Throughout the metropolitan area the developing ring experienced the largest total area undergoing urbanization during the five-year period from 1970 to 1975. This has been the consistent trend since 1960. The two developing ring sectors in the vicinity of the Anoka County-Blaine Airport exhibited among the lowest total acreage for overall urbanization, but among the highest percentage growth for residential and commercial development. The inner ring communities have experienced relatively large absolute growth of urbanization, although the total acreages are somewhat smaller due to higher densities. The two inner ring planning sectors in the vicinity of the airport exhibited the greatest absolute growth and among the highest percentage rates of growth of urbanization for any of the inner ring sectors in the entire metropolitan area.

In summary, communities within the vicinity of the Anoka County-Blaine Airport have changed considerably in the past 15 years and will continue to undergo increased urbanization, should present trends continue. Urbanization will likely take the form of increased development of low- and medium-density residential land use, commercial and industrial land uses, and public and recreational land uses. Conversely, currently vacant or agricultural lands will continue to decrease as they are converted to built urban land uses.

With generally increasing urbanization will come the need for improved and expanded utilities, transportation network, and other public services.

3.2.2 Regional Public Services

Regional planning for public services in the Twin Cities Metropolitan Area is carried out by the Metro Council. Metro Council is responsible for establishing policy and plans for regional development. Metro

Council has prepared a Metropolitan Development Guide for the metropolitan area. The guide consists of a compilation of policy statements, goals, standards, programs, and maps prescribing guides for orderly public and private development of the metropolitan area. The guide plans for future land use, parks and open space land needs, airports, highways,transit facilities, public hospitals, libraries, schools, and other public buildings.

Metro Council also prepares a Metropolitan System Statement for each community, including specific considerations to be included in preparation of local comprehensive plans.

Local communities within the metropolitan area are required to prepare a comprehensive plan within the constraints of the Metropolitan Development Guide, addressing three broad planning categories of land use, public facilities, and implementation.[4] These comprehensive plans must be coordinated with adjacent communities' plans and with Metro Council public service plans.

Metro Council is also responsible for defining the planned metropolitan area limits for provision of urban services and accommodation of urban land use growth. This is accomplished by the delineation of a "Metropolitan Urban Service Area Line" (MUSA Line). The MUSA Line is based on forecasts of future land area needs for urban land uses and an inventory of available vacant land suitable for urban development. Provision of public services, including extension of sewer service, must be contained within the MUSA Line, in order to be approved by Metro Council.

As discussed in section 7.3.3 of this study, the existing MUSA Line occurs to the north of the Anoka County-Blaine Airport, excluding the northeast portion of Blaine from the urban service area. The City of Blaine has requested that the MUSA Line be redesignated further to the north, and has requested the extension of a metropolitan sewer interceptor northward from the city of Mounds View to serve this area.[5]

If the MUSA Line is redesignated and the sewer interceptor extended, the interceptor would likely cross the eastern portion of the airport property. Provision of sewer service would make development of the area north of the airport feasible.

3.2.3 Regional Transportation

Highways

The regional highway network in the metropolitan area is shown on the Airport Vicinity Map (Exhibit 3-1).

The airport vicinity is served by a network of Interstate, U.S., and State highways, county roads, and local streets. The airport property is partially bordered to the west by State Route 65, a four-lane divided highway, but no direct access to the airport property is available. Access from State Route 65 is via Radisson Road. The airport is bordered on the south by 85th Avenue Northeast, also known as County Road J.

An existing segment of relocated U.S. Highway 10, southeast of the airport, connects 85th Avenue Northeast to Interstate Highway I-35W. The segment of U.S. 10 is a controlled-access dual highway, and connects with 85th Avenue Northeast approximately 800 feet east of the existing main entrance to the airport facilities.

Highway I-35W is accessible from 85th Avenue Northeast approximately 1.25 miles east of the airport entrance road, and from 95th Avenue Northeast approximately one mile further to the north. The undeveloped eastern portion of the airport property borders the interchange at 95th Avenue Northeast.

Existing U.S. Highway 10 traverses the city of Mounds View approximately one mile south of the airport. A cloverleaf interchange connects U.S. 10 with State Route 65 approximately one mile southwest of the airport entrance.

Xylite Street is the main local access road running northward from 85th Avenue Northeast between State Route 65 and I-35W. Xylite Street tra-

verses a portion of the airport property between 93rd Avenue Northeast and 101st Avenue Northeast. The main road then follows 101st Avenue Northeast westward for approximately 2,000 feet, where it turns northward and becomes Radisson Road. It continues on airport property for about one-half mile to the intersection with 105th Avenue Northeast. Radisson Road continues to the north, adjoining the airport boundary for another approximately 1,500 feet. The only existing access from this road onto an undeveloped portion of the airport property is an unimproved road entering at the point where 101st Avenue Northeast becomes Radisson Road.

A portion of the northern airport property boundary is bordered by 105th Avenue Northeast, which connects Radisson Road with State Route 65, to the west.

In summary, the existing airport is directly accessible to I-35W via either 85th Avenue Northeast or the existing segment of relocated U.S. 10, and is accessible to State Route 65 via Radisson Road, or via 85th Avenue Northeast.

Airports

Airports in the MAC system are identified in Chapter 1.

3.2.4 Adjacent Communities

The eleven communities located near Anoka County-Blaine Airport are located in the Minneapolis-Saint Paul area commonly known as the "Northern Suburbs."

The Five Communities Closest to the Airport

The five communities located in the vicinity of the airport are the cities of Blaine, Circle Pines, Lexington, Mounds View, and Spring Lake Park. A brief description of each follows.

Blaine. Blaine is the largest and most populous of the communities in the vicinity of the airport. Approximately 31,000 people reside in

Blaine's 33 square miles. The Anoka County-Blaine Airport is located in Blaine, and occupies approximately 10 percent of the land area of the city.

Blaine is separated into three municipal districts. District 1, sometimes called "Old Blaine," has close ties to the Ramsey County communities of Mounds View and Spring Lake Park. District 2 includes parts of "Old Blaine," new housing developments, and a combination of farm-residential zoning. District 3 is located near Circle Pines and Lexington.

Because of the high water table and the large amount of peaty soils throughout the vicinity, approximately 60 percent of Blaine's land is considered undevelopable. Of the remaining 40 percent, 25 percent is reserved for residential, and 15 percent for commercial-industrial. At present, approximately 45 percent of Blaine is already developed for residential use. One major electronics firm employing approximately 500 local people, several trucking firms, and a broad variety of service businesses are located in Blaine. More than half the local residents leave the community to work.

Circle Pines. Circle Pines is 2-1/2 square miles in size with a population of approximately 4,100. It is located one mile from the east end of the Anoka County-Blaine Airport property, and approximately two miles from the eastern end of Runway 8-26. Founded in 1946 as a cooperative development, the community retains vestiges of its idyllic beginnings, manifested in a community-owned credit union and gas company.

Circle Pines is almost totally developed in single-family homes. One major industry, and several community-owned businesses, employ some people locally. However, most commute to the Twin Cities areas.

Lexington. Lexington, less than one square mile in size, has a population of approximately 2,400. It is approximately one-half mile east of the airport property and 1-1/2 miles east of existing Runway 8-26.

Lexington is approximately 90 percent developed, 50 percent homes, 50 percent local business. Approximately 70 percent of the people who live in Lexington work elsewhere.

Mounds View. Mounds View, situated directly south of the airport, has a population of approximately 13,300. The community is four square miles in size and is 95 percent developed, with approximately 2,500 single-family dwellings, 600 mobile homes, and 1,200 apartment units. The majority of residents commute to work in other areas. Highway 10 intersects the community of Mounds View.

Spring Lake Park. Spring Lake Park is also intersected by Highway 10. The community is located directly southwest of the Anoka County-Blaine Airport. It is 2-1/2 square miles in size and the present population is approximately 7,400. Essentially fully developed, Spring Lake Park is approximately 25 to 30 percent developed in business and small industry. The remainder of Spring Lake Park is single-family, duplex, and multiple-family dwellings.

Six Other Communities in the Airport Vicinity

Six additional communities located near Anoka County-Blaine Airport are included in the study. The six are Arden Hills, Coon Rapids, Fridley, Lino Lakes, New Brighton, and Shoreview.

Arden Hills. Arden Hills is approximately 18 square miles with a population of 7,450. The community is located six miles southeast of the airport. One-third of the city is a Federal arsenal. The remaining land is almost 100 percent developed with approximately 1,800 single-family owner-occupied dwellings, two college campuses, a large retirement facility, and corporate headquarters for several national companies.

Coon Rapids. Coon Rapids, located two miles west of the airport in Anoka County, is 25 square miles in size with a present population of 37,500. Coon Rapids is presently three-quarters developed, over 50 percent in single-family dwellings. The economic base is in commercial property and

two major industrial parks. More than half the residents leave the area to work.

Fridley. The community of Fridley has a population of over 30,000 and is 11 square miles in size. It is situated approximately two miles south/southwest of the airport. Twenty-seven percent (high by comparison with the other Twin Cities communities) of Fridley is zoned industrial-commercial; presently 60 percent is developed. Two major firms are located in Fridley. Residential areas are 97 percent developed, 85 percent single-family owner-occupied homes, 15 percent multiple-family dwellings, and one mobile home park.

Lino Lakes. Lino Lakes, four miles east of the airport, is 36 square miles in size, with a population of approximately 4,800. About 50 percent of the land is developable. (A county park and a water district take up non-developable acreage.) Lino Lakes is 15 to 20 percent developed, primarily consisting of single-family dwellings. There is no sewer to support industrial development at present, so little industry exists. Most residents work outside the area.

New Brighton. New Brighton, two miles due south of the airport, has a population of approximately 24,000 people. It is 7-1/2 square miles in size, and is about 85 percent developed, mostly consisting of single-family owner-occupied residences. Multiple dwellings are about 25 percent owner-occupied. Several firms are headquartered in New Brighton, which is approximately 85 percent industrially developed at present.

Shoreview. The community of Shoreview, approximately four miles southeast of the Anoka County-Blaine Airport, is 13-1/2 square miles in size. The population is 16,650. Mainly residential, approximately 95 percent of the available land developed in single-family owner-occupied dwellings. Most residents leave the community to work. Two television towers, each approximately 1,400 feet high, are located in Shoreview. Known commonly as the "Shoreview Towers," these two television towers

represent a constraint to reorientation of the airport's primary runway, as discussed in Chapter 6.

3.3 AIRPORT FACILITIES

The following section describes the existing facilities layout at Anoka County-Blaine Airport. Effective utilization of present capital investments is one of several considerations in development of the airport master plan.

3.3.1 Site Description

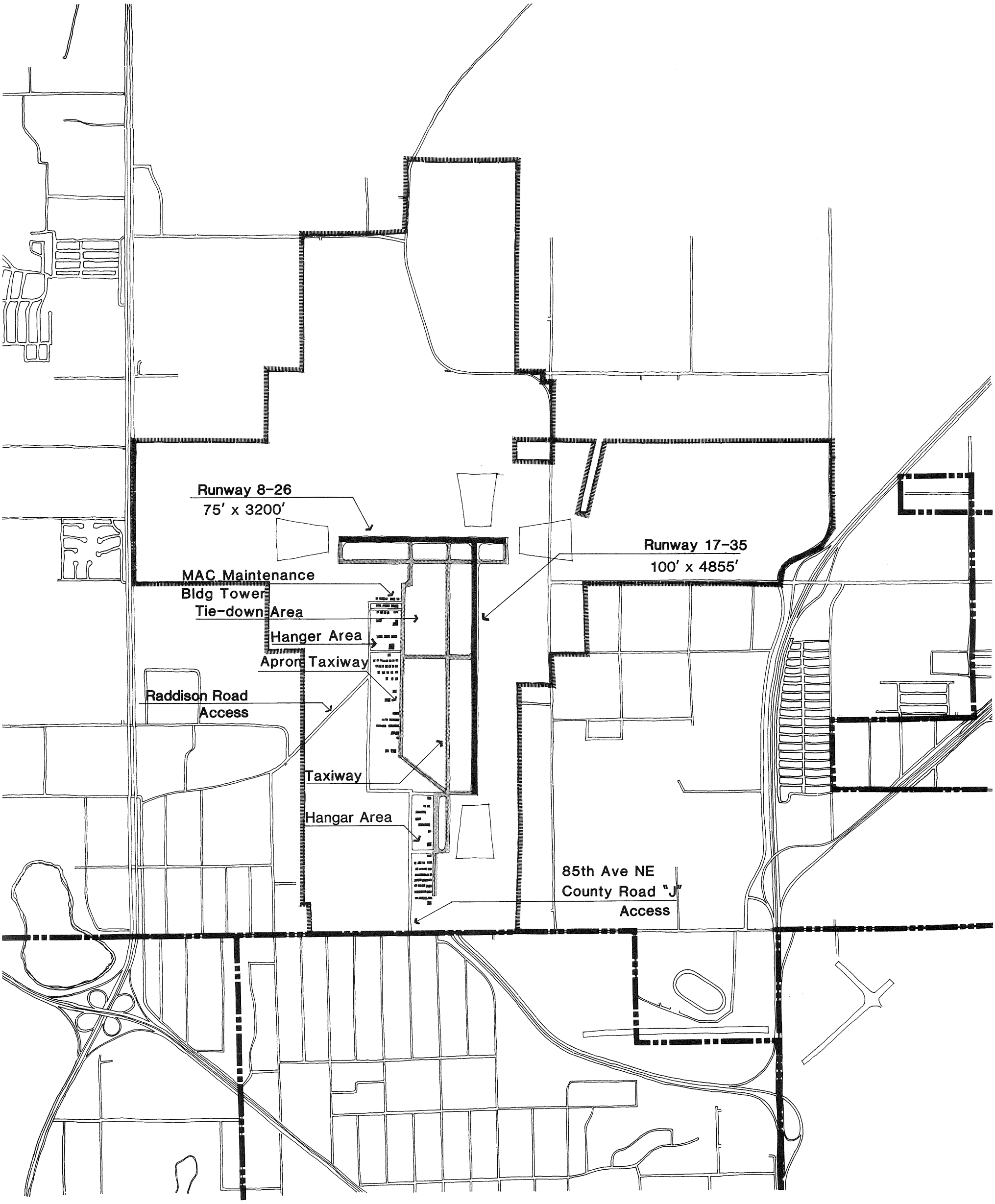
The airport site occupies approximately 1,900 acres. The site is located in the gently undulating Anoka Sand Plain, and includes substantial areas of wetlands, floodplains, and woodlands. Exhibit 3-2 shows the existing airport layout and context of the surrounding area.

All existing facilities are located in the southern half of the airport property. The north, west, and east portions of the site are totally undeveloped except for limited seasonal agricultural use. The existing airport facilities are accessible from public roads to the south and the west, while the undeveloped airport property is not publicly accessible.

3.3.2 Runways and Taxiways

There are two existing runways at the airport: a north-south primary runway, designated Runway 17-35, and an east-west crosswind runway, designated Runway 8-26. Runway 17-35 is 100 feet wide and 4,855 feet long. Runway 8-26 is 75 feet wide and 3,200 feet long. Both runways are bituminous paved.

Each of the runways has a full-length parallel taxiway. A separate apron taxiway runs along the east side of each of the building areas., and has been widened in places to serve as an apron.



MASTER PLAN
Anoka County-Blaine Airport
Anoka County — Minnesota
TRA AIRPORT CONSULTANTS — SEATTLE, WASHINGTON

feet
0 400 800 1600 2400
miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

EXISTING AIRPORT LAYOUT

Exhibit 3-2

3.3.3 Navigational Aids, Landing Aids, and Lighting

The airport currently has a control tower, but it is operated on weekends only, by the Air National Guard. The airport is equipped with a lighted wind cone, wind-tee and beacon. Both Runway 8-26 and Runway 17-35 are equipped with medium-intensity runway lights (MIRL). A UNICOM is also operational. A VOR facility, located west of the airport, provides instrument approaches to both Runway 8 (VOR) and Runway 26 (VOR/DME).

3.3.4 Hangar and Tie-Down Areas

There are two principal hangar areas at the airport. Both lie west of Runway 17-35, between the apron taxiway and the access road. The hangar lots are arranged in rows, with taxiway aisles running between them. Several of the taxiways connect the apron taxiway with the airport access road and are used both by aircraft and automobiles for hangar access.

As of January 1980 the airport accommodated nine commercial operators and 188 privately owned aircraft hangars. The locations of commercial operators and hangars are shown on Exhibit 3-3.

The MAC maintains an airport maintenance building and truck refueling facility on the northernmost end of the hangar area, adjacent to the control tower.

As discussed in Chapter 1, a building moratorium was in effect at the airport between July 1979 and July 1981. Demand for additional hangar space has been exhibited since the expiration of the moratorium.

For a further description of airport tenants see section 3.3.7.

A survey conducted during the fall of 1979 determined that 63 aircraft occupy tie-downs. Ten of these aircraft are located in the northern portion of the hangar area. The others are located on the unpaved islands between the apron and the north-south parallel taxiway.

3.3.5 Automobile Access and Parking

As described in Chapter 7, the airport is accessible from both the south and west. The main airport entrance is from the south via 85th Avenue Northeast. Secondary access to the northern portion of the airport is available from the west, via Radisson Road and State Route 65. A two-lane road provides internal airport access.

Automobile parking on the airport is provided and largely controlled by the individual commercial operators and hangar owners. Each provides designated parking areas near its facilities.

3.3.6 Utilities and Services

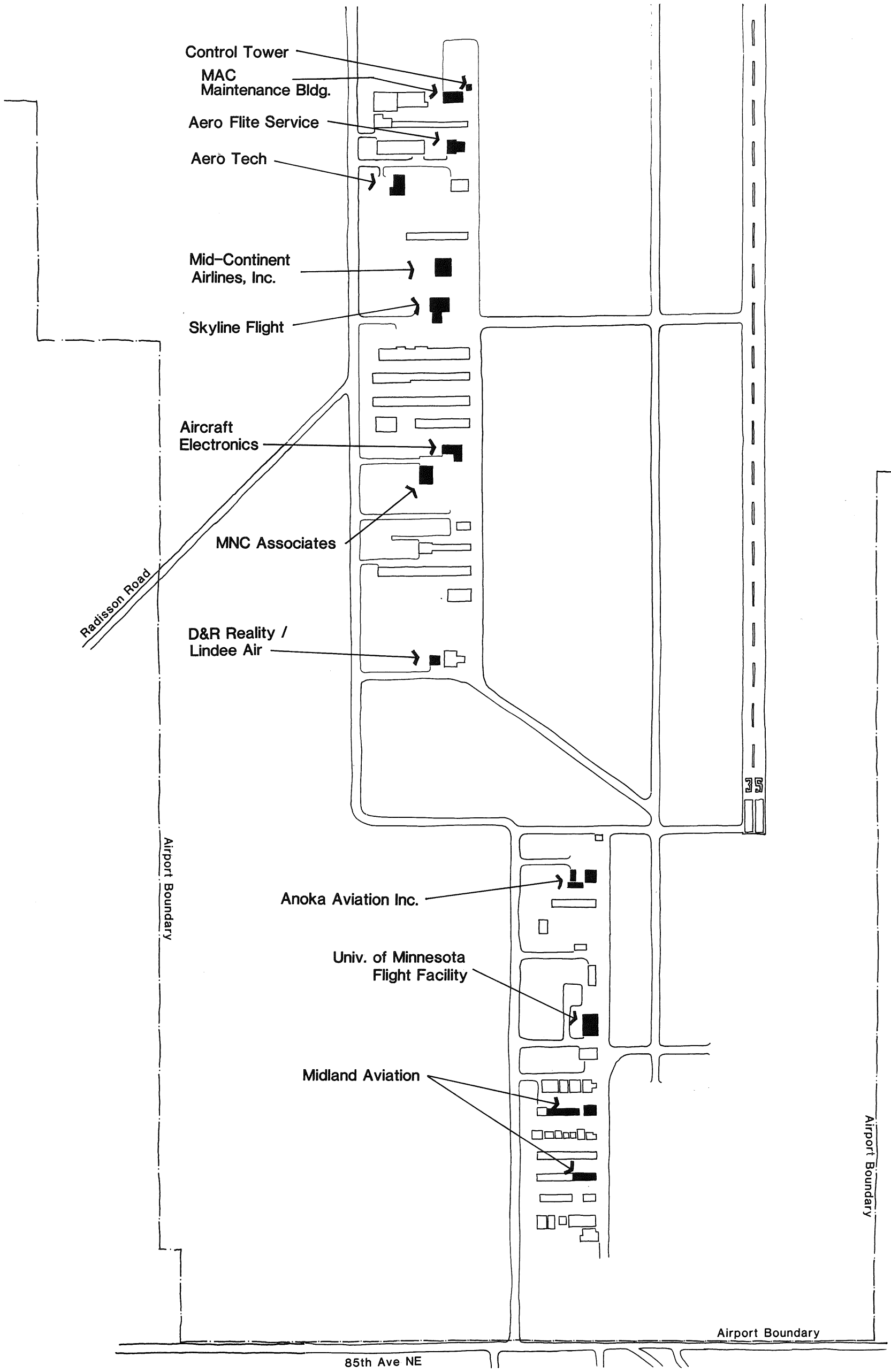
Utilities serving the airport include a natural gas line, electricity, and telephone service. The airport is not supplied with public water or sewer service. Individual airport operators maintain wells and septic tanks on the airport property.

Natural gas service is provided by North Central Gas Company. The airport is served by a 3-inch pipeline with 50 pounds pressure per square inch. The current Airport Layout Plan shows an 8-inch gas line entering the site from State Highway 65, and crossing to the east side of the airport (see Exhibit 3-5). According to North Central Gas the existing service is adequate to accommodate additional development.

Electrical service of 7,200 volts is provided to the airport by Anoka Electric. The nearest substation is on Highway 65 northwest of the airport. According to Anoka Electric, service is adequate to provide for future airport development.

Telephone service is provided to individual buildings at the airport by N.W. Bell Telephone.

The airport also has a surface drainage system to collect and channel surface water runoff into the natural drainage system. Surface drainage is handled through a series of culverts and drainage ditches.



MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet
0 100 200 500 800

N

AIRPORT HANGAR AREA

Exhibit 3-3

Other public services, including fire fighting, are provided to the airport by the local municipality. At Anoka County-Blaine Airport, MAC presently has a contract with the Blaine-Spring Lake Park-Mounds View Fire Department to provide service to the airport. MAC pays directly for this service. The arrangement has proven satisfactory and is expected to continue.

The MAC maintains a maintenance shop and crew at the airport to perform routine maintenance and snow removal. Snow removal equipment includes two truck-mounted plows, a tractor with pusher blade, and a rotary snow plow.

3.3.7 Airport Tenants

As of January 1980 there were nine commercial tenants and 63 private aircraft hangar tenants at the airport. Exhibit 3-4 lists the commercial tenants and Exhibit 3-3 shows their locations.

Exhibit 3-4

Commercial Tenants
Anoka County-Blaine Airport

Anoka Aviation Inc.
Aero Flite Service
Aero Tech
Aircraft Electronics
D&R Realty/Lindee Air
MNC Associates
Mid-Continent Airlines Inc.
Midland Aviation Co.
Skyline Flite

The University of Minnesota also maintains a flight training facility at the airport.

The MAC leases hangar space to commercial and individual tenants, and facilities are constructed and maintained by the tenants.[6] The MAC

issues six categories of leases and agreements: aircraft storage leases, commercial leases, commercial licenses, tie-down leases, farm leases, and special use leases and agreements.

3.3.8 Current Airport Layout Plan

The current airport layout plan (ALP) is shown in Exhibit 3-5. This ALP will be replaced by a new ALP that will be prepared based on the selected alternative.

The current ALP calls for ultimate development of four runways, associated taxiways, and major expansion of the north hangar area. According to the current ALP, existing Runway 17-35 would be ultimately widened and lengthened to the north from its current dimensions of 100 feet by 4,855 feet, to 150 feet by 9,000 feet. It would remain the airport's primary runway. A parallel north-south runway would be constructed 850 feet west of Runway 17-35, with its southern threshold at the existing cross taxiway, 2,600 feet north of the Runway 17-35 threshold. The new north-south runway would be 100 feet wide and 6,400 feet long. Its northern threshold would be the same as that for the lengthened existing north-south runway.

The ALP calls for lengthening the existing east-west Runway 8-26, 1,600 feet to the east and 1,200 feet to the west. Its ultimate dimensions would be 100 feet by 6,000 feet. A new parallel eastwest runway would be constructed 800 feet north of Runway 8-26, and its dimensions would be 150 feet by 6,000 feet. It would have the same threshold positions as the lengthened Runway 8-26.

Each runway would have an associated parallel taxiway, 50 feet wide.

The primary airport building area would be expanded in its current location. When demand necessitated, a new building area would be developed on the northwest portion of the airport property.

Both existing access roads would be maintained and a new access road developed on the western portion of the property to connect directly to

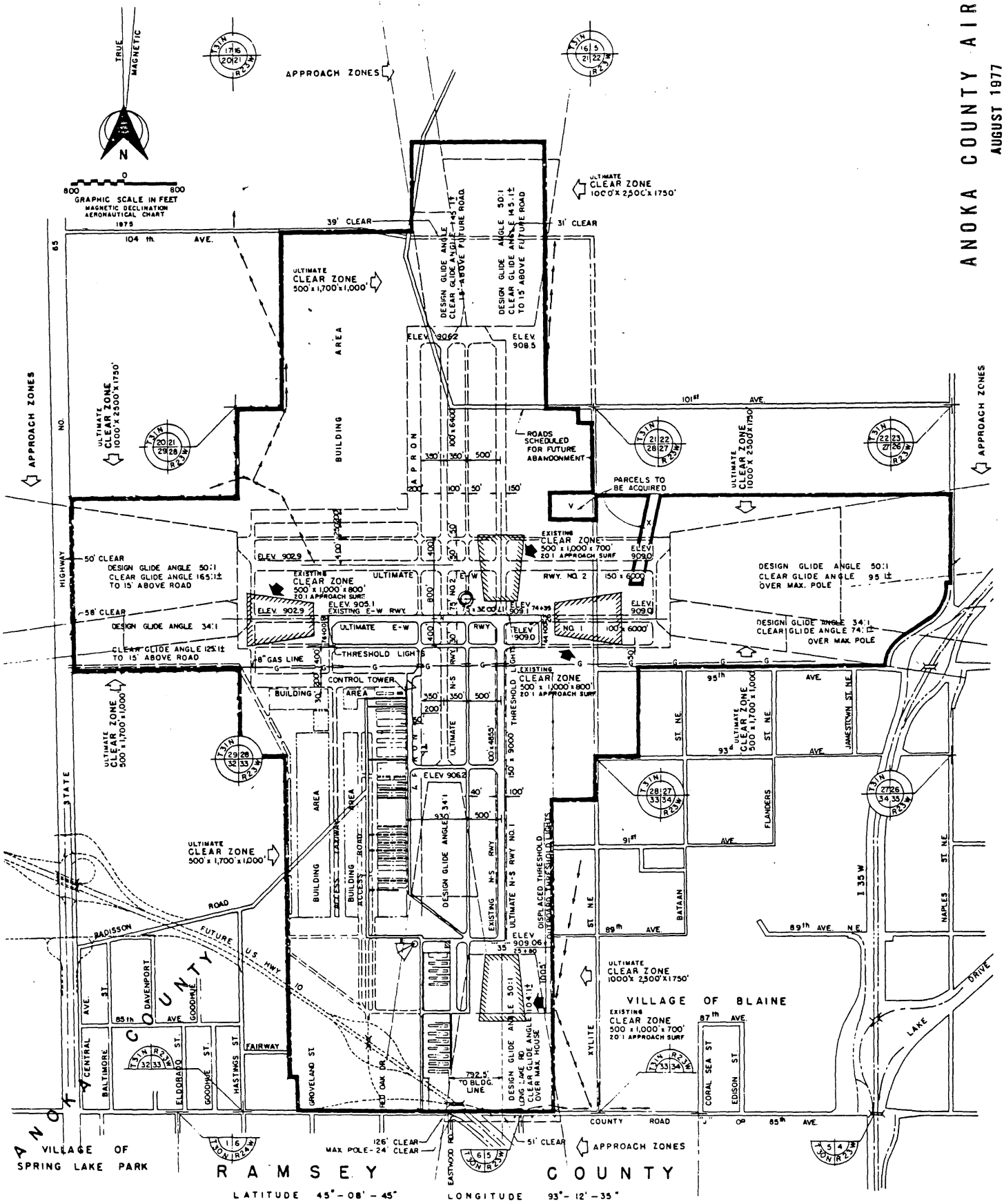


Exhibit 3-5

Current Airport Layout Plan
Anoka County-Blaine Airport

State Highway 65.

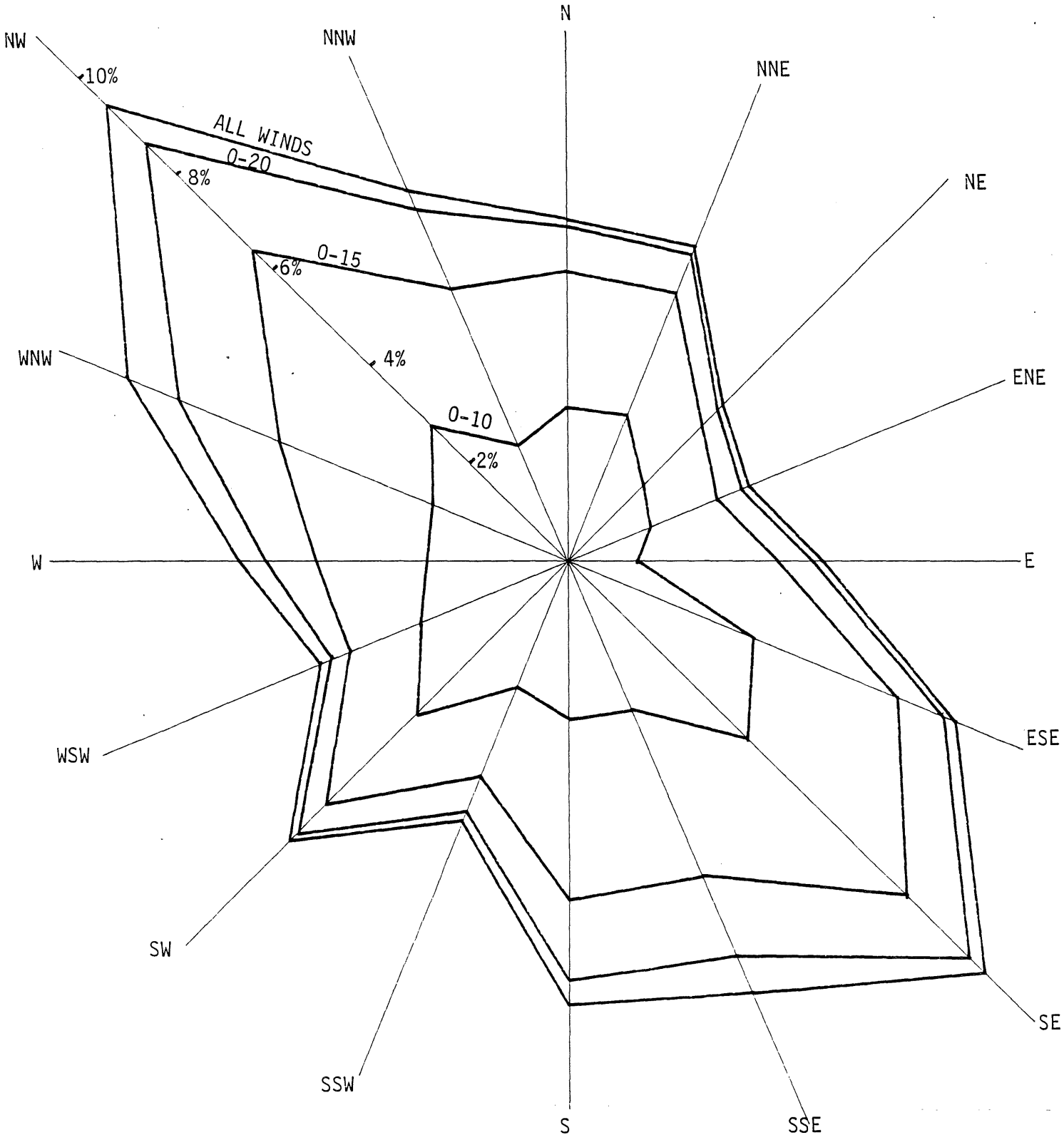
The only additional property planned to be acquired would be two small parcels on the northeast portion of the airport property presently surrounded by MAC property. The ALP also calls for ultimate closure of the portion of Xylite Street that crosses the airport property, and closure and relocation of those portions of 101st Avenue Northeast and Radisson Road that cross the northern airport property.

3.4 OPERATIONS AND WEATHER

Wind distribution during fair weather conditions, when visual flight rules (VFR) prevail, is shown in Exhibit 3-6. Wind distribution during times when low visibility, low ceiling, and instrument flight rules (IFR) prevail, is shown in Exhibit 3-7. During visual conditions, northwest-southeast winds predominate. Winds are more variable during IFR conditions.

Wind conditions allow aircraft capable of landing in crosswinds of 10 knots or less to use Runway 17-35 a total of 72.03 percent of the time. A 10-knot crosswind limit is an FAA advisory design criterion. However, crosswinds in excess of 10 knots do not represent an operational constraint at the airport. Runway 8-26 may be used by aircraft 76.22 percent of the time. In combination, the two existing runways provide a total 10-knot wind coverage of 92.38 percent. Coverage in crosswinds up to 13 knots is 89.43 percent on Runway 17-35.

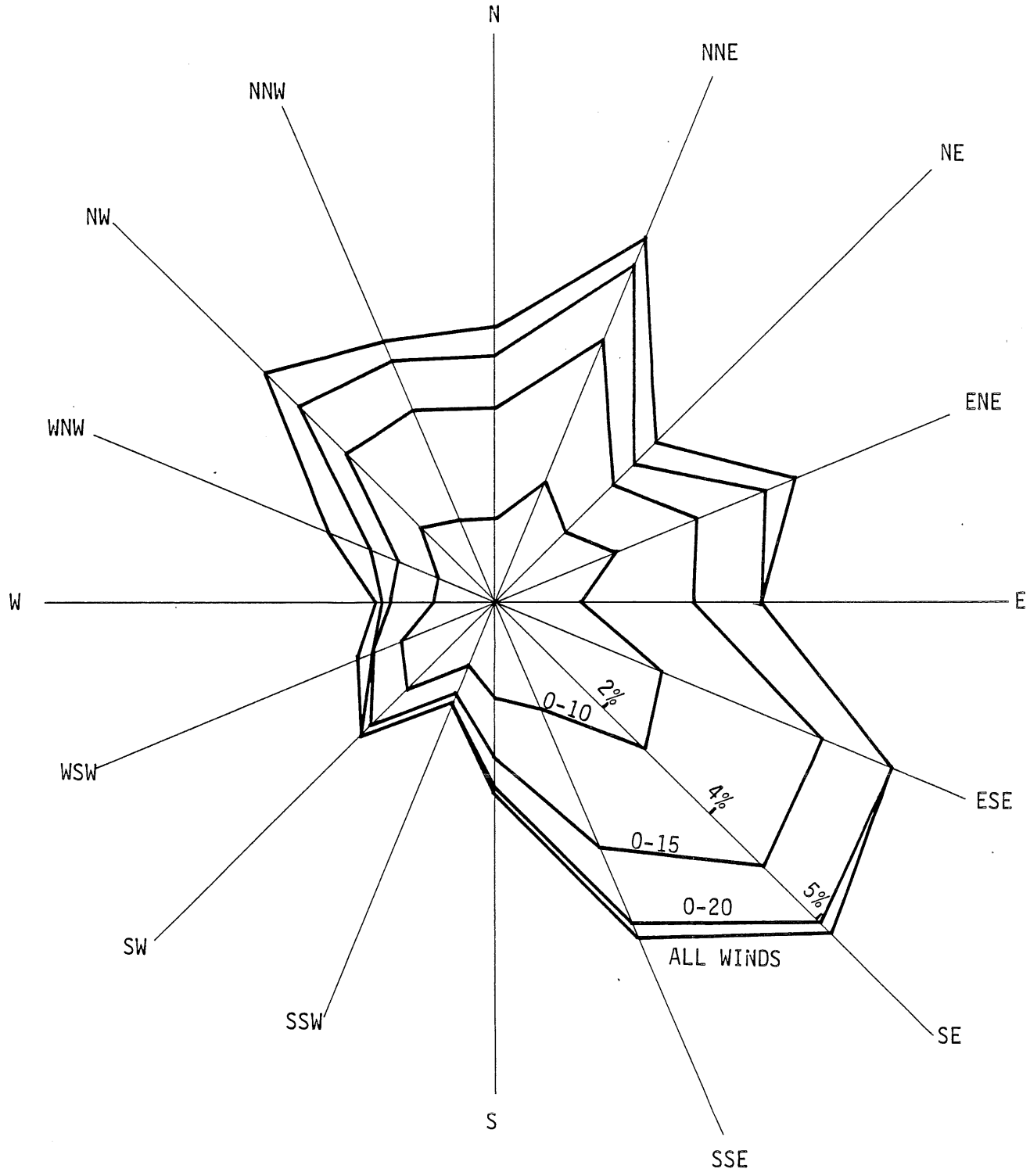
During 6.5 percent of the year, or approximately 24 days, weather conditions exist which limit visibility to less than 3 miles and lower the ceiling height to under 1,000 feet. These are FAA standard minimums in controlled airspace of the type surrounding Anoka County-Blaine Airport. Ten-knot crosswind coverage on Runway 17-35 under these conditions is 4.88 percent. On Runway 8-26 the coverage is 4.64 percent. Total coverage on both runways is 5.98 percent. In crosswinds up to 13 knots in strength, the coverage on Runway 17-35 is 5.71 percent.



Source: TRA Airport Consulting

Exhibit 3-6

Wind Distribution: All-Weather
Anoka County-Blaine Airport



Source: TRA Airport Consulting

Exhibit 3-7

Wind Distribution: Low Visibility and Ceiling
Anoka County-Blaine Airport

NOTES TO CHAPTER 3

1. U.S. Department of Transportation, Federal Aviation Administration, "Airport Master Plans," AC 150/5070-6, 1971.

2. Metropolitan Council of the Twin Cities Area, "Land Use Trends in the Twin Cities Metropolitan Area 1960-1975," Resource and Development Report No. 4, October 1978.

3. Metropolitan Council of the Twin Cities Area, "Metropolitan Development Guide; Development Framework: Policy, Plan, Program," 1975.

4. Metropolitan Land Planning Act of 1976, Minnesota Statutes 1976, Section 473.

5. City of Blaine, "Vacant Land Study," 1979.

6. Metropolitan Airports Commission, "Secondary Airports Lease Policies and Procedures of the Minneapolis-St. Paul Metropolitan Airports Commission," 1977.

CHAPTER 4
FORECAST OF AVIATION DEMAND

4.1 INTRODUCTION

The forecast encompassed in this chapter is based primarily on information provided in the Aviation Chapter of the Metropolitan Development Guide[1] and supporting data. The Aviation Chapter is intended to serve as an aviation system plan for the Minneapolis-Saint Paul metropolitan region.

This chapter of the Master Plan contains a description of: based aircraft, operations by aircraft type, and the local/itinerant operations split. Accompanying each of these items is an explanation of the process by which the analyses were performed. The findings were used in the later portions of the Master Plan -- in the alternative analysis, the environmental evaluation, and as a basis for specifying the type of facilities required.

4.2 AVIATION SYSTEM PLAN

Two approaches were used to develop the forecast contained in the Aviation Chapter: (1) a microeconomic methodology, sometimes referred to as a bottom-up approach; and (2) a macroeconomic method, known also as a top-down approach. The bottom-up method makes aviation demand projections based on local trends in key socioeconomic variables. In the top-down method, national aviation trends are scaled to local circumstances. In the master plan forecast contained herein, a composite of the two was employed.

The bottom-up approach calculated future aircraft ownership by minor civil division (MCD), meaning township or city, giving both the number and kind of aircraft. Types D and E aircraft were projected considering the growth in the average income for the entire region. They were then distributed to MCDs based on their relative population growth.

Once the aircraft were assigned to MCDs it was possible to distribute them to the various airports. The assignment of aircraft was modeled after the present tendency of aircraft owners in MCDs to base their aircraft at particular airports. For example, if approximately half the owners in an MCD now based their aircraft at one airport, and half at another, the projected aircraft were assigned accordingly.

The products of the bottom-up forecast are estimates of the total regional fleet size, regional fleet mix, and fleet size and mix for each airport in the system.

The top-down forecasts began with the projection of the general aviation fleet at the national level. At present, one percent of the nation's general aviation fleet is based in the Minneapolis-Saint Paul metropolitan region.[2] The top-down method assumes that the region will continue to attract one percent of the national fleet. It also assumes that the composition of the regional fleet will match that of the national fleet.

When the top-down and bottom-up forecasts were compared, the region-wide aircraft totals proved to be similar. The regional fleet mixes, however, were quite different. The top-down forecast projects a fleet of proportionately more large general aviation aircraft in comparison with the bottom-up forecast. Since development of Anoka County-Blaine Airport is limited by law to Minor status, it will be assumed that its fleet will consist entirely of Types D and E aircraft. Type D aircraft are twin-engine piston-driven and turboprop aircraft weighing under 12,500 pounds. Type E aircraft are single-engine piston-driven aircraft weighing under 12,500 pounds.

The fleet has been proportioned assuming that the percentage of the U.S. fleet made up of Type D aircraft will be the same as that for Anoka County-Blaine Airport. The remainder of the Anoka County-Blaine Airport fleet will consist of Type E aircraft.

Exhibit 4-1 shows the forecast of based aircraft that results. The exhibit shows both a high and low forecast. This low forecast was produced

Exhibit 4-1

Based Aircraft
Anoka County-Blaine Airport

	Actual[1] 1980	1985[2]	1990	2000
High Forecast				
Type D	30	52	73	116
Type E	323	347	379	514
Total	353	399	452	630
Low Forecast				
Type D	30	44	62	99
Type E	323	278	303	411
Total	353	322	365	510

1. The based aircraft for 1980 have been taken from a MAC survey conducted in January 1980. Additionally, one Type C aircraft (business jet) was based at the airport as of the survey date. Due to the moratorium in effect at the airport, the number of based aircraft has not changed since 1978.

2. The forecast for 1985 has been interpolated between the recorded fleet based at Anoka in January of 1980 and the Aviation Chapter forecast for 1990. The low forecast for 1985 indicates the resulting decrease in based Type E aircraft assumed in the Aviation Chapter to be associated with a downturn in the economy.

Source: TRA Airport Consulting.

using the procedures suggested in the Aviation Chapter, which makes the following assumptions:

- the economic climate will change, producing a reduction in business profits;
- this reduction will precipitate a 10 percent decrease in business fleet based aircraft;
- the same economic conditions will produce a 20 percent reduction in the non-business fleet;
- all Type E aircraft are non-business;
- 50 percent of the Type D aircraft are non-business.

4.3 OPERATIONS BY AIRCRAFT TYPE

The forecast of operations is based on the number of aircraft based at the airport. In the Aviation Chapter a multiplier of 700 operations per based aircraft was used. It is understood that there will be considerable variability in actual operations per based aircraft. Using a multiplier of 700 will result in a conservatively high forecast for planning purposes.

In order to establish a forecast range within which actual operations are likely to fall, a low forecast of operations was prepared using methods described in the Aviation Chapter. For the low forecast a multiplier of 550 operations per based aircraft was assumed.

In both forecasts, operations for each type of based aircraft were estimated. Exhibit 4-2 shows the resulting forecast for each planning year.

4.4 LOCAL/ITINERANT SPLIT

The distinction between local and itinerant operations is made on the basis of the aircraft origins or destinations. Local operations are performed by aircraft that take off and land at the airport and spend their flying time in the airport vicinity. Itinerant aircraft come from other origins or leave for other destinations.

Exhibit 4-3 shows the forecast operations split assumed for this study, based on the Aviation Chapter forecast of 38.6 percent average annual itinerant operations.

4.5 PEAK HOUR OPERATIONS

Peak hour operations may be defined as the representative highest number of aircraft movements an airport will have to handle in an hour without delay. There is very little information available on existing peak hour activity at Anoka County-Blaine Airport. What data exists consists of hourly counts recorded over two summer weekends. The two weekends were June 30-July 1, 1979 and July 7-8, 1979. This data is assumed to represent the high-level activity at the airport, as it was taken on weekends in the middle of the summer when flying conditions are best and previous experience indicates highest use occurs.

Based on the estimated aircraft operations for 1979, average daily operations for Anoka were around 503. The highest number of daily operations experienced during the sample periods was 520. The latter is 103 percent of the estimated average daily operations. As a conservative planning assumption, a peak day will be assumed to be 110 percent of the average daily operations. Exhibit 4-4 indicates the resulting peak day operations. The ratio of the peak hour operations to the peak day operations in the sample data is 1 to 8.9. This ratio has been maintained for purposes of estimating future peak hour traffic levels, and is shown in Exhibit 4-5.

4.6 INSTRUMENT OPERATIONS

Exhibit 4-6 presents the forecast of instrument approaches at Anoka County-Blaine Airport. The method used to prepare the forecast involved two steps. First a ratio of instrument operations relative to total operations was developed from historical information. Next this ratio was applied to the forecast of total operations which yielded the desired information.

Exhibit 4-2

Operations by Aircraft Type
Anoka County-Blaine Airport

		1980	1985	1990	2000
High Forecast					
Type D		15,520	36,400	51,100	81,200
Type E		178,480	242,900	265,300	359,800
	Total	194,000	279,300	316,400	441,000
Low Forecast					
Type D		15,520	24,200	34,100	54,450
Type E		178,480	152,900	166,650	226,050
	Total	194,000	177,100	200,750	280,500

Source: TRA Airport Consulting.

Exhibit 4-3

Local/Itinerant Operations Split
Anoka County-Blaine Airport

		1980	1985	1990	2000
High Forecast					
Local		127,000	171,490	194,370	270,774
Itinerant		67,000	107,810	122,130	170,226
	Total	194,000	279,300	316,400	441,000
Low Forecast					
Local		127,000	108,739	123,260	172,227
Itinerant		67,000	68,361	77,490	108,273
	Total	194,000	177,100	200,750	280,500

Source: TRA Airport Consulting.

Note: Based aircraft may perform either local or itinerant operations. Transient aircraft always perform itinerant operations.

Forecasts are based on interpolations from operations data presented in Exhibit 4-2.

Exhibit 4-4

Peak Day Operations
Anoka County-Blaine Airport

	1980	1985	1990	2000
High Forecast	617	841	953	1,329
Low Forecast	617	533	605	845

Source: TRA Airport Consulting.

Exhibit 4-5

Peak Hour Operations
Anoka County-Blaine Airport

	1980	1985	1990	2000
High Forecast	69	94	107	149
Low Forecast	69	60	68	95

Source: TRA Airport Consulting.

Exhibit 4-6

Instrument Approaches
Anoka County-Blaine Airport

	1980	1985	1990	2000
Total Operations (High)	194,000	279,300	316,400	441,000
Instrument Approaches	140	384	434	606
Total Operations (Low)	194,000	177,100	200,750	280,500
Instrument Approaches	140	187	212	296

Source: Historical data - Federal Aviation Administration.
Forecast - TRA Airport Consulting.

Several problems complicated preparation of the instrument approach forecast. Among the most critical were the following. Although the airport is a candidate for a control tower, a full-time FAA-operated air traffic control tower (ATCT) does not exist. If such a tower existed, records kept by tower personnel would be an accurate source of information on instrument approaches.

Instrument operations conducted at Anoka County (arrivals and departures) are handled and recorded by Minneapolis Approach Control. This facility is located at Minneapolis-Saint Paul International Airport (MSP). From this location instrument operations for a number of airports in the region are controlled. Each operation is recorded one of two ways. Either it is a primary operation, that is, it occurs at MSP, or it is a secondary operation. Secondary operations are aircraft handled by Minneapolis Approach, but involve aircraft landing at another airport.

All instrument operation at Anoka County-Blaine Airport are recorded as secondary operations by Minneapolis Approach.

Forecasting the number of instrument approaches at Anoka County-Blaine Airport as a percentage of instrument operations, perhaps the most simple and straightforward approach, would probably not produce accurate results for reasons explained in the following paragraphs. Activities counted as instrument operations include aircraft receiving Stage III radar service (sequencing and separation from other traffic) while operating in a Terminal Radar Service Area (TRSA). These aircraft are not on an Instrument Flight Rules (IFR) flight plan. Aircraft often operate on IFR flight plans regardless of actual weather conditions in order to take advantage of the added safety and efficiency of operating within the controlled IFR en route system. All aircraft have the following options (if appropriate conditions exist) when arriving in the terminal area:

(A) Instrument Approach: The aircraft will be cleared for an instrument approach.

(B) Contact Approach: An aircraft on an IFR flight plan may deviate from the instrument approach procedure and proceed to the airport by visual reference to the surface.

(C) Visual Approach: An aircraft on an IFR flight plan that is under the control of an air traffic control facility (in this case Minneapolis Approach Control), but operating in visual conditions, may approach and land at the airport without executing a published instrument approach. In addition, the pilot of an aircraft on an IFR flight plan may cancel that flight plan if visual conditions are encountered and proceed to any local airport.

Although an aircraft which executes any of the above approaches is counted as an instrument operation, only the first of the three categories can properly be counted as an instrument approach.

Past history provides little help with forecasting future levels of instrument operations for at least two reasons. One is the limited capability to accommodate instrument operations at Anoka County-Blaine Airport. The other is the availability of superior facilities at other nearby airports.

The instrument approaches which exist at the airport are non-precision VOR approaches which are only usable as long as there is at least one mile of visibility. Therefore, any time reported visibility at the airport is less than one mile, the instrument approaches are unsuitable. Reported ceiling is not, however, a criterion for determining whether an approach is usable. Aircraft can still operate at the airport with a special VFR clearance at the airport if there is at least one mile visibility and the aircraft can remain clear of clouds.

NOTES TO CHAPTER 4

1. Metropolitan Council of the Twin Cities Area, Metropolitan Development Guide: Aviation-Airport Systems Plan/Development Guide, 1978.

2. Ibid.

CHAPTER 5
FACILITY REQUIREMENTS

5.1 INTRODUCTION

The purpose of this chapter is to identify the type of facilities Anoka County-Blaine Airport will require if it is to meet forecast general aviation demand. Within the limit of classification as a Minor airport, a planning goal was established to plan future airport development to maximize utilization of the site. The goal of maximum utilization was selected for two reasons: (1) it reflects the system plan policy to develop existing airport facilities to their maximum capability before investing in new facilities;[1] and (2) it reflects the charge to the MAC to maximize return in aviation services for the dollars invested in the airport. Additionally, the long-range potential impacts of airport development can only be gauged if the full extent of potential development is known.

The role of a Minor airport as defined in the Aviation Systems Plan is: "The primary geographic service focus of (Minor) airports would be state and metropolitan in scope. Personal, business, and instructional uses would be accommodated at these facilities."[2]

Minor airports are to be designed for predominant use by Types D and E aircraft, which are lightweight twin- and single-engine aircraft, respectively. These types of aircraft have a gross takeoff weight of 12,500 pounds or less.

While airport facility requirements have been calculated for maximum utilization, actual implementation would be phased to coincide with actual demand. Thus, if actual demand exceeds the forecast demand, airport development would likely be accelerated over the planned schedule. Similarly, if actual demand lags behind the forecast, airport development would occur at a slower pace.

The system plan definition of a Minor airport corresponds to the FAA's definition of a General Utility (GU) airport. Requirements for a GU airport are contained in an advisory circular published by the FAA, and are described in the following.[3]

5.2 AIRFIELD REQUIREMENTS

Basic airfield facilities are runways, taxiways, and navigational aids. Facility requirements for runways and taxiways are identified below as they would exist in full development under maximum utilization of the airport. Navigational aids are discussed in section 5.3.

5.2.1 Runway Capacity

Runway capacity is calculated as the number of aircraft operations a runway can accommodate in some defined period of time. The two most important aspects of runway capacity are: annual operations capacity, and peak hour runway capacity. Adequate capacity for both must be available if an airport is to operate safely and efficiently.

The forecast of aviation demand in Chapter 4 presents estimates of annual operations, and operations on the peak day and during the peak hour. The forecast level of annual operations will approach the capacity of the existing runway layout sometime between 1985 and 1990. The high forecast of annual operations in the year 2000 is estimated to be 441,000. Forecast peak hour VFR operations will not exceed existing capacity before the year 2000. The high forecast of peak hour operations in the year 2000 is estimated to be 149.

Three airport configurations have been developed which provide additional runway capacity. All three accomplish this through runway construction. Two of the alternatives involve construction of one additional runway. The third calls for two more runways to be built. In the case where the primary operating direction is north-south, so too is the orientation of the proposed new runway. For the alternative in which the primary operating direction is east-west, the added runway is oriented in the same

direction. The third alternative calls for construction of parallel runways in both major directions.

Although the existing airport could accommodate peak hour operations throughout the planning period, additional runway capacity will be needed to accommodate total annual operations. As discussed elsewhere, operational flexibility in runway use will be needed to minimize noise exposure in the surrounding communities.

Exhibit 5-1 shows estimated airfield capacity for the existing airport configuration and for the three alternatives.[4] The practical capacity estimate assumes an even distribution of traffic over the hours of the day. In reality estimates are on the conservative side. The hourly VFR capacities are less flexible. Should hourly traffic levels grow beyond those shown, delay to aircraft will increase.

Any of the three alternatives will supply adequate annual and peak hour capacity to accommodate forecast demand through the year 2000.

5.2.2 Runway Orientation

A runway should ideally be oriented with the prevailing wind and have at least 95 percent usability according to prevailing wind coverage. When a runway oriented with the prevailing wind is less than 95 percent usable, a crosswind runway becomes eligible.

The present orientation of runways on the site provides the required coverage. Inspection of the wind distribution diagrams in Chapter 3 indicates that the prevailing winds are northwest and southeast in direction. Twin television transmission towers located in Shoreview would compromise the operational capability of a runway oriented in a northwest-southeast direction. Therefore, north-south and east-west orientations are most feasible.

Exhibit 5-1

Runway Capacity
Anoka County-Blaine Airport

		Annual Operations	Hourly Operations (VFR)
Existing Configuration		230,000	98
Alternative A (Parallel N-S with Crosswind E-W)	a)	292,500	148
	b)	305,000	158
Alternative B (Parallel E-W with Crosswind N-S)	a)	292,500	148
	b)	280,000	138
Alternative C (Parallel both N-S and E-W)		355,000	197

Source: TRA Airport Consulting.

Two sets of capacity numbers are shown for Alternatives A and B. The first number (a) reflects runway capacity when utilization is 50 percent N-S/50 percent E-W. The second number (b) shows runway capacity when utilization is 60 percent N-S/40 percent E-W. The differences in (b) show the effect of shifting the orientation of the parallel runways.

5.2.3 Runway Configuration

As discussed in Chapter 6, Alternatives Evaluation, three alternative runway configurations were evaluated. Alternative A includes parallel runways oriented north-south, with a single crosswind runway oriented east-west. Alternative B includes parallel runways oriented east-west, with a single crosswind runway oriented north-south. Alternative C includes parallel runways in both the north-south and east-west orientations.

Each alternative would utilize all of the existing east-west Runway 8-26 and much of the existing north-south Runway 17-35. (Refer to Chapter 6 for a detailed description of each alternative configuration.)

Selection of a parallel runway configuration for all three alternatives is based partially on safety considerations. Parallel runways will allow potentially incompatible aircraft types and types of activity to be kept physically separate. The longer parallel runway would be used for itinerant operations and the larger, more powerful aircraft. The shorter parallel runway would be used primarily for training activity by lighter, less powerful aircraft, especially for touch-and-go training operations.

5.2.4 Runway Length

A primary runway must be long enough to accommodate all aircraft within the designated class under all weather conditions. Runway length requirements for each class of aircraft are primarily dependent on the elevation of the runway and the mean daily maximum temperature for the hottest month of the year.

The highest elevation of the two existing runways is 909.1 feet mean sea level (MSL). Considering a mean daily maximum temperature of 83 degrees Fahrenheit, runways are required to be a minimum of approximately 4,000 feet in length. The existing north-south runway is 4,855 feet in length, and the existing east-west runway is 3,200 feet in length.

The Anoka County-Blaine Airport first underwent major development in the 1950s. The airport was developed to serve in an Intermediate role as it was then considered. At that time the primary north-south runway was 5,900 feet in length. The crosswind east-west runway was 3,200 feet in length. In the mid-1960s, the north-south runway was shortened to 4,855 feet, the length it remains today, and the unused pavement was removed.

In 1976, the MAC conducted a runway pavement resurfacing overlay project to prevent runway pavement deterioration. Partially funded by the FAA, the funding grant agreement included a covenant that requires MAC to maintain runways as constructed as long as the facilities are needed or not to exceed a twenty-year period.

5.2.5 Runway Width

Existing Runway 17-35 is 100 feet wide. The crosswind, Runway 8-26, is 75 feet wide. According to FAA design guidelines, new visual and non-precision runways at GU airports must be a minimum of 75 feet in width. For precision instrument runways the standard width is 100 feet. Runway widths for runways serving small utility aircraft (Types D and E), may be considered down to 75 feet where an operational requirement for an ILS has been identified and supported, and where it is not economically feasible to increase runway width to 100 feet.[5]

5.2.6 Runway Safety Areas

Runway safety areas are designated on both sides and on either end of a runway. Runway safety areas at runway ends are 300 feet for general utility runways and 600 feet for precision instrument runways. Centered on the runway centerline, runway safety areas must be 150 feet wide for visual and non-precision runways, and 300 feet for precision runways.

5.2.7 Runway Grade

It is important to control the longitudinal grade of the runway to insure adequate visibility for aircraft using it. Two kinds of limitations are placed on grade. A vertical curve may not be less than 300 feet for each 1 percent grade change and may not exceed a total grade change of 2 percent. No vertical curve is required when grade change is less than 0.4 percent. The second limitation is that the separations between the points of vertical intersection of two adjacent vertical curves must be at least 250 feet times the sum of the grade changes of each of the vertical curves. These restrictions apply to all the proposed runways.

All runways should be crowned for drainage purposes. Specifically, the surface should slope down from the centerline between one and two percent.

5.2.8 Clearances

The FAA has promulgated airport design guidelines in a series of advisory circulars. These have the purpose of enhancing the safe and efficient operation of airports. A list of key requirements is shown in Exhibit 5-2. The term "building restriction line" refers to an imaginary line parallel to the runway, limiting the distance from the runway centerline that structures or other obstructions may be erected.

The term "Obstacle Free Zone" (OFZ) refers to airspace, under the control of airport authorities, which must be kept free of all objects except frangible air navigational aids. It must be clear of vehicles and parked, holding, and taxiing aircraft except when it is safe for an aircraft to taxi onto the runway. The runway OFZ is the volume of space longitudinally centered on the runway, extending 200 feet beyond each end. The width of the OFZ varies with the type of instrument approach to be conducted and the maximum certificated takeoff weight of expected user aircraft.

The second column in Exhibit 5-2 provides information applicable to a general utility category airport. Inherent in this criterion is an

Exhibit 5-2

Airfield Clearance Requirements
Anoka County-Blaine Airport

	Visual Runway Basic Utility[1] Stage II	Non-Precision[2] Instrument Runway	Precision Instrument Runway
Runway Centerline to:			
- Taxiway Centerline	150 feet	200 feet	350 feet[3]
- Building Restriction Line	200 feet	200 feet	300 feet[4]
- Parallel Runway Centerline	300 feet[5]	500 feet	500 feet
- Property Line	200 feet	250 feet	500 feet
Taxiway Centerline to:			
- Airplane Parking Area	50 feet	50 feet	50 feet
- Obstacle or Building Restriction Line	50 feet	50 feet	50 feet

Source: FAA Advisory Circular 150/5300-4B, "Utility Airports - Air Access to National Transportation."

1. This type of airport accommodates about 95 percent of the airplanes under 12,500 pounds.

2. Clearances for General Utility Non-Precision Instrument and Visual runways are the same.

3. The taxiway should be located such that no part of an aircraft on taxiway centerline will penetrate the obstacle-free zone. For Type D and E aircraft a 350-foot separation for a precision instrument runway is generally adequate.

4. Distance can vary beginning at a distance of 300 feet.

5. The minimum separation between centerlines of parallel runways is 300 feet for simultaneous VFR landings or takeoffs if the airplanes involved are single-engine and 500 feet if the airplanes are twin-engine.

assumption that the airport will have a non-precision instrument runway. A full instrument landing system (ILS) is not contemplated in this criterion. As a contribution to airport safety, the primary runway should be instrumented to become a precision instrument runway. Associated with a precision instrument runway is a more demanding set of clearances. These are shown in the third column in the exhibit, and should be applied to the primary precision instrument runway for each alternative.

5.2.9 Taxiways

The primary function of taxiways is to facilitate aircraft movements between the runways and aircraft storage areas. Taxiways are classified into three types: parallel, exit, and hangar access.

Full parallel taxiways are recommended for each runway. Taxiways parallel to a non-precision runway at general utility standards should be separated from the runway by at least 200 feet, centerline to centerline.

A minimum of three taxiway exits per taxiway are necessary, one at either end of the runway and one approximately in the runway center.

Hangar access taxiways should provide easy access to, and within the hangar area, parking apron, and tie-down area.

Detailed layout and design of taxiways will occur during preparation of the Airport Layout Plan, once an alternative has been selected.

5.3 NAVIGATION AIDS AND AIR TRAFFIC CONTROL FACILITIES

The FAA has issued an advisory circular with recommended design standards for airport navigational facilities.[6] It provides pertinent information on land requirements for the electronic and visual air navigational aids (NAVAIDS) and air traffic control (ATC) facilities located on an airport.

Navigational aids include runway instrumentation, lighting, and pavement markings. The primary air traffic control facility at a general aviation airport is an air traffic control tower. The type and location of

NAVAIDS and air traffic control facilities that will be required for future development of the airport are briefly discussed in this section.

5.3.1 Airport Traffic Control Tower

The primary ATC facility at a general aviation airport is an airport traffic control tower. The tower is the focal point for controlling flight operations within the airport's designated airspace and all aircraft and vehicle movement on the airport's runways and taxiways. The tower must be located so that it has maximum visibility of the airport flight patterns. It must also have a clear, unobstructed view of the approaches to all runways and taxiways.

The airport currently has a tower that is manned on a part-time basis by the Air National Guard. In order to qualify for an FAA-operated airport traffic control tower, the FAA suggests that the airport have at least 200,000 annual operations. The forecast in Chapter 4 indicates that the airport currently exceeds that level of operations. The existing tower is properly sited on the airport. At the outset, the tower would most likely be manned 16 hours a day.

5.3.2 Instrument Landing System

An instrument landing system (ILS) is a system which provides an aircraft lateral, longitudinal, and vertical guidance necessary for a landing when operating under instrument flight rules and according to precision instrument approach procedures. An ILS consists of several subsystems, including a localizer to align the aircraft on the approach path, and a glide slope to provide vertical guidance. The localizer antenna array should ideally be located on the extended runway centerline 1,000 feet beyond the far or stop end of the runway. The glide slope may be located on either side of the runway and approximately 700 feet from the runway approach threshold, inward toward the runway center.

To justify an ILS an airport should have the potential for a substantial number of instrument approaches. The number of instrument approaches

required depends on the minima which can be achieved with non-precision instrumentation. Minima are a certain cloud ceiling height and visibility distance established by the FAA. The analysis of instrument approaches contained in Chapter 4 indicates that by 1985 the airport will be able to support an ILS on the primary runway. Establishment of an ILS in conjunction with an airport traffic control tower will contribute to airport operational safety and efficiency.

5.3.3 Visual Approach Slope Indicators

Visual approach slope indicator (VASI) systems consist of light-emitting boxes located along the side of a runway to provide a pilot operating on visual flight rules with visual guidance for descent to a runway. Available VASI systems range from 2- to 16-box configurations. Two-box VASI systems are recommended for all runways at the Anoka County-Blaine Airport.

5.3.4 Ruway End Identification Lights

Runway end identification lights (REILs) are unidirectional flashing lights providing rapid and positive identification of the approach end of a runway. The REIL installation consists of two synchronized flashing lights, one on each side of the runway threshold, located from 40 to 75 feet from the runway edge, and in line with the threshold lights. A REIL system, shielded to prevent off-airport visibility problems, is recommended for an airport's primary runway(s).

5.3.5 Runway Approach Lights

A runway approach lighting system is a system of signal lights symmetrically dispersed about the extended runway centerline, beginning at the runway threshold and projecting outward in the direction of the approaching aircraft. A medium intensity approach lighting system with alignment indicator lights (MALSR) is recommended for the approach end of the primary ILS runway.

5.3.6 Runway and Taxiway Lighting and Marking

The selection of airfield lights and marking is dependent upon airfield instrumentation. For a precision runway high-intensity runway lights (HIRL), a 36-inch rotating beacon, and precision runway markings are recommended. For non-precision and visual approach runways, medium intensity runway lights (MIRL) and nonprecision runway markings are recommended. Taxiway turn-off lights are recommended.

5.4 AIRSPACE REQUIREMENTS

The FAA specifies a set of airspace requirements which are referred to as imaginary surfaces.[7] The Minnesota Department of Transportation (Minnesota DOT) also specifies airspace and obstruction criteria, and defines imaginary surfaces.[8] Ideally no obstructions would penetrate these surfaces. Where federal and state requirements vary, the more restrictive are referenced. The surfaces are described as follows.

5.4.1 Primary Surface

The primary surface is an imaginary surface of specific width longitudinally centered on a runway and extending 200 feet beyond each end of the runway. Primary surface width is dependent upon the type of approach procedure planned for the runway. The primary surface width for a non-precision runway is 500 feet. For a precision runway, the primary surface width is 1,000 feet. The primary surface width for utility runways having only visual approaches is 250 feet.

5.4.2 Horizontal Surface

The horizontal surface is an imaginary horizontal plane 150 feet above the established airport elevation. The shape of the plane is determined by striking arcs from the end of each primary surface. The radius of each arc is dependent upon the type of approach procedure planned for that runway. The individual arcs are then connected by lines tangent to the arcs. For visual and non-precision instrument runways, the radius of

these arcs is 5,000 feet. For a runway with precision instrumentation, the radius of these arcs is 10,000 feet.

5.4.3 Conical Surface

The conical surface is an imaginary inclined plane beginning at the edge of the horizontal surface and extending outward at a 20:1 slope for a distance of 4,000 feet.

5.4.4 Transitional Surface

The transitional surface is an inclined plane extending outward from the primary and approach surfaces at a 7:1 slope. From the primary surface, the transitional surface extends upward to the horizontal surface while along the approach surface, it extends upward to the horizontal and conical surfaces. Beyond the conical surfaces, the transitional surface extends outward from the approach surface to a distance of 5,000 feet.

5.4.5 Approach Surface

The approach surface is an imaginary inclined plane beginning at the end of the primary surface. The approach surface indicates the maximum height permitted for an object in the approach to a runway before it is considered an obstruction to air navigation. By not permitting penetration of the approach surface, aircraft operational safety is enhanced during the critical landing phase of a flight.

For a precision runway approach the width of the inner end of the approach surface is 1,000 feet centered on the extended runway centerline. The approach surface extends outward at a slope of 50:1 for 10,000 feet horizontal distance and then 40:1 for 40,000 feet additional horizontal distance.

According to Minnesota DOT criteria, all other runway approach surfaces slope at 40:1. For a visual approach the slope is 20:1 for a horizontal distance of 10,000 feet. Minnesota DOT policy seeks a 40:1 slope for a visual approach.

5.4.6 Clear Zone

A clear zone is a horizontal plane extending from the end of the primary surface. The clear zone has the same dimensions as the approach slope above it but extends only to the point where the approach surface has climbed 50 feet. This distance is 2,500 feet for a precision runway, 2,000 feet for all other runways.

The airport should own or control the property within the clear zone to prevent any obstructions from being created.

5.5 LANDSIDE FACILITIES

Landside facilities include terminal facilities, aircraft tie-downs, aircraft hangars, automobile parking, aircraft maintenance, and other services. The landside facility requirements for Anoka County-Blaine Airport are discussed in the material following.

5.5.1 Terminal Facilities

As a matter of policy, the MAC does not provide terminal facilities at general aviation airports. Provision of these facilities is left to the initiative of the individual fixed base operations.

5.5.2 Aircraft Storage

There are three kinds of aircraft parking: transient aircraft tie-downs, based aircraft tie-downs, and hangars. Space requirements for each are shown in Exhibit 5-3. These are based on the following assumptions.

- The storage space needed for single- and multi-engined aircraft is based on wing span and produces a requirement for 300 and 500 yards of storage space per aircraft, respectively.

- Of the Type D and E aircraft based at the airport, 70 percent will be hangared and 30 percent tied down, the same as at present.

Exhibit 5-3

Aircraft Storage Requirements
Anoka County-Blaine Airport

	1980	1985	1990	2000
AIRCRAFT PARKING SPACES REQUIRED				
High Forecast				
Based Aircraft				
Hangared	247	279	316	442
Tie-down	106	120	136	188
Total	353	399	452	630
Itinerant Tie-down	130	147	167	233
Low Forecast				
Based Aircraft				
Hangared	247	225	255	357
Tie-down	106	97	110	153
Total	353	322	365	510
Itinerant Tie-down	130	94	106	148

Source: TRA Airport Consulting.

- All itinerant aircraft are assumed to be transient and will be tied down.
- During the busiest day, 50 percent of the itinerant aircraft will be on the ground at one time.

5.5.3 Automobile Parking

Automobile parking is also required for the pilots of based aircraft and their passengers in the vicinity of the aircraft parking.

5.6 AIRPORT ACCESS

Estimates of automobile traffic which will be generated are based on data from the Institute of Traffic Engineers' Trip Generation Manual and observations of surface traffic at existing general aviation airports.[9]

Average daily auto trips to or from the airport were forecast using a ratio of 3.1 individual trips per average daily operation excluding touch-and-go operations. The forecasted traffic levels are shown in Exhibit 5-4.

Exhibit 5-4

Access Requirements
Anoka County-Blaine Airport

		1980	1985	1990	2000
Average Daily Operations	H	345	390	442	616
(excluding touch-and-go)	L	--	247	281	391
Average Daily Auto Trips	H	1,070	1,204	1,370	1,410
	L	--	766	871	1,212

Source: TRA Airport Consulting.

NOTES TO CHAPTER 5

1. Metropolitan Council of the Twin Cities Area, Metropolitan Development Guide, Aviation Chapter, 1979, p. 9.

2. Ibid., p. 13.

3. U.S. Department of Transportation, Federal Aviation Administration, "Utility Airports - Air Access to National Transportation," Advisory Circular 150/5300-4B. Change 5, January 30, 1981.

4. U.S. Department of Transportation, Federal Aviation Administration, "Techniques for Calculating Airport Airside Capacity and Delay," Report FAA-RD-74-124, June 1976.

5. See Note 3, p. 33. Such cases may require an upward adjustment of landing minimums.

6. U.S. Department of Transportation, Federal Aviation Administration, "Airport Design Standards - Site Requirements for Terminal Navigational Facilities," Advisory Circular 150/5300-2D, March 10, 1980.

7. Federal Aviation Regulations, Part 77, Federal Aviation Administration, "Objects Affecting Navigable Airspace."

8. 14 MCAR - 1.0009.

9. Institute of Traffic Engineers, Trip Generation Manual, 1975.

CHAPTER 6
ALTERNATIVE EVALUATION

6.1 INTRODUCTION

Early in the airport master planning process, the primary question under study was whether the Anoka County-Blaine Airport should be developed as an Intermediate airport or as a Minor airport, as defined in the aviation system plan.[1] As discussed in Chapter 1, the airport is no longer under consideration as an Intermediate airport. Therefore, the three alternative airport configurations under study all represent development in the Minor role.

6.2 DEFINITION OF ALTERNATIVES

The three alternatives described in the next section were developed by the consultant in coordination with the Airport Advisory Task Force. The process was iterative, involving development and revision of several alternatives before arriving at the three to receive detailed study. The remainder of this section discusses this process.

Early in the study four conceptual alternatives were identified: (1) development of an Intermediate airport primarily oriented in the north-south direction; (2) development of an Intermediate airport primarily oriented in the east-west direction; (3) development of an Intermediate airport with an entirely new orientation rotated to the northwest-southeast; (4) development of a Minor airport.

At Workshop 1 of the Airport Advisory Task Force, the consultant presented nine schematic alternative airport configurations that could implement the four conceptual alternatives.[2] Five of the schematic alternatives met the requirements of an Intermediate airport and four, of a Minor airport. Each indicated the airport configuration at the year 2000, in order to show ultimate development and maximum utilization of the site. Each alternative included a single set of parallel runways in the primary operating direction, and a single crosswind runway.

At Workshop 2 of the Airport Task Force the alternatives under study had been reduced to five, three for an Intermediate airport and two for a Minor airport. Four schematic alternatives (two Minor and two Intermediate) were eliminated because they offered no substantial improvements in airport layout efficiency and little or no improvement in community noise exposure, based on the findings of the noise analysis.

After study of the five alternative configurations and their projected noise exposure contour patterns, the Airport Task Force requested that the consultants consider revisions to those alternatives with north-south parallel runways so as to displace the southern runway threshold further to the north. The intended effect was to reduce noise exposure levels off the airport to the south, by containing the Ldn 55 noise contour entirely on airport property.

At Workshop 3, the consultants presented revisions to the two alternatives with north-south parallel runways, showing that moving the southern thresholds to a location approximately 2,600 feet north of the existing location would have the desired effect of reducing noise exposure to the south, and would not adversely affect operational efficiency. While the Ldn 55 noise contour would slightly overlap the southern airport boundary, the amount of overlap would be greatly reduced. These two revisions were adopted.

The Airport Task Force had also requested at Workshop 2 that the consultants investigate in detail what would be necessary to insure the airport would produce the minimum level of noise exposure possible in the surrounding communities. As discussed in Chapter 7, consultation with the noise consultant indicated that community exposure to aircraft noise would be greatest when operations were concentrated in one direction of operation. Lower levels of exposure in any one direction would be possible and achievable if operations were divided or spread among runways aligned in different directions.

Thus, the important factor in operation of the airport so that community exposure to aircraft noise is kept to a minimum is the ability to change the direction of operation. At Anoka County-Blaine Airport this flexibility can be achieved by allowing the airport primary runways to operate in either the north-south or east-west direction.

This effort to define a physical airport layout configuration with the needed operational flexibility led to the identification of two additional alternatives (one Intermediate and one Minor). The new alternatives included parallel runways in both operating directions. The two new alternatives were adopted.

Also at Workshop 3, one Intermediate airport alternative was dropped from consideration. The configuration with the new rotated northwest-southeast layout was eliminated for several reasons. The operational integrity of instrument approaches to the airport from the southeast would be seriously compromised by twin television towers penetrating airspace in Shoreview. The on-airport site layout also would require relocation of nearly all existing airport development. Finally, community noise exposure would not be significantly reduced over other alternatives under study.

Following Workshop 3, a total of six alternatives (three Intermediate, three Minor) remained under study. When the legislative action described in Chapter 1 resulted in elimination of development of the airport in Intermediate status as a viable alternative, the three Intermediate alternative configurations were dropped from consideration.

Following is a detailed description of the remaining three Minor airport alternatives under study.

6.3 DESCRIPTION OF ALTERNATIVES

Alternative A

Alternative A includes parallel runways oriented north-south and a single crosswind runway oriented east-west (Exhibit 6-1). Existing Runway 17-35 would have its southern threshold relocated 2,655 feet to the north and established at the existing cross taxiway to the north building area. The runway would be lengthened to the north, for a total runway length of 3,200 feet. Runway width would remain at 100 feet, as now exists. The runway would be designated Runway 17L-35R.

A new parallel runway would be constructed 500 feet west of existing Runway 17-35, and would be designated Runway 17R-35L. Its southern threshold would be the same as for Runway 17L-35R. The new runway would be 4,800 feet long and 100 feet wide, and would become the airport's primary runway.

The existing east-west Runway 8-26 would be lengthened 800 feet to the east for a total runway length of 4,000 feet and width of 75 feet.

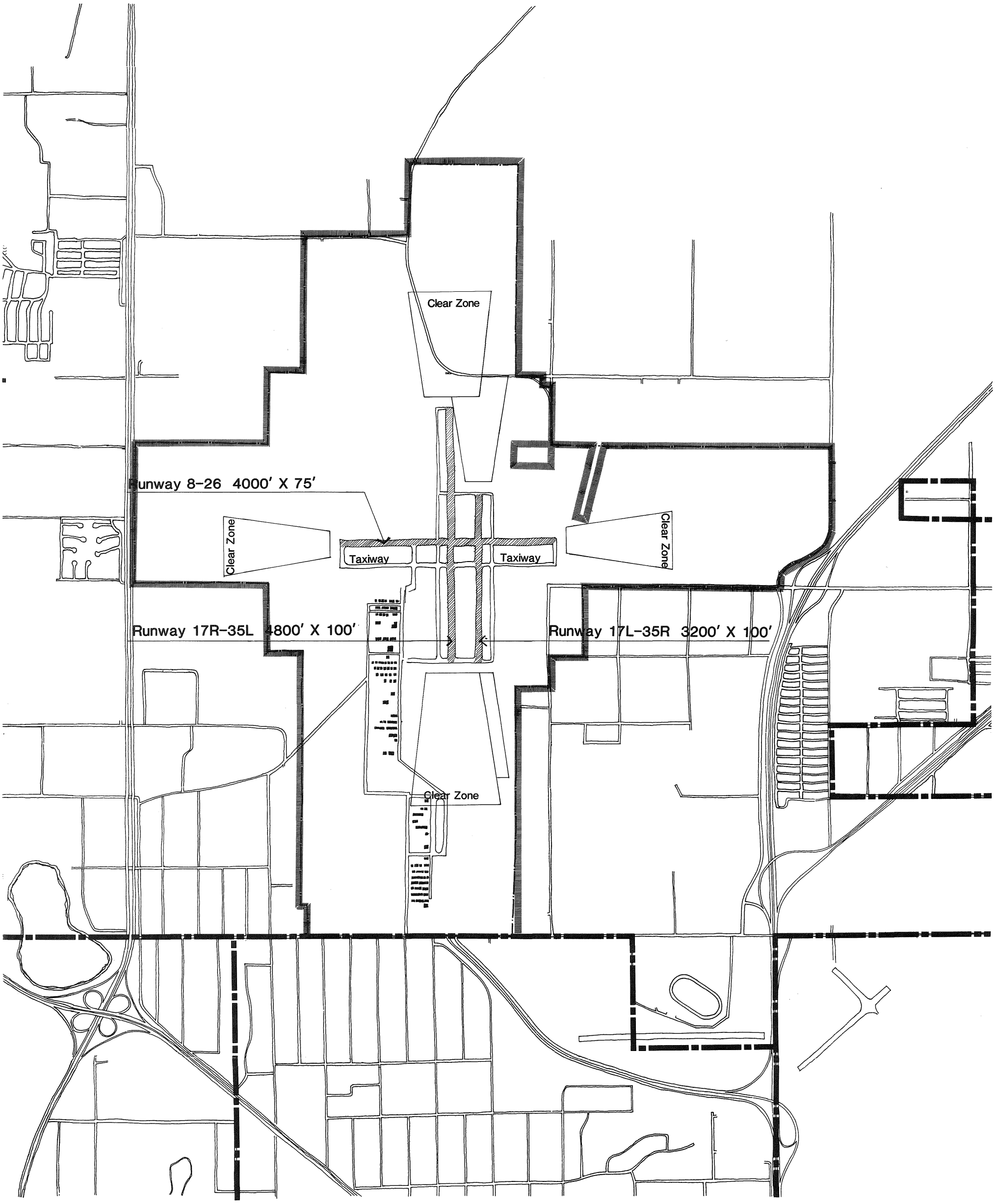
Alternative B

Alternative B includes parallel runways oriented east-west and a single crosswind runway oriented north-south (Exhibit 6-2).

Existing east-west Runway 8-26 would be lengthened 1,600 feet to the east for a total runway length of 4,800 feet and widened to a width of 100 feet. It would be designated the primary runway, Runway 8R-26L.

A new parallel east-west runway would be constructed 500 feet north of Runway 8R-26L and be designated Runway 8L-26R. The new runway would be 3,200 feet long and 75 feet wide, and would serve as the secondary runway for local operations and flight training in the primary operating direction.

Existing north-south Runway 17-35 would have both its southern and northern thresholds relocated 1,000 feet to the north. The total runway



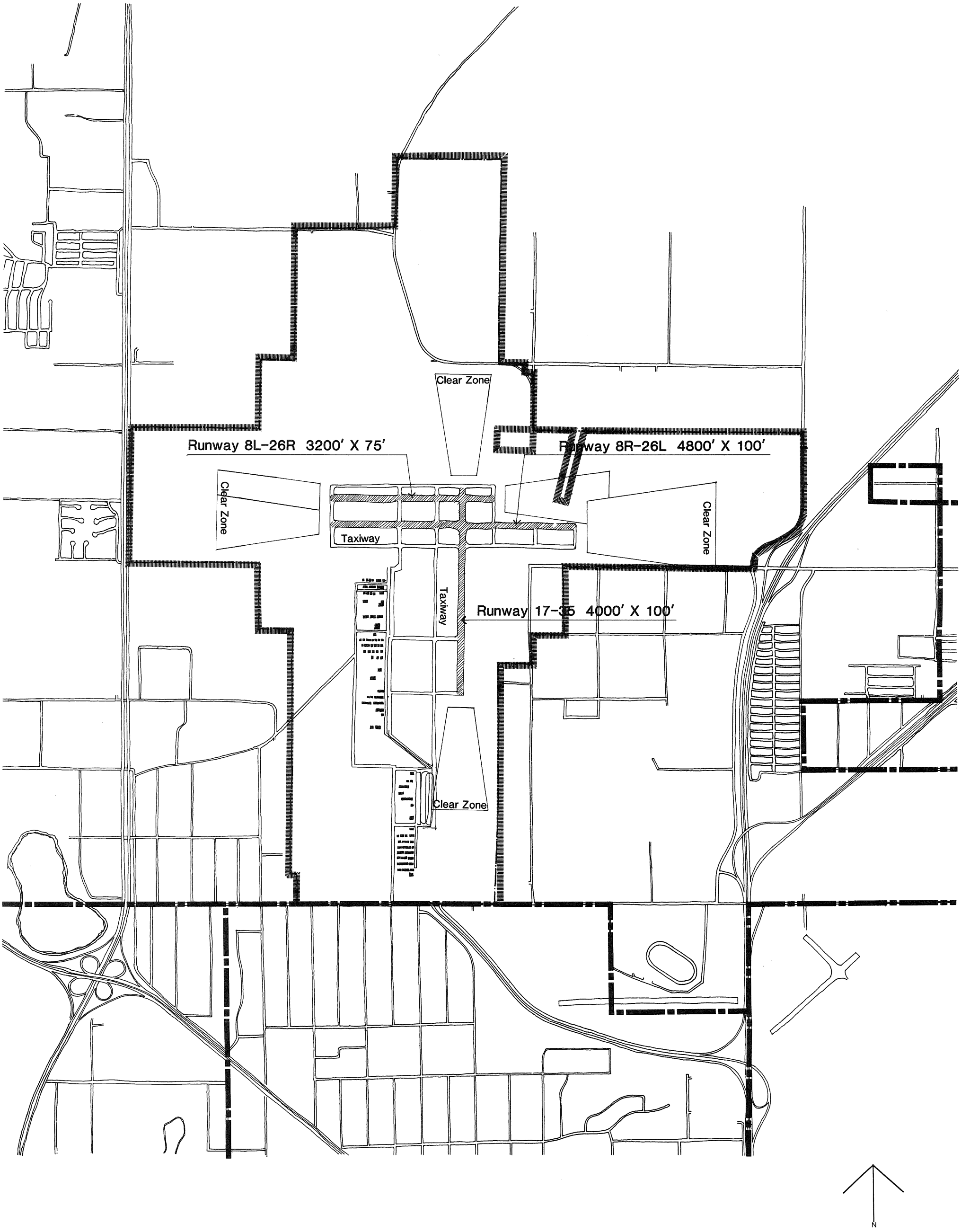
MASTER PLAN
Anoka County-Blaine Airport
Anoka County — Minnesota
TRA AIRPORT CONSULTANTS — SEATTLE, WASHINGTON

feet: 0 400 800 1600 2400
miles: 0 1/8 1/4 3/8 1/2

acres: 40, 10, 2.5

ALTERNATIVE A

Exhibit 6-1



MASTER PLAN

Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

ALTERNATIVE B

Exhibit 6-2

length would be reduced to 4,000 feet. The width of the runway would remain at 100 feet.

Alternative C

Alternative C includes parallel runways oriented in both the north-south and east-west directions (Exhibit 6-3). The north-south parallel runways would be in the same locations as those described for Alternative A. The east-west parallel runways would be in the same locations as those described for Alternative B.

The airport would be capable of operating in either orientation, as it would include a 4,800-foot primary runway and a 3,200-foot secondary runway in both orientations.

6.4 COMPARATIVE EVALUATION SUMMARY

Chapter 7, Environmental Analysis, analyzes in detail the social and environmental impacts associated with each alternative. The following section summarizes the overall impacts so that an overall evaluation of the alternatives can be made.

The three alternatives are evaluated considering facility requirement needs, operational safety and efficiency, and social and environmental compatibility. The purpose of the alternatives evaluation is to allow a comparison of alternatives and to identify trade-offs between alternatives.

6.4.1 Facility Requirements

All three alternatives meet the minimum needs for airport facilities outlined in Chapter 5, Facility Requirements. Each orients development of the airport for use by Types D and E aircraft. Each alternative allows for maximum utilization of the site through a 20-year program of phased development. Required runways, taxiways, apron, and hangar areas are accommodated in all three alternatives.

6.4.2 Social and Environmental Compatibility

Exhibit 6-4 summarizes environmental impacts and Exhibit 6-5 summarizes social impacts associated with each alternative. Following is an overall summary.

Alternative A

Alternative A would cause few impacts to the environmental impact parameters analyzed. The lengthening of existing Runway 17-35 will cause somewhat greater disruption of the natural environment than will lengthening of existing Runway 8-26 or construction of a new parallel Runway 17R-35L.

The lengthening of existing Runway 17-35 will require crossing Class 3 and 4 wetlands and soils with moderate to severe engineering constraints. Wetland vegetation and wildlife habitat will be disturbed, although similar habitat exists elsewhere on the airport property and in abundance throughout the vicinity.

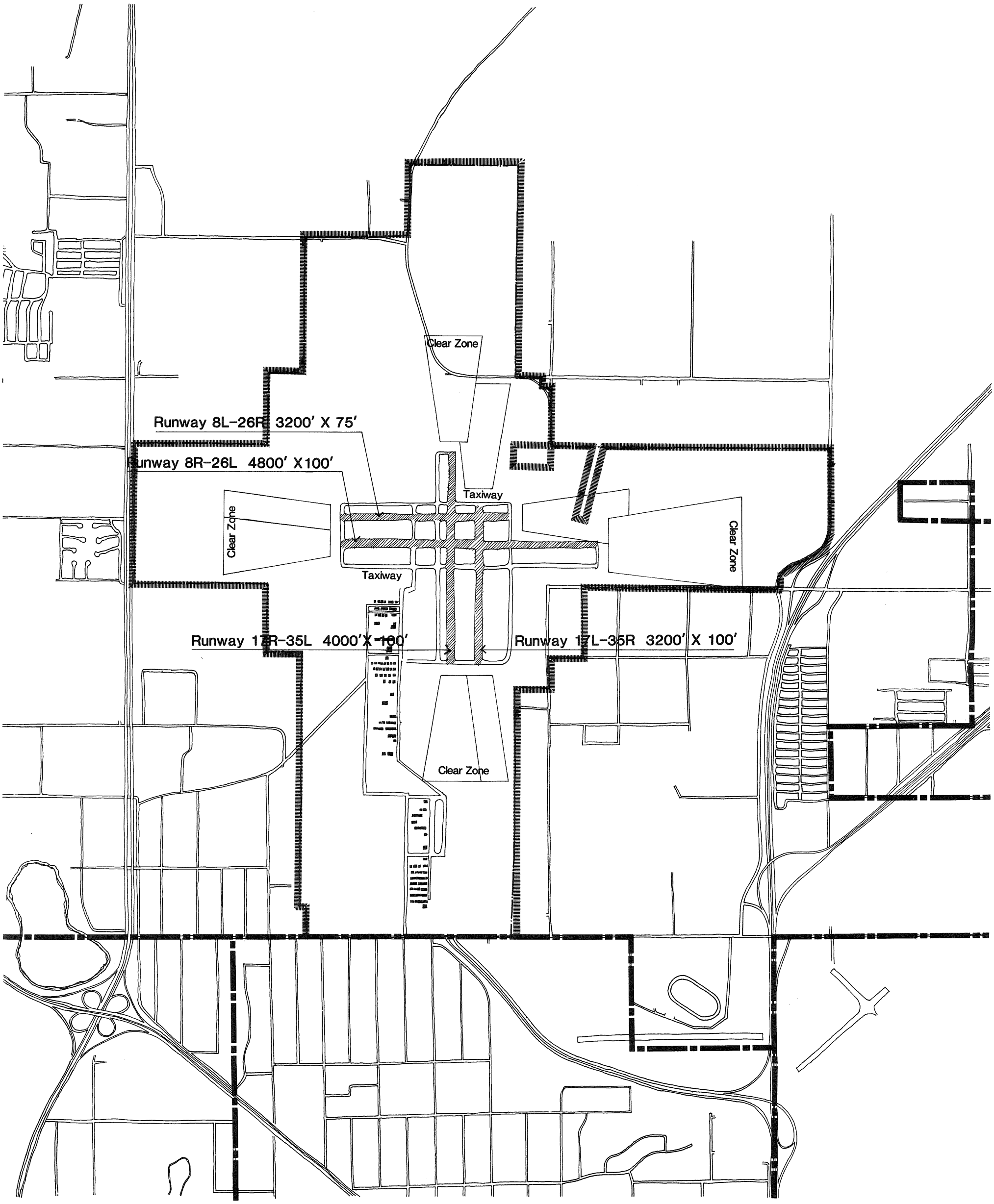
The lengthening of existing Runway 8-26 will not impact any of the environmental parameters.

Construction of a new Runway 17-35 would not affect wetlands or soils with engineering constraints. Upland grassland would be the primary wildlife habitat disturbed.

Alternative A will increase surface water runoff to a greater extent than will Alternative B, but to a lesser extent than Alternative C.

No air quality impacts are associated with any of the alternatives.

Considering social impacts, Alternative A would cause the highest cumulative noise levels off the airport property to the south, because of the north-south primary operating direction. However, even at full development in the year 2000, Ldn noise levels off the airport would remain within acceptable limits according to the guidelines.[3]



MASTER PLAN

Anoka County-Blaine Airport

Anoka County **Minnesota**

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

ALTERNATIVE C

Exhibit 6-3

Exhibit 6-4

Environmental Impacts

	Alternative A	Alternative B	Alternative C
Wetlands	Class 3 and 4 wetlands would be filled by lengthening existing Runway 17-35 to the north. The new parallel N-S Runway 17R-35L and lengthening existing Runway 8-26 would have no impact to wetlands. Alternative A would have the least impact of any alternative.	Class 3 and 6 wetlands would be filled by lengthening existing Runway 17-35, and constructing a new parallel E-W Runway 8L-26R. Much of the wetlands filled are class 6 wetland, considered relatively less valuable for wildlife habitat.	Class 3, 4, and 6 wetlands would be filled by lengthening existing Runway 17-35 and constructing a new parallel E-W Runway 8L-26R. All the wetlands filled by Alternatives A and B would be filled by Alternative C.
Geology & Soils	Lengthening the existing N-S Runway 17-35 would cross soils with moderate engineering constraints. The two other runways would have no impact. Alternative A would have the least impact from a soils standpoint of any alternative.	Lengthening existing N-S Runway 17-35 and construction of a new Runway 8L-26R, would require crossing soils with moderate engineering constraints.	Lengthening existing runways and construction of new runways would require crossing soils with moderate engineering constraints. The same soils crossed by Alternatives A and B would be crossed by Alternative C.
Vegetation & Wildlife Habitat	Upland grassland would be the primary wildlife habitat disturbed by construction. A small area of wetland habitat would be disturbed by lengthening the existing N-S runway.	Upland grassland would be the primary wildlife habitat disturbed by construction. An area of wetland habitat would also be disturbed by construction of the new E-W runway.	The major wildlife habitat disturbed by construction would be upland grasslands. The same vegetation and wildlife habitat disturbed by Alternatives A and B would also be disturbed by Alternative C.
Hydrology & Water Quality	A total of 10.63 acres of new runway pavement would be placed, resulting in an increase of 11.16 cubic feet/second in surface runoff over existing. No negative impact would occur.	A total of 5.62 acres of new runway pavement would be placed, resulting in an increase of 5.90 cubic feet/second in surface water runoff. Alternative B would create the least increase in runoff. No negative impact would occur.	A total of 17.52 acres of new runway pavement would be placed, resulting in an increase of 18.40 cubic feet/second in surface water runoff. No negative impact would occur.
Air Quality	Air pollutants emitted by aircraft include Carbon Monoxide (CO), Hydrocarbons (HC), Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Particulate Matter (TSP). Aircraft emissions for each alternative would be equal and well below pollutant standards.	Air pollutants emitted by aircraft include Carbon Monoxide (CO), Hydrocarbons (HC), Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Particulate Matter (TSP). Aircraft emissions for each alternative would be equal and well below pollutant standards.	Air pollutants emitted by aircraft include Carbon Monoxide (CO), Hydrocarbons (HC), Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Particulate Matter (TSP). Aircraft emissions for each alternative would be equal and well below pollutant standards.

	Alternative A	Alternative B	Alternative C
Noise	Noise exposure above Ldn 55 would be entirely contained on the airport property to the east and west, but would extend off-site for approximately one-quarter mile to the north and south. To the north is agricultural land. To the south is a highway corridor and residential area.	Noise exposure above Ldn 55 would be entirely contained on the airport property to the north and south, but would extend off-site for approximately one-half mile to the west and east. An existing mobile home park is to the west. To the east is undeveloped land and highway corridor.	Cumulative noise contours above Ldn 55 would be smaller than for either Alternatives A or B. Alternative C has the greatest potential for operation of the airport in compliance with the State noise standard.
Sensitive Receptors & Special Sites	Noise exposure would be concentrated to the north and south of the airport. Noise exposure would be compatible according to FAA Guidelines. No impact to Sensitive Receptors or Special Sites will occur.	Noise exposure would be concentrated to the east and west of the airport. Noise exposure would be compatible according to FAA Guidelines. No impacts to Sensitive Receptors or Special Sites will occur.	Cumulative noise exposure will be distributed in all directions. No impacts to Sensitive Receptors or Special Sites will occur.
Land Use Compatibility	Noise exposure between Ldn 55 and Ldn 60 would extend off-site to the north and south. All adjacent off-site land uses would be compatible according to the FAA Guidelines.	Noise exposure between Ldn 55 and Ldn 60 would extend off-site to the east and west. According to FAA Guidelines, adjacent land uses would be compatible.	Parallel runways in both directions would allow flexibility in airport operations, thus reducing total traffic and noise exposure in any single direction. According to FAA Guidelines, all adjacent land uses would be compatible.
Zoning Compatibility	Model Airport Zoning Ordinance Land Use Zone A would be contained on the airport property. Zone B would extend off the airport property to the north, east, and west. Existing city land use would be compatible in Zone B. Future land use may be subject to use restrictions.	Model Airport Zoning Ordinance Land Use Zone A would be entirely contained on the airport property. Zone B would extend off the airport property in all directions. Existing city land use would be compatible in Zone B. Future land use may be subject to use restrictions.	Model Airport Zoning Ordinance Land Use Zone A would be contained on the airport property. Zone B would extend slightly off the airport property to the north, east, and west. Existing city land use would be compatible in Zone B. Future land use may be subject to use restrictions.
Access	Xylite Street would have to be closed and relocated on airport property. 101st Avenue NE would have to be relocated further to the north on airport property.	Xylite Street would have to be closed and relocated on airport property.	Xylite Street would have to be closed and relocated on airport property. 101st Avenue NE would have to be relocated further to the north on airport property.

Exhibit 6-5

No sensitive receptors or special sites would be affected, although one small undeveloped park in Mounds View would be near the Ldn 55 noise contour and would experience aircraft overflights.

The airport would be compatible with adjacent land use, although future land use controls may be desirable to ensure continued compatibility.

As with Alternative C, the Land Use Zone B that would result from application of the model airport zoning ordinance to the airport would overlap the airport boundary to the west, over an existing mobile home park. Although the ordinance only addresses new development and does not affect existing development, mobile home parks are not considered compatible in Zone B.

As with the other alternatives, the portion of Xylite Street on airport property would have to be closed and relocated. As with Alternative C, 101st Avenue Northeast would have to be relocated on airport property.

Alternative B

Alternative B would cause a moderate amount of impact to wetlands and soils with engineering constraints, but would have little impact to vegetation and wildlife habitat, hydrology and water quality, and air quality.

Class 3 and 6 wetlands would be crossed by lengthening existing Runway 17-35, and construction of a new parallel Runway 8L-26R. However, most of the wetlands that would be crossed are Class 6 wetlands, considered to be relatively less valuable for wildlife habitat.

Alternative B would require the least amount of new runway to be constructed and would therefore result in the least increase in surface water runoff.

Alternative B would have a higher associated social impact than either of the other alternatives. Noise exposure above Ldn 55 would be entirely

contained on the airport property to the north and south, but would extend off-site to the west and east. No noise-sensitive receptors or special sites are within these areas, and noise exposure would be compatible with land use guidelines. The one exception is the existing mobile home park west of the airport along Highway 65. It would not be considered fully compatible because a portion would be contained within the Ldn 55 contour.

In addition, the Land Use Zone B to be established under the model airport zoning ordinance would extend off the airport property to the south, over several residences. This situation would not be considered fully compatible, although the zoning ordinance would only affect future development.

As with the other alternatives, a portion of Xylite Street would have to be closed and relocated.

Alternative C

Alternative C would have the greatest relative impact to the natural environment and the least relative impact to the social environment, of any of the three alternatives.

All wetlands and soils with engineering constraints crossed by Alternatives A and B would be crossed by Alternative C.

Considering social impacts, the provision of parallel runways in both operating directions greatly reduces the cumulative noise exposure on all sides of the airport. Thus, even though total aircraft noise emissions would be the same as for the other alternatives, noise impacts will be greatly reduced and land use compatibility greatly increased for Alternative C. This results because the same total amount of aviation activity is dispersed over a broader area of the community.

The only potential conflict with zoning compatibility is that the Land Use Zone B west of the airport would extend off-site over an existing

mobile home park, as in Alternative A. Although the model airport zoning ordinance only addresses new development, mobile home parks are not considered compatible in Zone B.

In summary, all three alternatives meet the facility requirements needed, would be operationally safe and efficient, and would be socially and environmentally compatible according to State noise standards and federal guidelines.

Alternative C would have a relatively higher environmental impact and a relatively lower social impact than Alternatives A or B. It would allow the greatest flexibility in airport operation and would provide the greatest opportunity for compliance with the State noise standard.

NOTES TO CHAPTER 6

1. Metropolitan Council of the Twin Cities Area, Metropolitan Development Guide: Aviation-Airport Systems Plan/Development Guide, 1978.

2. See Summary Memorandum of Workshop 2, Anoka County-Blaine Airport Advisory Task Force, in Appendix A.

3. See Chapter 7, section 7.3.1, Noise.

7. Environmental Analysis

CHAPTER 7
ENVIRONMENTAL ANALYSIS

7.1 INTRODUCTION

Future development of Anoka County-Blaine Airport will be subject to formal environmental review at both the federal and state levels.

Since adoption of the National Environmental Policy Act of 1969 (NEPA), all federal agencies have been required to consider environmental values and environmental impacts for any federal project or action determined to have potential for significantly affecting the environment.[1] For such actions, an environmental impact statement (EIS) is required.

The FAA will be the agency responsible for complying with NEPA, once a specific airport development program is proposed by the MAC, because future airport development may well be implemented using federal funds.

The FAA has established procedural and substantive guidelines for NEPA compliance.[2] FAA requirements for environmental documentation apply to specific development actions involving federal funding or requiring federal approval. FAA approval of a revised airport layout plan is also subject to environmental review requirements.

Airport master plans prepared with FAA planning grant assistance, such as the present study, are not considered major federal actions and are not subject to FAA environmental review requirements. However, environmental consideration should be included as an integral part of airport master planning.

Designated wetlands and floodplains occur on the airport property, and would be disturbed by the three alternative runway configurations being considered. Executive orders require environmental review of federally assisted construction within wetlands and floodplains.[3]

As a public agency, the MAC is also required to comply with the Minnesota Environmental Policy Act of 1973[4] and the Minnesota Environmental Quality Council environmental review program.[5] Prior to implementing development, an environmental assessment worksheet (EAW) must be completed, and a determination reached as to whether more detailed environmental documentation is required. Included among actions for which the Minnesota Environmental Quality Board requires the preparation of an EAW are development in wetlands and floodplains.[6]

The remainder of this chapter documents the baseline conditions and anticipated environmental impacts associated with each alternative airport layout. While formal environmental documentation is not required to be part of an airport master plan, this information is presented because of the influence of environmental considerations in alternatives evaluation, and as input to future preparation of formal documentations.

7.2 ENVIRONMENTAL IMPACT PARAMETERS

7.2.1 Geology and Soils

The Anoka County-Blaine Airport lies within the Anoka Sand Plain. This geomorphic region was created by the deposition of sands from meltwaters of retreating glaciers. The Sand Plain covers most of Anoka County and is nearly level topographically, with numerous iceblock depressions and old glacial drainageways which have now become wetlands.

Two soil associations occur within the airport vicinity. The Rifle-Isanti association is located in a belt which stretches the northeast corner of the county to an area around the airport. It is characterized by nearly level, very poorly drained soils formed in organic material and fine sand. The Zimmerman-Isanti-Lino association forms the perimeter of the Anoka Sand Plain. It surrounds the Rifle-Isanti association and generally borders glacial till areas. This association is characterized by nearly level to undulating, excessively drained, somewhat poorly drained, and very poorly drained soils that are dominated by sands throughout.

Seven soil series have been identified within airport boundaries: Isanti, Lino, Markey, Marsh, Rifle, Soderville, and Zimmerman. Exhibit 7-1 shows the soils pattern on the airport.

The important variable for planning is whether or not specific soils can support excavation and grading for runways, taxiways, and other airport facilities. The U.S. Soil Conservation Service (SCS) has characterized the engineering properties associated with each soil series.[8] Exhibit 7-2 shows the location of soils considered by the SCS to have slight, moderate, or severe engineering constraints for development of runways. Exhibit 7-3 summarizes the actual linear distances crossed.

The SCS engineering constraints analysis is considered a general assessment of the relative difficulty for construction. In cases where runways would be constructed through areas with moderate or severe engineering constraints, construction is still feasible, but is relatively more difficult and costly.

Impacts

All three alternatives would require development of soils considered to have moderate to severe engineering constraints.

Alternatives A and C both include extension of the existing Runway 17-35 northward through an edge of a wetland area of Type Ma soils of moderate to severe engineering constraints.

Construction of a parallel north-south Runway 17R-35L, included in Alternatives A and C, would be contained in areas with no or slight soils engineering constraints.

Extension of the existing east-west Runway 8-26, included in all three alternatives, would be accomplished in areas with no or slight engineering constraints.

Construction of a parallel east-west Runway 8L-26R, included in Alternatives B and C, would require development in areas of soil type Ma with moderate to severe engineering constraints.

In summary, Alternative C would be the most difficult to construct due to greater development in soils of moderate to severe engineering constraints. Alternative B would require almost as much development in those soils. Alternative A would require very little development in those soils and would be the least difficult alternative to develop.

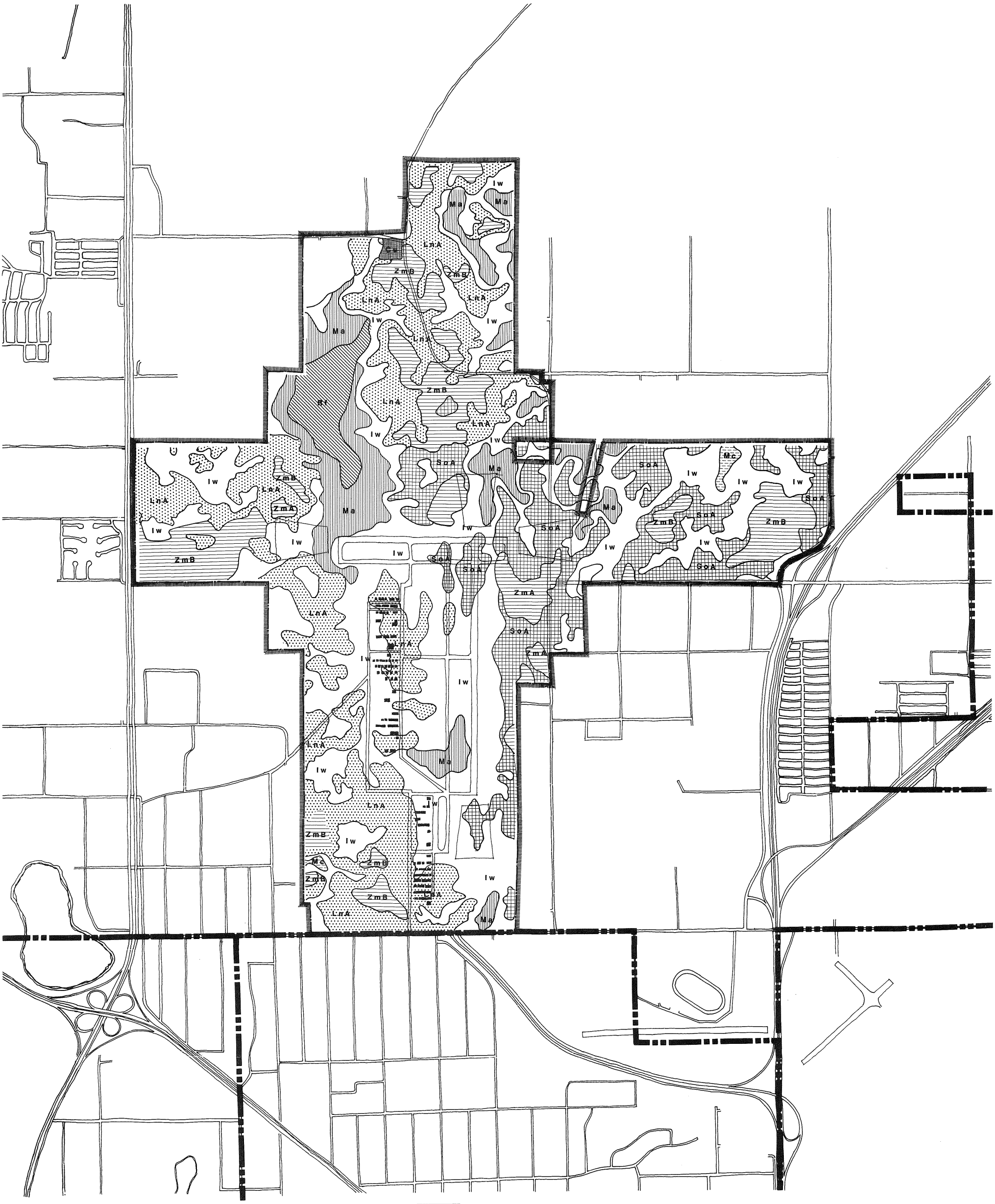
7.2.2 Vegetation and Wildlife Habitat

Three general vegetation associations are present on the airport property: wetlands, woodlands, and upland grasslands. Exhibit 7-4 shows the location and distribution of woodlands and grasslands. Wetlands are shown on Exhibit 7-6. In many cases wetlands and woodlands are intermixed. Woodlands are generally oak forests intermixed with other deciduous tree and shrub species. Isolated aspen groves are also present on portions of the site. Mature woodlands are present on the north, east, and south portions of the site.

Wetlands are present throughout the region with major wetland systems to the northeast, northwest, and west of existing airport development on airport property.

Upland grasslands occupy the remainder of the airport site. The upland grassland habitat adjacent to the existing runways and taxiways are mowed regularly through MAC maintenance. Areas on the northern portion of the airport are also cultivated.

According to the Minnesota DNR, wildlife habitat in the airport region is directly related to these vegetation associations.[9] Wetlands can provide habitat for birds and small mammals, such as ducks, geese, herons, shorebirds, rails, kingfishers, muskrats, and beavers. Woodland habitat can provide an environment for birds and small mammals such as ruffed grouse, woodcocks, thrushes, woodpeckers, squirrels, raccoons, and white-tailed deer. Upland grassland can provide nesting and feeding habitat for ground-nesting waterfowl and for upland birds such as ring-necked pheasant, ruffed grouse, flicker, rufous-sided towhee, and several spe-



Iw – Isanti Sandy Loam

LnA – Lino Loamy Fine Sand

ZmA – Zimmerman Fine Sand

ZmB – Zimmerman Fine Sand

ZmC – Zimmerman Fine Sand

SoA – Soderville Fine Sand

Ma – Markey Muck

Rf – Riffle Mucky Peat

McZ Mc – Marsh

Cu – Cut & Fill Land

N

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Anoka County Minnesota

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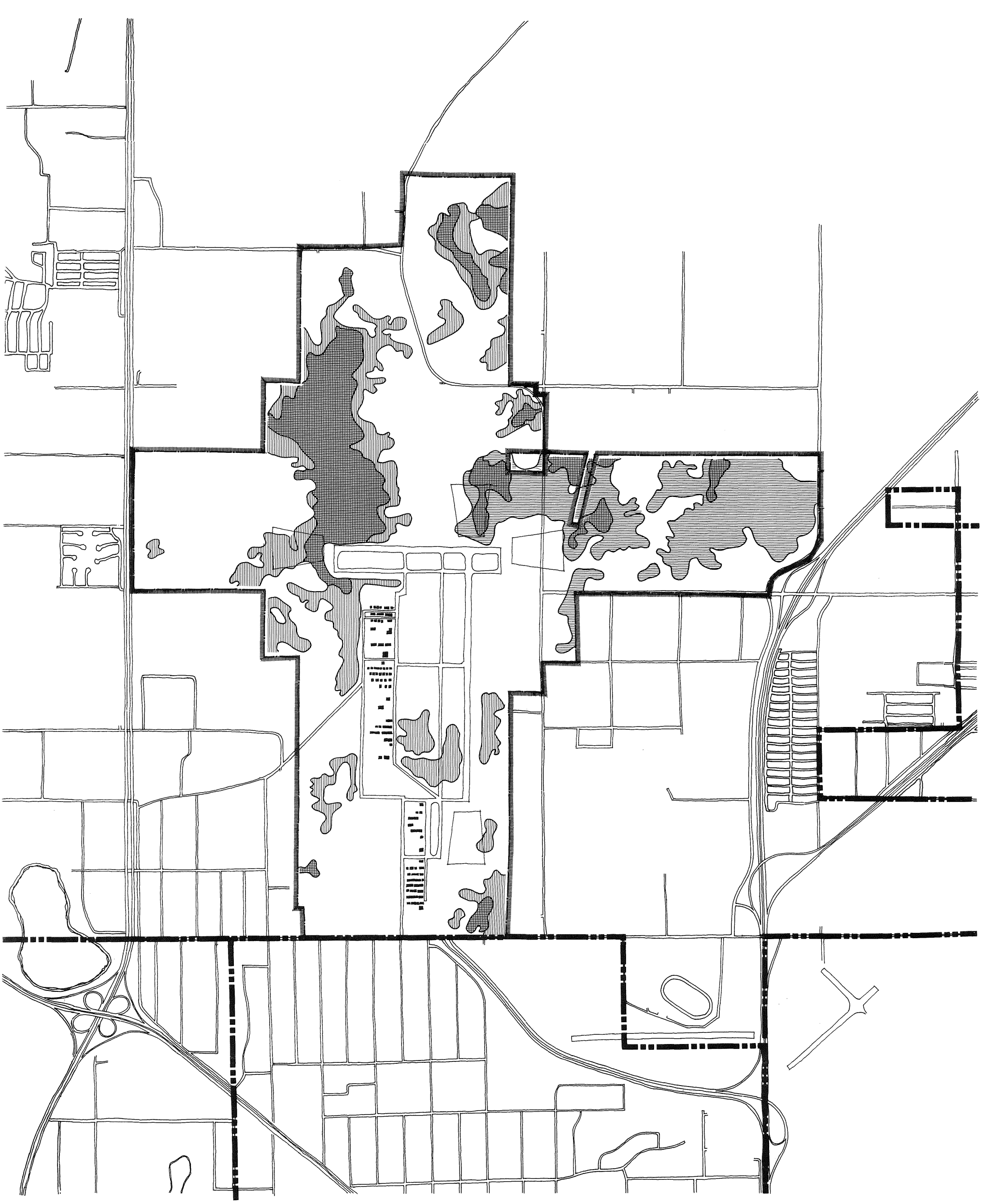
feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

SOILS

Exhibit 7-1



Slight or None

Moderate

Severe

N

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Anoka County Minnesota

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feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

ENGINEERING CONSTRAINTS

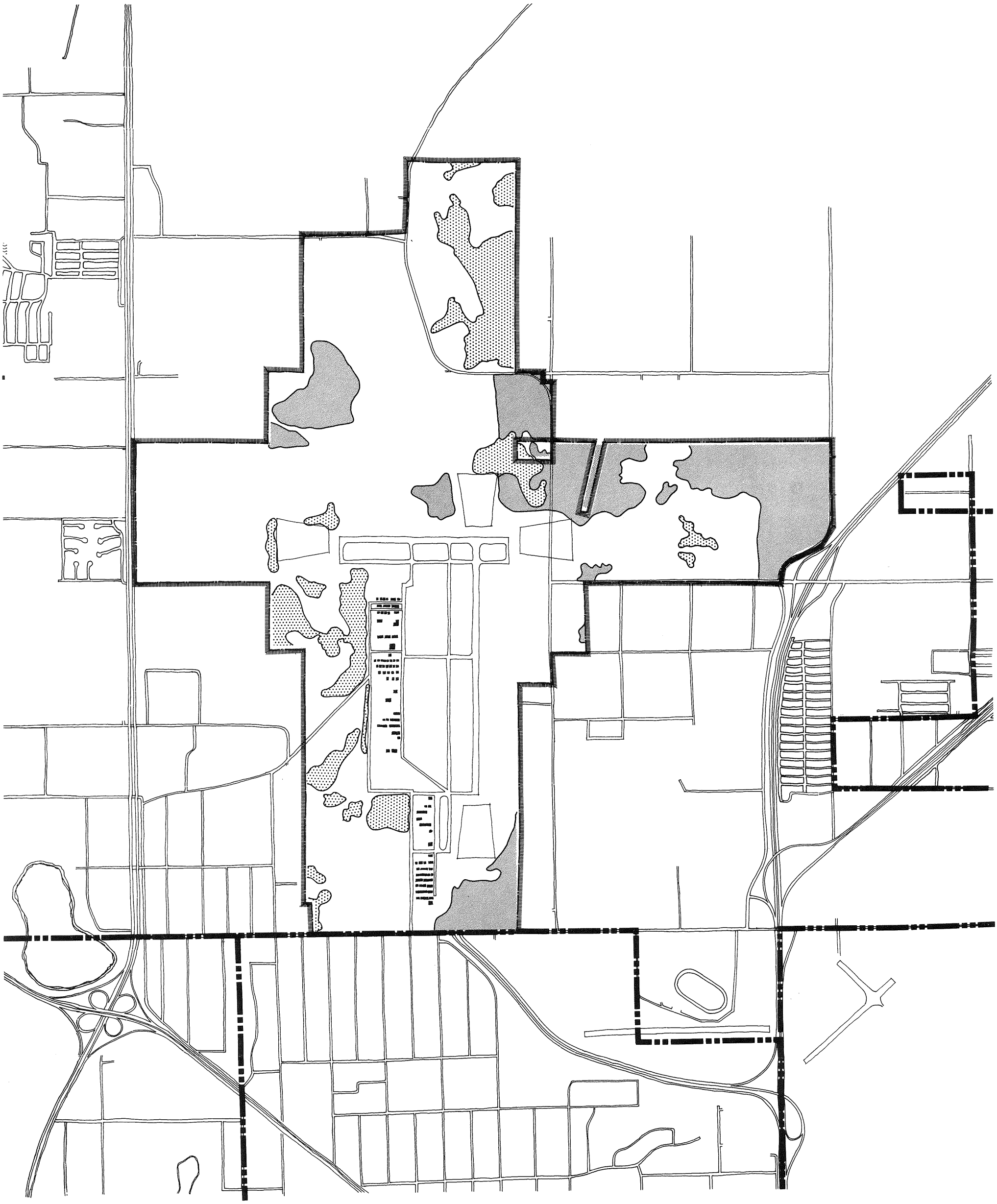
Exhibit 7-2

Exhibit 7-3

Soils Crossed with Moderate Engineering Constraints

Alternative	Runway	Distance Crossed in Linear Feet	Constraint
A	17L-35R	800	Moderate
	17R-35L	0	
	8-26	0	
B	17-35	600	Moderate
	8R-26L	0	
	8L-26R	2,800	Moderate
C	17L-35R	800	Moderate
	17R-35L	0	
	8R-26L	0	
	8L-26R	2,800	Moderate

Source: TRA Airport Consulting.



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Anoka County — Minnesota
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VEGETATION

Exhibit 7-4

cies of sparrows. Additionally, many bird species benefit from the edge conditions created between these three habitat types.

Impact

The major impact to wildlife associated with airport development is the disturbance or removal of habitat. As is evidenced by existing conditions at the airport, wildlife can easily acclimate to the presence of nearby aircraft activity so long as their habitat remains intact.[10]

Construction of runways and taxiways through any habitat will remove available vegetation and wildlife habitat and will directly affect wildlife in those areas.

Exhibit 7-5 indicates the length of new runway that would cross each of the three habitat types. It indicates the relative impacts associated with each alternative.

Disruption of wildlife habitat would occur to some extent with all three alternatives. Lengthening the existing north-south Runway 17-35 would require removal of a 400-linear-foot strip of immature aspen woodland and associated wetland. Construction of a new parallel north-south Runway 17R-35L would require a small stand of mature shrubby oaks and aspen to be removed.

Lengthening of the existing east-west Runway 8-26 would have no impact to woodlands or wetlands. Construction of a new parallel east-west Runway 8L-26R would require removal of the edge of a stand of mature oak woodlands, for 800 linear feet. A stand of mature oak woodland at the east end of the runway would also be removed.

Overall, the major habitat type that would be affected by each alternative would be upland grasslands, the most abundant on the airport and considered by the Minnesota DNR to be the least valuable habitat type for wildlife.

Exhibit 7-5

Vegetation and Wildlife Habitat Type Crossed by Runways

Alternative	Runway	Vegetation Crossed in Linear Feet	Habitat Type
A	17L-35R	1,200	Grassland
		400	Immature Woodland
	17R-35L	800	Mature Woodland
		1,800	Grassland
	8-26	800	Grassland
	TOTAL	3,800	Grassland
		400	Immature Woodland
		800	Mature Woodland
B	17-35	800	Grassland
	8R-26L	800	Grassland
	8L-26R	1,600	Mature Woodland
		2,400	Grassland
	TOTAL	4,000	Grassland
		1,600	Mature Woodland
C	17L-35R	1,200	Grassland
		400	Immature Woodland
	17R-35L	800	Mature Woodland
		1,800	Grassland
	8L-26R	1,600	Mature Woodland
		2,400	Grassland
	8R-26L	800	Grassland
	TOTAL	6,200	Grassland
		400	Immature Woodland
		2,400	Mature Woodland

Source: TRA Airport Consulting.

7.2.3 Wetlands

Major upland wetlands occur throughout the airport vicinity. The Minnesota DNR has mapped all wetlands in the Metro Area, and has inventoried wetlands into 35 classes according to vegetation community.[11] Wetlands have been cross-referenced according to the U.S. Fish and Wildlife Service system that indicates their value for wildlife habitat.[12] Of the 20 U.S. Fish and Wildlife wetland types, five exist on the Anoka County-Blaine Airport property. They are: Class 3 - Shallow Fresh Marsh; Class 4 - Deep Fresh Marsh; Class 5 - Open Fresh Marsh; Class 6 - Shrub Swamp; and Class 7 - Wooded Swamp. Exhibit 7-6 shows their location and distribution.

While all wetlands are important ecologically, the Minnesota DNR identifies Class 3 - Shallow Fresh Marsh, and Class 4 - Deep Fresh Marsh, as the most valuable for production of wildlife habitat.

Impact

The major impact to wetlands associated with each alternative would be their alteration and earthfilling to construct new runways and taxiways. Exhibit 7-7 shows an estimated length of new runway that would cross designated wetlands, by class. While the exhibit does not identify total areal extent of disturbance to wetlands, it does indicate the relative disruption to wetlands associated with the alternatives.

All three alternatives would require disturbance and earthfilling of some wetlands. The lengthening of existing Runway 17-35 to the north (Alternatives A and C) would require earthfill of the edge of a Class 3 and a Class 4 wetland.

The lengthening of existing Runway 8-26 to the east would not cross wetlands. Construction of a new parallel north-south Runway 17R-35L (Alternatives A and C) would not cross wetlands. However, construction of a new parallel east-west Runway 8L-26R (Alternatives B and C) would require earthfilling of a portion of a Class 3 wetland and a Class 6 wetland.

Exhibit 7-7

Wetlands Crossed by Runways

Alternative	Runway	Length in Linear Feet of New Runway Crossing Wetlands	Wetland Class
A	17L-35R	1,400	Class 3, 4
	17R-35L	0	
	8-26	0	
B	17-35	800	Class 3
	8L-26R	800	Class 3
		1,500	Class 6
	8R-26L	0	
C	17L-35R	1,400	Class 3, 4
	17R-35L	0	
	8L-26R	800	Class 3
		1,500	Class 6
	8R-26L	0	

Source: TRA Airport Consulting.

Class 3- Shallow Fresh Marsh

Class 4- Deep Fresh Marsh

Class 5- Open Fresh Water

Class 6- Shrub Swamp

Class 7- Wooded Swamp

Offsite Uplands

Airport Uplands

N

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Anoka County Minnesota

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feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

WETLANDS

Exhibit 7-6

In summary, Alternative A would have the least direct impact to wetlands, but would require 1,400 linear feet of new runway and taxiway to be constructed in Class 3 and 4 wetlands. Alternative C would have the greatest direct impact and would require a total of 3,700 linear feet of new runway and taxiway to be constructed in Class 3, 4, and 6 wetlands. Alternative B would require a total of 3,000 linear feet of new runway to be constructed in Class 3 and 6 wetlands.

7.2.4 Hydrology and Water Quality

Surface water, originating from on-airport property, flows through two major watersheds, the Coon Creek watershed basin and the Rice Creek watershed basin. (See Exhibit 7-8.) Both watersheds ultimately drain into the Mississippi River. Most of the airport drains into Coon Creek through Sand Creek (County Ditch No. 41). Sand Creek originates southeast of Radisson Road at the airport and flows north to 116th Avenue Northeast, where it turns west and flows approximately four miles before discharging into Coon Creek.

The southeastern section of the airport drains into Rice Creek south through Judicial Ditch No. 1. Water from this channel enters Rice Creek in the vicinity of 79th Avenue Northeast.

Designated 100-year and 500-year floodplains occur on the northwest, north, and east portions of the airport property.[13] Flood potential along drainage courses in the city of Blaine is greatest during intense summer storms, while flooding of lake shorelines is usually associated with spring snowmelt runoff.

The principal source of groundwater in the area is the Prairie du Chien-Jordan aquifer. Recharge is largely by direct vertical percolation of water in places where the formations crop out or are overlaid by permeable glacial material. Exposed Prairie du Chien and Jordan formations appear south and east of the airport in the Rice Creek area. Generally, however, the area surrounding the airport is not a significant ground-

water recharge area.[14] At approximately 40 to 50 feet below the surface there are about 10 to 30 feet of interspersed clay and sandy clay layers. This controls the water level above and retards the recharge of water-bearing formations below these clay layers. The high water table in the airport vicinity is a result of the location of this subsurface layer.

Impact

Impacts to the hydrologic regime and water quality normally involves consideration of both groundwater and surface water resources. However, because of the impermeable nature of the subsurface in the airport vicinity, and because the airport area is not a significant groundwater recharge area, potential groundwater pollution is not a significant issue related to airport development. The major issue is the increase in surface water runoff that would result from airport development, and the capability of the on-airport drainage system to accommodate the added runoff without flooding to adjacent properties.

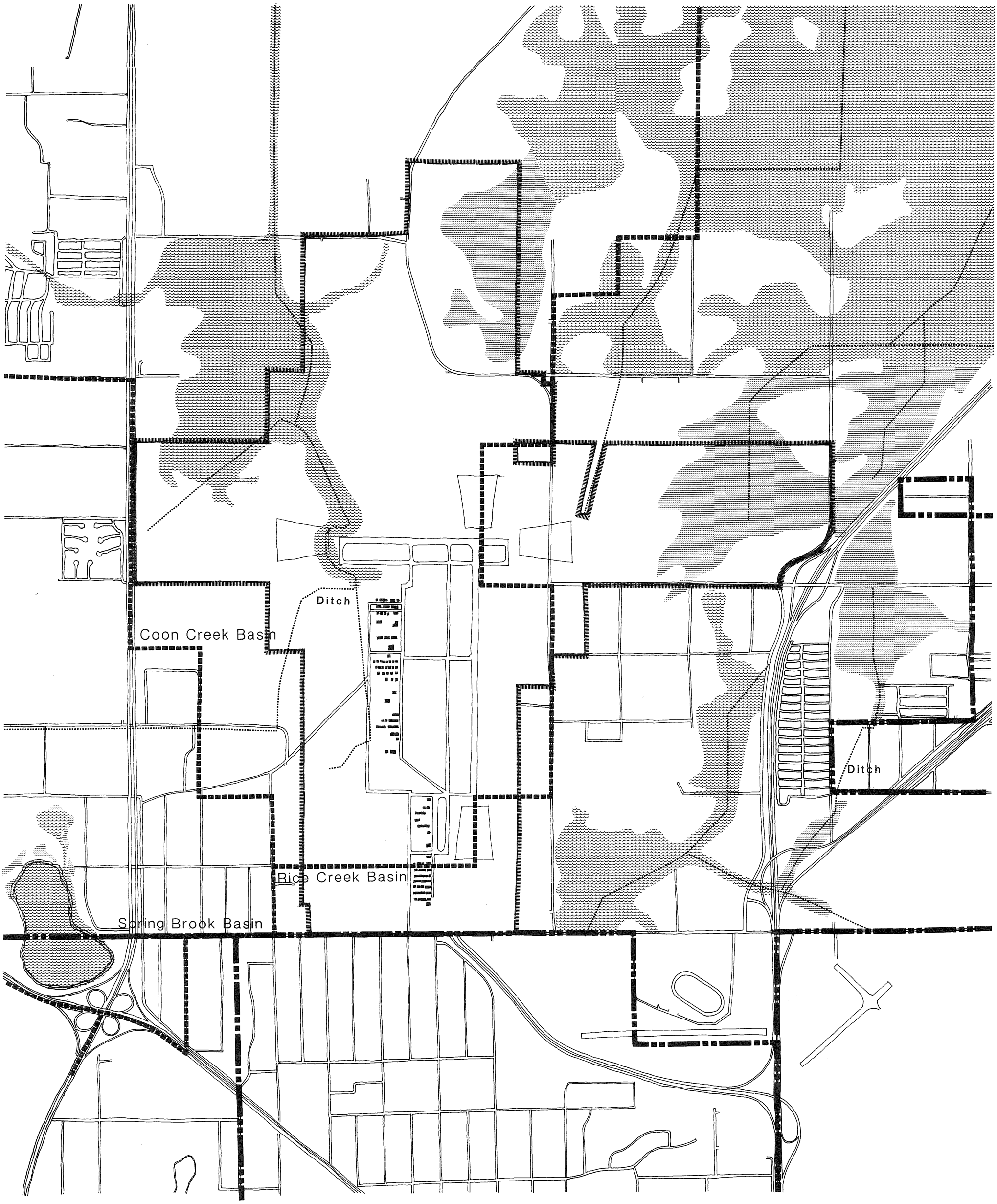
All three alternatives would cause an increase in surface water runoff in proportion to the amount of new pavement constructed for runways and taxiways. The rate of runoff may be estimated by the following formula, known as the "Rational Formula":[15]

$$Q = ACI$$

in which Q = the runoff from an area, in cubic feet per second
A = the area to be drained, in acres
C = the coefficient of runoff
I = the intensity of rainfall, in inches per hour

At the Anoka County-Blaine Airport, I = 1.75, and for paved runway and taxiway surfaces, C = 0.95.

Exhibit 7-9 indicates the estimated additional runoff associated with each alternative. While Alternative C would create the largest relative increase in runoff, the increase is insignificant compared to the total



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Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400
miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

HYDROLOGY

Exhibit 7-8

runoff of the airport property and capacity of the existing drainage system. None of the alternatives will increase flooding potential off airport property.

A surface water runoff collection and retention ponding system already exists on the airport. This system is to be a part of future development, and will minimize localized flood potential on airport property, as well as provide for separation of pollutants from surface water before drainage off airport property. Thus, none of the alternatives will adversely affect surface water quality.

Exhibit 7-9
Estimated Increased Rate of Runoff

Alternative	Acres of New Runway	Runoff for New Runways (cu.ft./sec.)	Runoff for Existing Landcover (cu.ft./sec.)	Additional Runoff Created (cu.ft./sec.)
A	10.63	17.67	6.51	11.16
B	5.62	9.34	3.44	5.90
C	17.52	29.13	10.73	18.40

Source: TRA Airport Consulting.

7.2.5 Air Quality

Urban air pollution involves a complex interplay of events, including the transport and dispersion of various types of airborne matter. The sources of most urban air pollution are emissions from motor vehicles, industries, power plants, heating plants, waste disposal, commercial and agricultural activities, aircraft, and natural sources.

The Minnesota Pollution Control Agency (MPCA) has established standards for five pollutants affecting urban air quality: Carbon Monoxide (CO), Hydrocarbons (HC), Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Particulate Matter. Exhibit 7-10 shows the Minnesota standards for each pollutant.[16] These standards are the same as national standards promulgated by the U.S. Environmental Protection Agency (EPA).

The Twin Cities Metropolitan Area has been designated a nonattainment area for four air pollutants: SO_2, CO, particulates, and photochemical oxidants, measured at ozone (O_3). Carbon monoxide and oxidants are primarily attributable to transportation sources.

According to the Metro Council, the automobile and other highway sources are the major polluters in transportation in the Twin Cities.[17] They account for an estimated 97 percent of all CO emissions in the region, and a major share of the HC and NO_x emissions. Highways have a less significant effect in terms of particulates and SO_2. The Metro Council Air Quality Control Plan estimates that the region will achieve compliance with air quality standards by the late 1980s.

Aircraft are only one of several urban air pollution sources, and account for a relatively small proportion of pollution. The Air Quality Control Plan estimates that all aviation activities in the Metropolitan Area combined currently account for less than five percent of the CO, HC, and NO_x pollutants. "Consequently, regional aviation activities are not considered to be high priority air quality control targets."[18]

Impacts

Future emissions for each of the five air pollutants were calculated based on the forecast of future aviation demand contained in Chapter 4, and using EPA data on emission rates for aircraft.[19] Exhibit 7-11 shows total annual aircraft emissions by aircraft type, for each of the planning years. Exhibit 7-12, a summary of Exhibit 7-11, shows total annual aircraft emissions for the airport by planning year.

Exhibit 7-10

Minnesota and National Ambient Air Quality Standards

POLLUTANT/ AIR CONTAMINANT	CONCENTRATION	REMARKS
Carbon monoxide (CO) primary and secondary standards	10 mg/m^3	maximum 8 hr concentration not to be exceeded more than once per year
	35 mg/m^3	maximum 1 hr concentration not to be exceeded more than once per year
Nitrogen oxides (NO_x, NO_2) primary and secondary standards	100 $\mu g/m^3$	maximum annual arithmetic mean
Hydrocarbons (HC) primary and secondary standards	160 $\mu g/m^3$	maximum 3 hr concentration (6 to 9 a.m.) not to be exceeded more than once per year (corrected for methane)
Particulates primary standards	75 $\mu g/m^3$	maximum annual geometric mean
	260 $\mu g/m^3$	maximum 24 hr concentration not to be exceeded more than once per year
secondary standards	60 $\mu g/m^3$	maximum annual geometric mean
	150 $\mu g/m^3$	maximum 24 hr concentration not to be exceeded more than once per year
Sulfur Dioxide (SO_2) primary and secondary standards	60 $\mu g/m^3$	maximum annual arithmetic mean
	260 $\mu g/m^3$	maximum 24 hr concentration not to be exceeded more than once per year
	655 $\mu g/m^3$	maximum 3 hr concentration not to be exceeded more than once per year

Source: Minnesota Pollution Control Agency.
Note: Minnesota State and National (EPA) Standards are identical.

Exhibit 7-11

Annual Aircraft Emissions of Air Pollutants
by Aircraft Type
(metric tons)

Aircraft Type	Year	LTO Cycles	Particulates	SO_2	CO	HC	NO_x
D	1980	10,150	0.20	0.12	111.65	3.65	0.43
	1985	10,850	0.22	0.13	119.35	3.91	0.46
	1990	11,200	0.22	0.13	123.20	4.03	0.47
	2000	18,550	0.37	0.22	204.05	6.68	0.78
E	1980	113,050	1.13	0.68	621.78	20.35	2.37
	1985	127,050	1.27	0.73	698.78	22.87	2.67
	1990	141,050	1.41	0.85	775.78	25.39	2.96
	2000	191,800	1.92	1.15	1,054.90	34.52	4.03

Source: TRA Airport Consulting.

Exhibit 7-12

Total Annual Aircraft Emissions of Air Pollutants
All Aircraft Types
(metric tons)

Year	Particulates	SO_2	CO	HC	NO_x
1980	1.33	0.80	733.43	24.00	2.80
1985	1.48	0.86	818.13	26.77	3.12
1990	1.64	0.98	898.97	29.42	3.43
2000	2.29	1.37	1,258.95	41.20	4.80

Source: TRA Airport Consulting.

The purpose of the analysis is to determine the "worst case" conditions in each year, should any one of the alternatives be fully implemented. Therefore, the high forecast of aviation demand in Chapter 4 was assumed. The resulting emissions estimates represent maximum worst case conditions. It is likely that actual operations at the airport will be less than the high forecast level, and air pollutant emissions will also be less.

Aircraft air pollutant emission data and a "Box Model" methodology approved by the FAA were used to calculate air pollutant concentrations.[20] The computation method uses air pollutant emissions generated in a unit landing and take-off operation as the basic parameter for the calculations. This unit is called an LTO cycle. In general, one LTO cycle is equal to a landing and a take-off, or two operations. In this study, adjustments have been made in the conversion of operations into LTO cycles to account for the difference in pollutant emissions associated with itinerant operations and local (in particular touch-and-go training) operations.

The method assumes that all air pollutants will be distributed uniformly throughout a rectangular shaped "box" situated over the runways. A single concentration for each pollutant is then calculated.

The dimensions of the box are associated with each aircraft type. The length of the box is a typical distance between the points where aircraft descend through the mean mixing height above the runway on approach, and where aircraft ascend to the mean mixing height on departure.

The mixing height is defined as the height above the surface through which relatively vigorous vertical mixing of the atmosphere occurs. The mean annual mixing height in the Twin Cities is 1,173 meters.[21] A typical mixing height used in box model analyses is 1,100 meters, and was used for further analysis.

Assuming a box mixing height of 1,100 meters, general aviation piston-driven aircraft require a box length of approximately 27,600 meters, and

a standard box width of 1,600 meters. Exhibit 7-13 shows the closed box dimensions and volume assumed for this analysis.

Exhibit 7-13

Closed Box Dimensions and Mixing Volume
for General Aviation Piston-Driven Aircraft

Length	27,600 meters
Width	1,600 meters
Height	1,100 meters
Mixing Volume	48,600 x 10^6 cubic meters

Source: U.S. Environmental Protection Agency

Exhibit 7-14 shows emissions concentrations per LTO cycle for individual aircraft type. Exhibit 7-15 shows the peak hour LTO cycles forecast and the resultant concentrations for each pollutant. The results indicate that worst case peak hour emissions when the airport is fully developed in the year 2000 would result in minor concentrations of air pollutants, substantially below the national and state standards. Maximum concentrations in other time frames were therefore not calculated. It can be concluded that no air quality impacts would be associated with any of the three alternatives under study.

7.3 SOCIAL IMPACT PARAMETERS

7.3.1 Noise

Noise impact is the most significant impact to the surrounding community associated with airport development, and thus has received detailed analysis in this study.

Noise is sound energy transmitted through the air. Several physical characteristics of sound can be measured, including loudness, duration,

Exhibit 7-14

Emission Concentrations per LTO Cycle
(micrograms per cubic meter)

Aircraft Type	Particulates	SO_2	CO	HC	NO_x
D	0.0004	0.0002	0.0002	0.007	0.0009
E	0.0002	0.0001	0.0001	0.004	0.0005

Source: U.S. Environmental Protection Agency.

Exhibit 7-15

Peak Hour Concentrations - Year 2000
(micrograms per cubic meter)

Aircraft Type	LTO Cycles	Particulates	SO_2	CO	HC	NO_x
D	14	0.006	0.003	0.003	0.098	0.013
E	61	0.012	0.006	0.006	0.244	0.031
Total		0.018	0.009	0.009	0.342	0.044

Source: TRA Airport Consulting.

and frequency. While sound can be quantified, the impact resulting to people perceiving sound as noise cannot be so easily quantified. People vary in both their ability to hear noise, and their sensitivity to annoyance of a given noise or sound level. Individual attitudes regarding the noise source will influence feelings of whether a noise is positive or negative, or is an annoyance.

The variability in individual reaction to noise makes it difficult to predict accurately how any one person will respond to a given noise. However, when considering a larger community's exposure to noise, trends can be identified which relate noise to annoyance.

Several methodologies have been developed to model community noise exposure, by correlating a noise index with annoyance, considering either single-event exposure or cumulative exposure.

The methodology commonly used throughout the United States and currently approved by the FAA for use in airport planning is the Day-Night Sound Level (Ldn). The Ldn metric is a cumulative noise index in that it describes average total daily noise exposure. It considers the cumulative effects of all single events throughout a 24-hour day, based on forecasts of total annual operations.

The Ldn methodology was developed by the U.S. Environmental Protection Agency, and is designed to model the cumulative community noise exposure in the A-weighting that closely resembles the response characteristics of the human ear. It is based on another measure, the Equivalent Sound Level (Leq), but is weighted to account for quieter background noise levels from 10:00 p.m. to 7:00 a.m. by applying a 10-decibel penalty during those hours.

Baseline noise conditions at the airport can be recorded using single-event measures, and can be modeled using the Ldn cumulative noise metric. Exhibit 7-16 shows single-event noise levels measured at six locations off the end of each runway for single- and twin-engine aircraft, and for

Exhibit 7-16

Single-Event Noise Levels Measured at Anoka County-Blaine Airport
(August 1979 - dBA)

Monitor Location	Aircraft Type	L_{MAX} Range	Operation
1	Single-engine	60 - 71	Approach
2	Single-engine	57 - 89	Approach
	Twin-engine	92	Approach
3	Single-engine	73	Approach
	Single-engine	71 - 90	Departure
	Twin-engine	91 - 92	Departure
	Business jet	86	Departure
	Single-engine	57 - 98	Sideline
	Twin-engine	63 - 86	Sideline
4	Single-engine	75 - 103	Departure
	Twin-engine	94	Departure
5	Single-engine	61 - 90	Approach
	Twin-engine	75 - 89	Approach
	Business jet	82	Approach
	Single-engine	62 - 83	Departure
	Twin-engine	89	Departure
6	Single-engine	64 - 82	Departure
	Twin-engine	78	Departure

Source: The Parry Company

a business jet currently based at the airport. Each of the six locations is shown on Exhibit 7-17.

It can be seen that twin-engine aircraft on departure exhibited the highest single-event noise levels of any aircraft type, with maximum noise levels ranging from 63 to 94 dBA, depending on location.

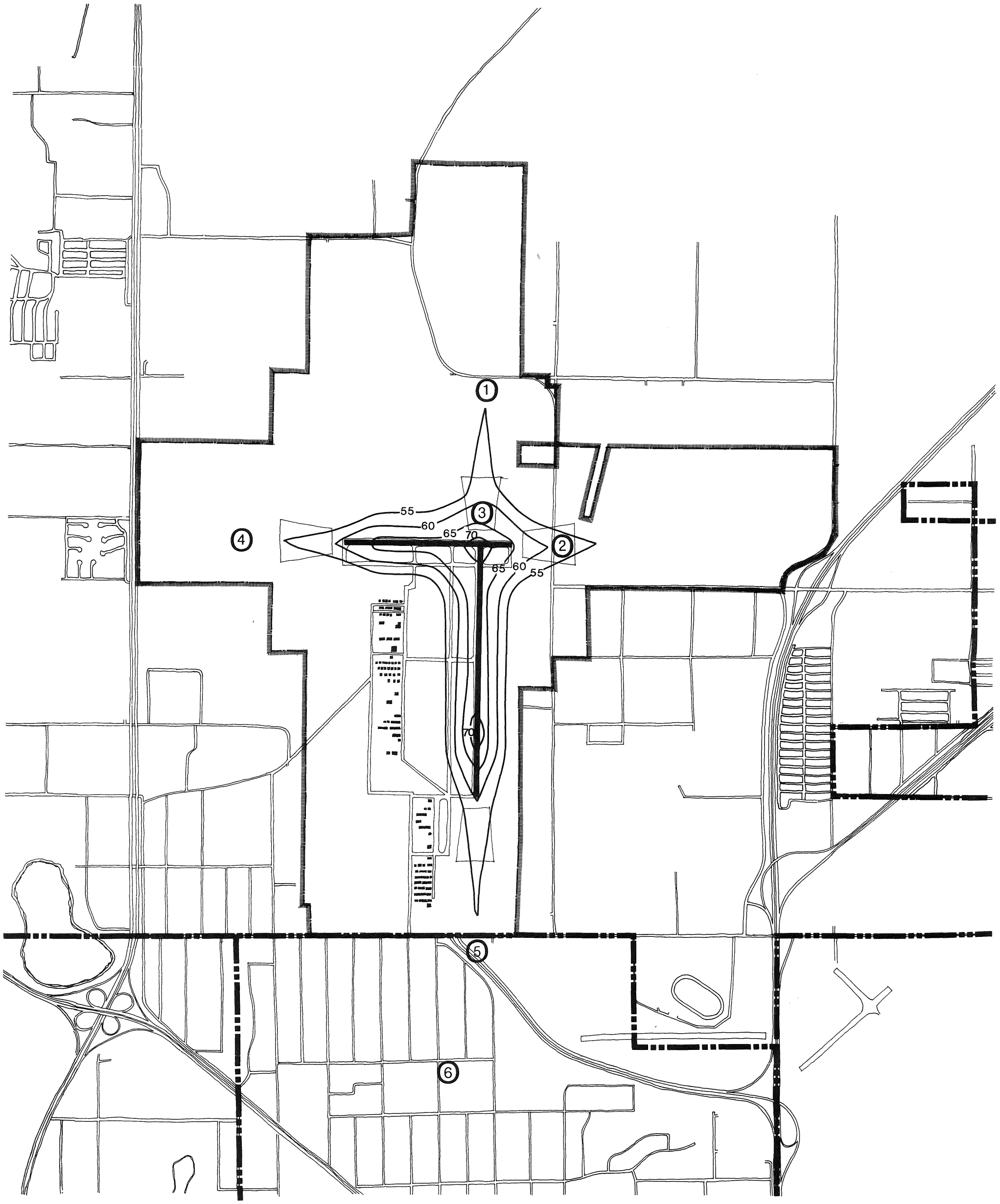
Utilizing historical data on airport operations by aircraft type, Ldn contours were modeled for the existing airport traffic on the existing runway layout, and are shown on Exhibit 7-17.

At present, cumulative noise exposure above Ldn 55 is entirely contained on airport property. As discussed in the following Land Use Compatibility section, only noise exposure above Ldn 65 is considered by the FAA guidelines to be significant. Thus, according to the guidelines, the existing airport configuration and level of operation are compatible with surrounding land use. However, single aircraft operations can and do cause higher single-event dBA noise levels to adjacent off-airport land, as shown in Exhibit 7-16.

Impact

The Ldn methodology was used to project future noise exposure conditions for each alternative in the year 2000, based on forecast levels of aviation activity included in Chapter 4. Noise exposure contours for Alternative A are shown in Exhibit 7-19, for Alternative B in Exhibit 7-20, and for Alternative C in Exhibit 7-21. As a point of comparison, noise exposure contours were calculated for the existing runway configuration, assuming it would be allowed to reach capacity. (See Exhibit 7-18.)

The analysis indicates that even when fully developed in the year 2000, noise exposure above Ldn 60 would be entirely contained on the airport property for all alternatives. Noise contours in the intervening years would be smaller in areal extent. Since the FAA planning guidelines recognize Ldn 65 as the threshold of significance for airport planning



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

Ldn 55 Contour off Airport

① Noise monitering location
August 1979

NOTE : See Exhibit 7-16
for noise levels

N

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Anoka County Minnesota
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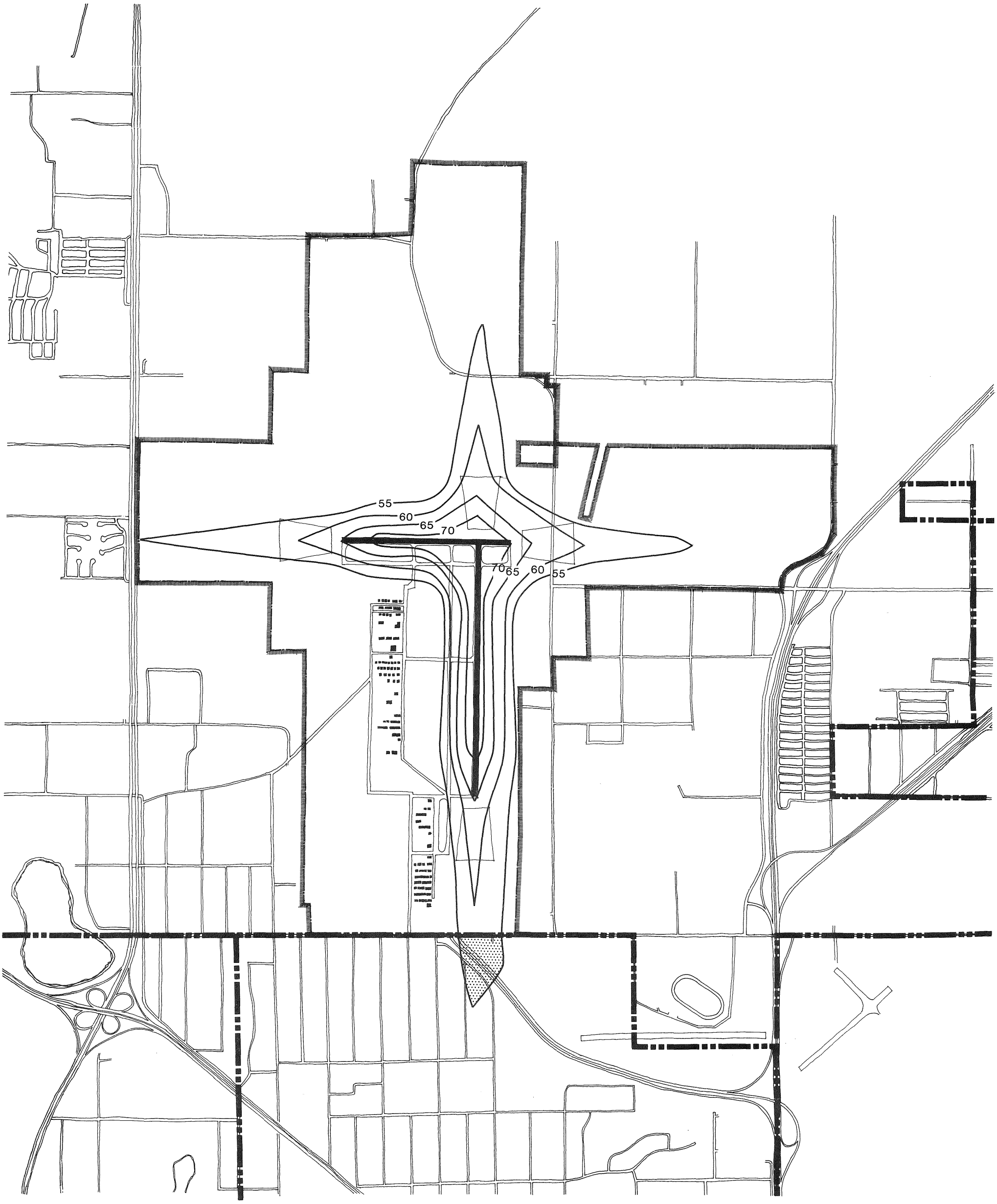
feet
0 400 800 1600 2400
miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

EXISTING NOISE CONTOURS

YEAR 1980 Exhibit 7-17



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

Ldn 55 Contour off Airport

N

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Anoka County Minnesota

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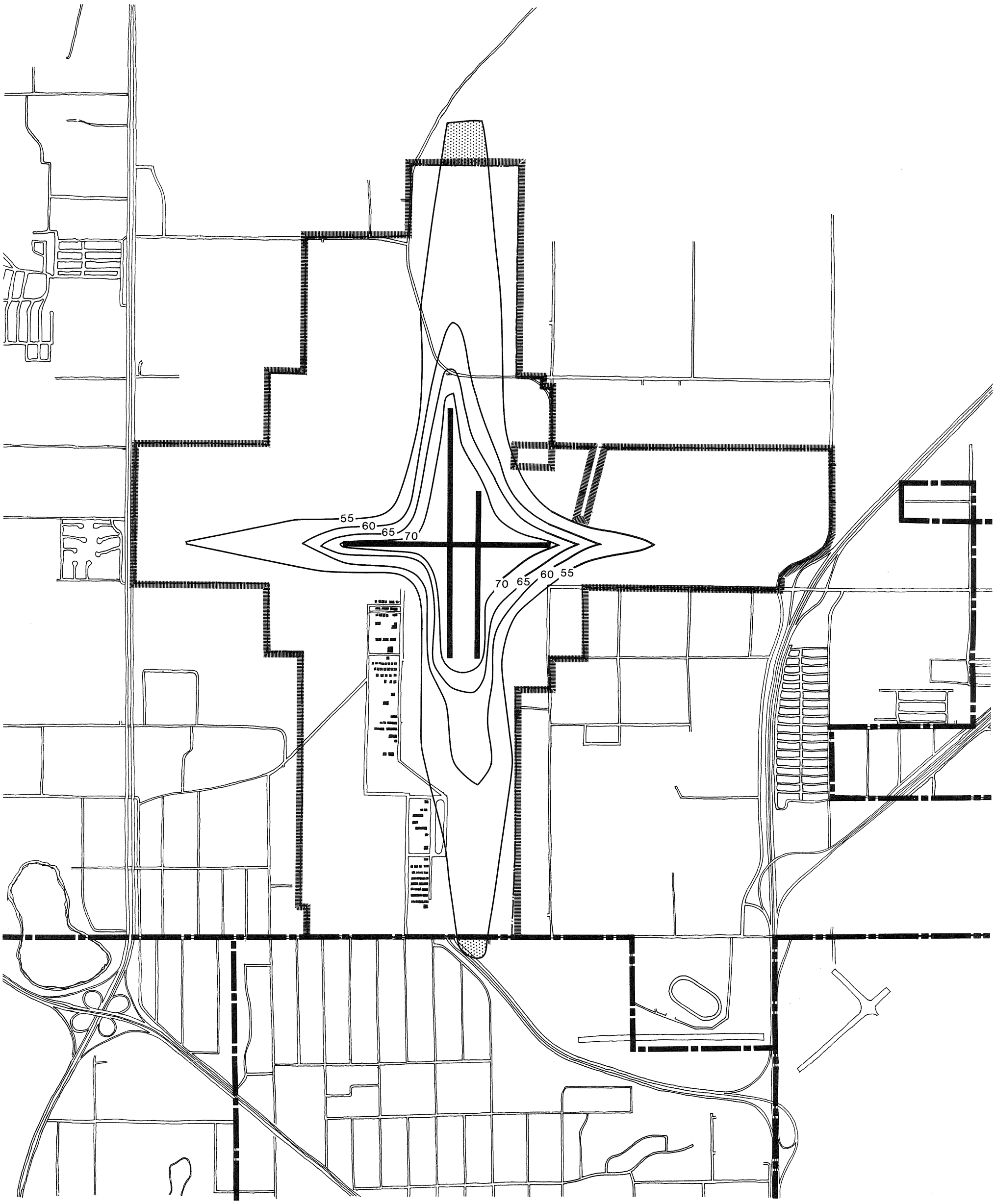
feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

NOISE CONTOURS EXISTING RUNWAY LAYOUT - AT CAPACITY

Exhibit 7-18



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

Ldn 55 Contour off Airport

N

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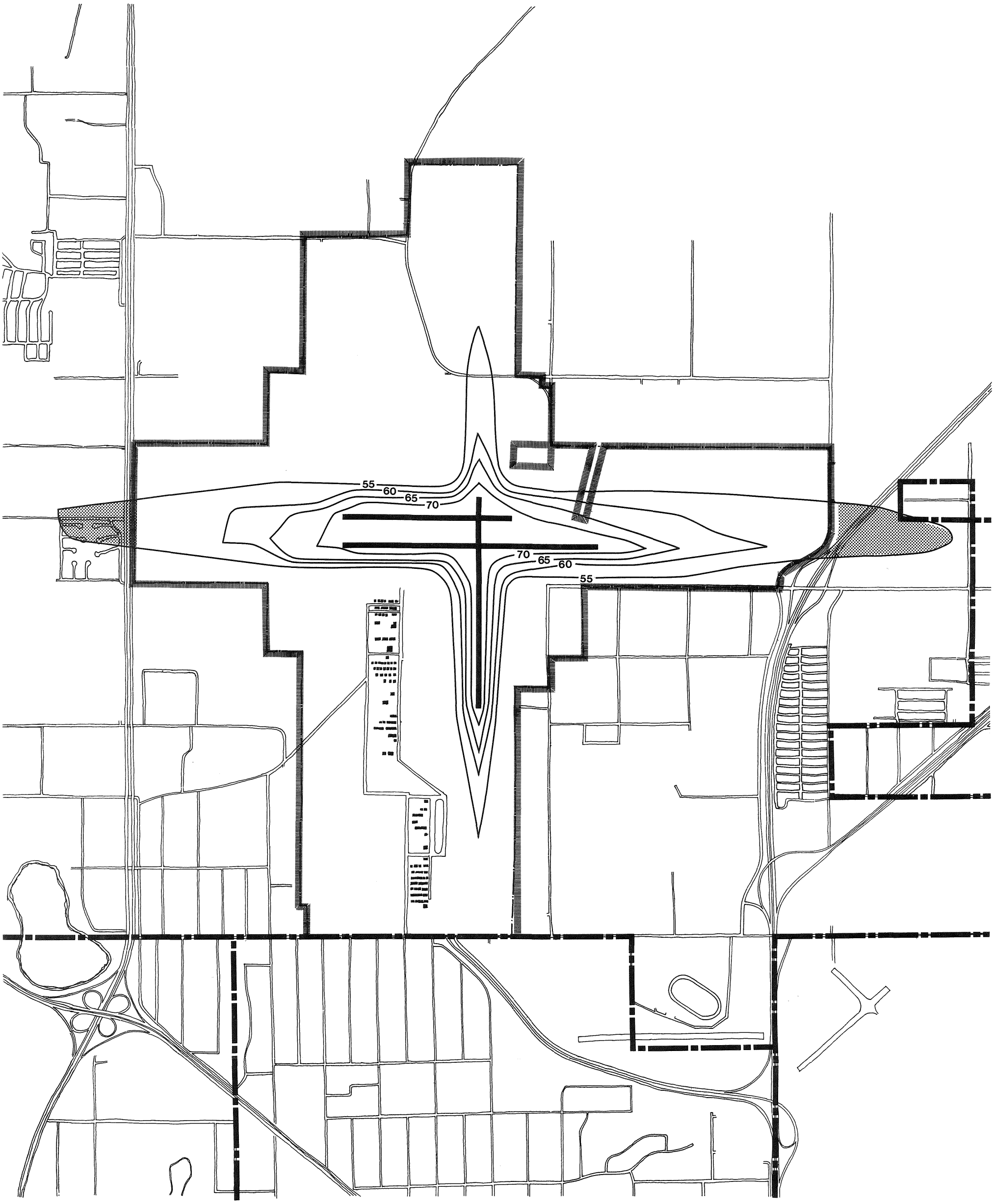
feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

NOISE CONTOURS ALTERNATIVE A

Exhibit 7-19



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

Ldn 55 Contour off Airport

N

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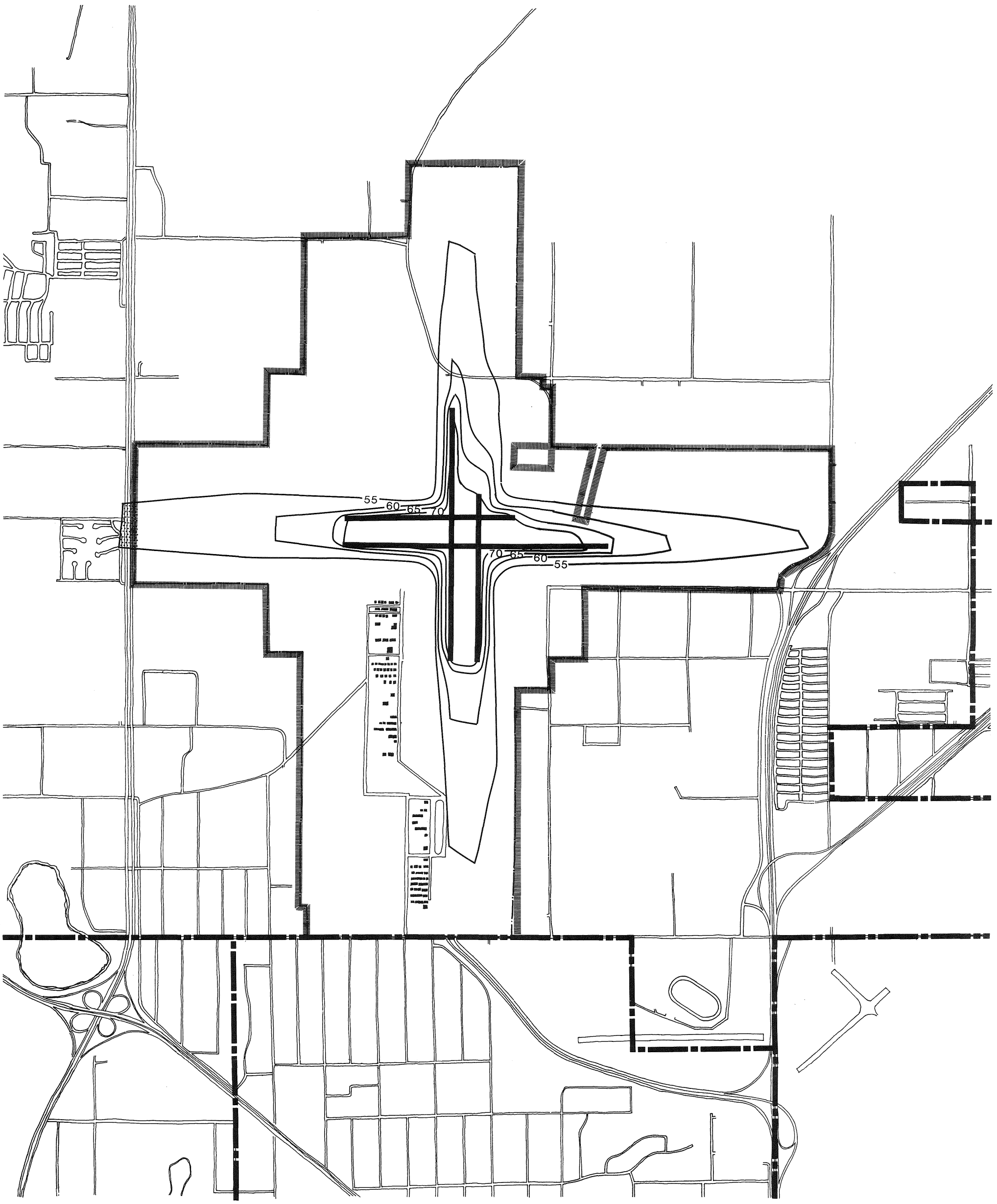
feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

NOISE CONTOURS ALTERNATIVE B

Exhibit 7-20



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

Ldn 55 Contour off Airport

N

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Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400

miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

NOISE CONTOURS ALTERNATIVE C

Exhibit 7-21

purposes, any of the three alternatives would be acceptable from a noise exposure standpoint. However, there are major differences between the alternatives in the pattern of noise exposure to communities adjacent to the airport.

At any airport, several factors affect community noise exposure. First, different aircraft types generate different noise emission levels, depending upon their number and kind of engines. By analyzing the total level of operations and the fleet mix of aircraft types forecast to use the airport, an overall profile of noise emissions can be gained. The primary factor determining the noise exposure pattern then becomes the distribution of aircraft between runways.

Wind conditions dictate that every airport have a primary operating direction, in which the primary runway is oriented. If crosswinds occur a significant portion of the time, a crosswind runway is also necessary.

At Anoka County-Blaine Airport existing Runway 17-35 is considered the primary runway and Runway 8-26 the crosswind. However, the predominant wind direction is on a northwest-southeast axis. Thus, with adequate runway lengths, the airport could designate a primary operational direction in either the north-south orientation or the east-west orientation.

Under normal conditions all aircraft operations (take-offs and landings) will occur on the primary runway with the crosswind runway used only under crosswind conditions. Thus, the majority of aircraft operations will be concentrated in the primary operating direction, and cumulative noise exposure off the runway ends will be greatest in that direction.

The primary operating condition for Alternative A would be in the north-south direction, and for Alternative B in the east-west direction. Thus, while total noise emissions would be the same for either alternative, Alternative A would largely concentrate noise exposure in the north-south direction, while Alternative B would concentrate noise exposure in the east-west operating direction.

For Alternative A, the Ldn 55 noise contour would extend off the airport property to the south approximately 400 feet, over the relocated segment of Highway 10. (See Exhibit 7-19.) By comparison, if the existing airport configuration is allowed to reach capacity, the Ldn 55 noise contour would extend off the airport property to the south approximately 1,400 feet, over several residences in Mounds View (see Exhibit 7-18). The reason for the difference is that the southern runway thresholds in Alternative A would be relocated 2,655 feet northward from the threshold of the existing configuration. The Ldn 55 contour would extend off the northern boundary of the airport property approximately 1,000 feet, over vacant pasture land, in Alternative A.

Alternative B would have its primary operating direction east-west and would concentrate noise exposure in that direction. At full development in the year 2000, the Ldn 55 noise contour would extend off the western airport property boundary approximately 1,600 feet, partially over an existing high-density mobile home park and partially over currently vacant land, a portion of which is zoned for high-density residential and a portion for industry.

The Ldn 55 contour would extend off the eastern airport boundary approximately 1,300 feet over Highway I-35 and currently vacant land zoned for industry, and near an existing low-density residential area. (See Exhibit 7-20.)

Alternative C was developed in a direct attempt to define an airport configuration which would minimize exposure of the surrounding community to aircraft noise. The important factor in operation of the airport so that community exposure to aircraft noise is kept to a minimum is flexibility. That is, the airport must have the ability to change the direction of flight operations. If an airport is flexible, then noise exposure can be spread.

At Anoka County-Blaine Airport, predominant wind conditions permit such flexibility to be achieved by allowing the airport's primary runway to

operate in either the north-south or east-west orientation. If both orientations had equal runway length and operating capacity, the airport would be able to change operating directions. This would reduce community exposure to aircraft noise without reducing capacity or causing any compromise in flight safety.

The projections of noise exposure for Alternative C using the Ldn metric bear out this hypothesis. As Exhibit 7-21 shows, distributing total aircraft operations in both operating directions, rather than concentrating all traffic in one direction as do Alternatives A and B, reduces cumulative noise exposure in both directions. When Alternative C is fully developed in the year 2000, all noise exposure above Ldn 55 would be contained on existing airport property, except to the west, where the Ldn 55 contour would extend off airport property approximately 400 feet over Highway 65.

In summary, all three alternatives when fully developed in the year 2000 would produce community noise exposure patterns within acceptable limits according to the FAA planning guidelines. Alternative A would result in the greatest cumulative noise level off the airport property to the south, but would produce a lower noise level than if the existing airport configuration were allowed to remain and reach capacity.

Alternative B when fully developed in the year 2000 would produce the highest cumulative noise levels off the airport property to both the east and west, and would produce a noise exposure pattern to the north and south approximately the same as exists today.

Alternative C when fully developed in the year 2000 would reduce cumulative noise exposure in both operating directions by distributing an equal amount of traffic to both directions.

7.3 SENSITIVE RECEPTORS AND SPECIAL SITES

Noise-sensitive receptors are hospitals, long-term patient care facilities, and schools. Special sites are existing public parks, recreation areas, historic and archaeological sites, and other areas of natural, scenic, or recreational value that are of recognized significance.

Noise-sensitive receptors are to be given consideration in airport land use compatibility planning.[23] Special sites cannot be acquired for airport use unless no feasible and prudent alternatives exist, as required by Section 4(f), Department of Transportation Act.[24] None of the development alternatives proposes affecting either sensitive receptors or special sites.

Sensitive receptors in the airport vicinity are listed in Exhibit 7-22, and their locations are shown on Exhibit 7-23. The locations of all special sites are shown on Exhibit 7-24.

Only one hospital and six long-term patient care facilities exist in the airport vicinity. Unity Hospital is located approximately 2.3 miles southwest of the airport, in the city of Fridley. The long-term care facility nearest to the airport is the Fridley Convalescent Home, located approximately two miles southwest of the airport, near Unity Hospital.[25] Neither the hospital nor the convalescent home are located under the normal flight pattern for itinerant or local aircraft and do not normally experience overflights by aircraft using Anoka County-Blaine Airport. The five other long-term care facilities within the airport vicinity are all located over four miles to the south and to the west of the airport.

The airport vicinity is divided by six school districts.[26] Within the vicinity of the airport shown on Exhibit 7-23, there are 41 public schools and 3 private schools. Exhibit 7-22 lists them. Most of these schools are a considerable distance from the airport and are not under the local flight tracks. For most, existing noise levels from aircraft are low.

Exhibit 7-22

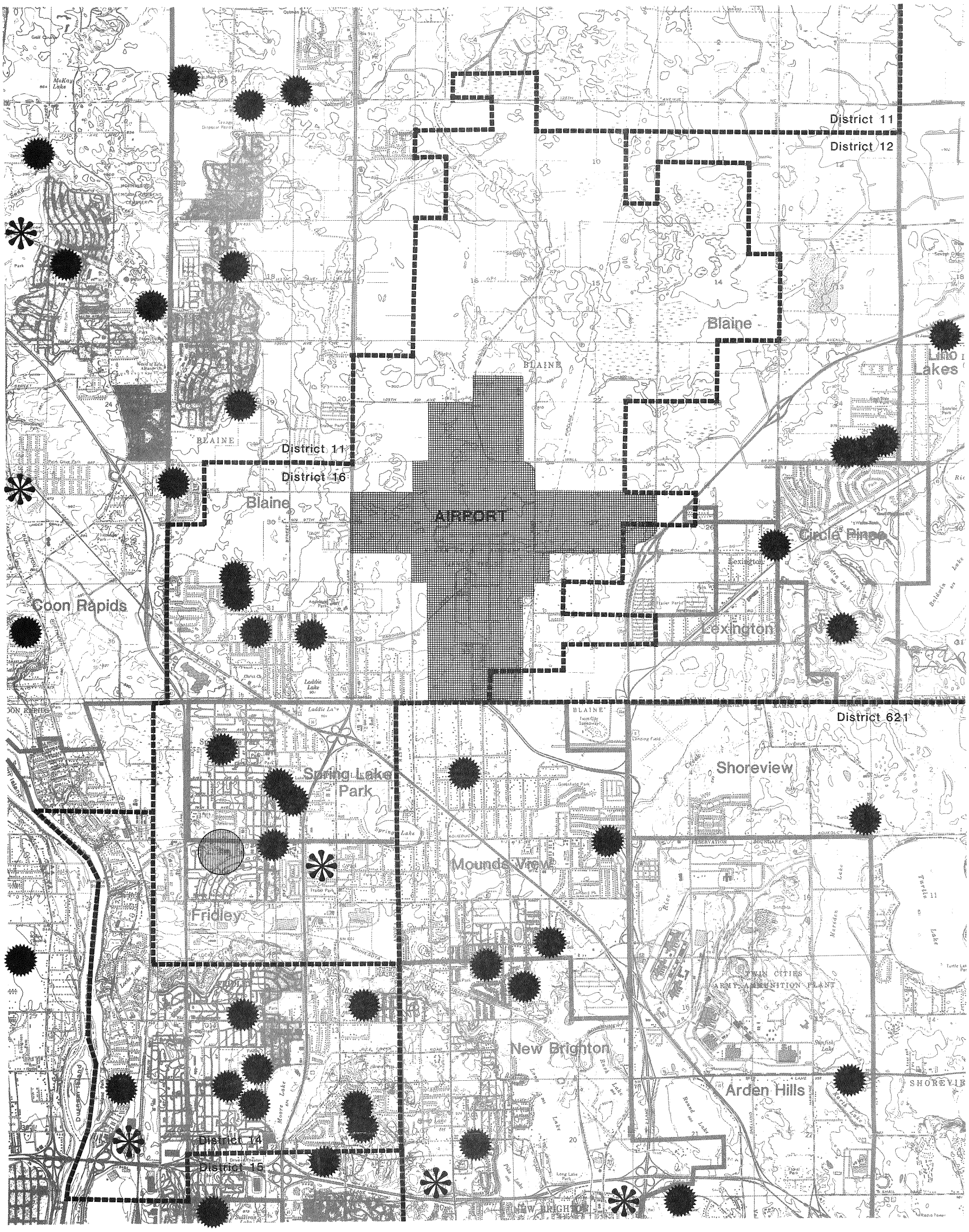
Sensitive Receptors within the Airport Vicinity

Receptor	Location	Distance from Nearest Existing Runway End in Miles	
HOSPITALS:			
Unity Hospital	Osborne Road, Fridley	2.3	SW
LONG-TERM CARE FACILITIES:			
Fridley Convalescent Home	Lyric Lane NE, Fridley	2.1	SW
Lynwood Manor II, Inc.	River Road, Fridley	5.0	SW
Innsbruck Nursing Home	Highway 694, New Brighton	4.3	S
New Brighton Care Center	8th St. NW, New Brighton	4.6	S
Camilia Rose Convalescent Center	Xeon St., Coon Rapids	4.5	W
Park River Estates Care Center	98th Ave. NW, Coon Rapids	4.0	W
SCHOOLS:			
Anoka-Hennepin School District No. 11			
Blaine High	Highway 242, Blaine	4.5	NW
Northdale Junior High	Highway 242, Blaine	4.1	NW
Johnsville Elementary	125th Ave. NE, Blaine	4.0	NW
Jefferson Elementary	NE Jefferson, Blaine	2.8	NW
Madison Elementary	NE Territorial Road, Blaine	2.0	NW
University Ave. Elementary	University Ave. NE, Blaine	2.3	W
Sand Creek Elementary	Olive, Coon Rapids	4.5	NW
Northdale Elementary	Northdale, Coon Rapids	3.8	NW
Eisenhower Elementary	Northdale, Coon Rapids	3.0	NW
Adams Elementary	89th Ave. NW, Coon Rapids	3.5	W
Monroe Elementary	Brookdale Dr., Brooklyn Park	4.8	SW
Centennial School District No. 12			
Centennial Senior-Junior High	101st Lane, Blaine	3.0	E
Centennial Elementary	101st Lane, Blaine	3.0	E
Golden Lake Elementary	Golden Lake Rd., Circle Pines	2.8	E
Lovell Elementary	Lovell Rd., Lexington	2.1	E
Columbia Heights School District No. 13			
Nelson Elementary	5th St., Columbia Heights	5.3	SW
North Park Elementary	NE Fillmore, Fridley	4.6	SW

Exhibit 7-22
(continued)

Receptor	Location	Distance from Nearest Existing Runway End in Miles	
Fridley School District No. 14			
Fridley Senior High	W. Moore Lake, Fridley	4.3	SW
Fridley Junior High	W. Moore Lake, Fridley	4.0	SW
Hayes Elemetary	NE Mississippi, Fridley	3.7	SW
Rice Creek Elementary	NE Arthur, Fridley	3.2	SW
Stevenson Elementary	E. River Road, Fridley	4.8	SW
Parkview Elementary	61st Ave. NE, Fridley	4.4	SW
Gardenia Elementary	59th Ave. NE, Fridley	4.0	SW
Grace High	59th Ave. NE, Fridley	4.0	SW
Riverwood Elementary	E. River Road, Fridley	3.9	SW
Spring Lake Park School District No. 16			
Spring Lake Park Sen. High	Highway 65, Spring Lake Park	2.2	SW
Kenneth Hall Elementary	NE Able, Spring Lake Park	2.2	SW
Westwood Junior High	91st Ave. NE, Blaine	1.7	W
Westwood Elementary	91st Ave. NE, Blaine	1.7	W
Blaine Elementary	89th Ave. NE, Blaine	1.3	W
Park Terrace Elementary	NE Terrace Rd., Spring Lake Park	2.5	SW
Woodcrest Elementary	Osborne Rd., Fridley	2.5	SW
Mounds View School District No. 621			
Red Oak Elementary	Red Oak Dr., Mounds View	1.2	S
Pinewood Elementary	Quincy, Mounds View	1.9	SE
Edgewood Junior High	Edgewood Dr., Mounds View	2.5	S
Sunnyside Elementary	County Rd. H, New Brighton	2.7	S
Irondale Senior High	Long Lake Rd., New Brighton	2.8	S
Pine Lake Elementary	14th St., New Brighton	4.2	S
Mounds View Senior High	County Rd. F, Arden Hills	4.8	SE
Turtle Lake Elementary	W. County Rd. I, Shoreview	3.3	E
Private Schools			
St. Timothy School	89th Ave. NE, Blaine	1.7	W
St. Josephs School	109th Ave. NE, Lino Lakes	3.9	NE
St. John the Baptist School	County Rd. F, New Brighton	4.7	S

Sources: Metropolitan Council of the Twin Cities Area, "Schools and School Districts - 1979," Publication No. 08-79-018, and U.S.G.S. 7.5 Minute Quadrangle Series Maps.



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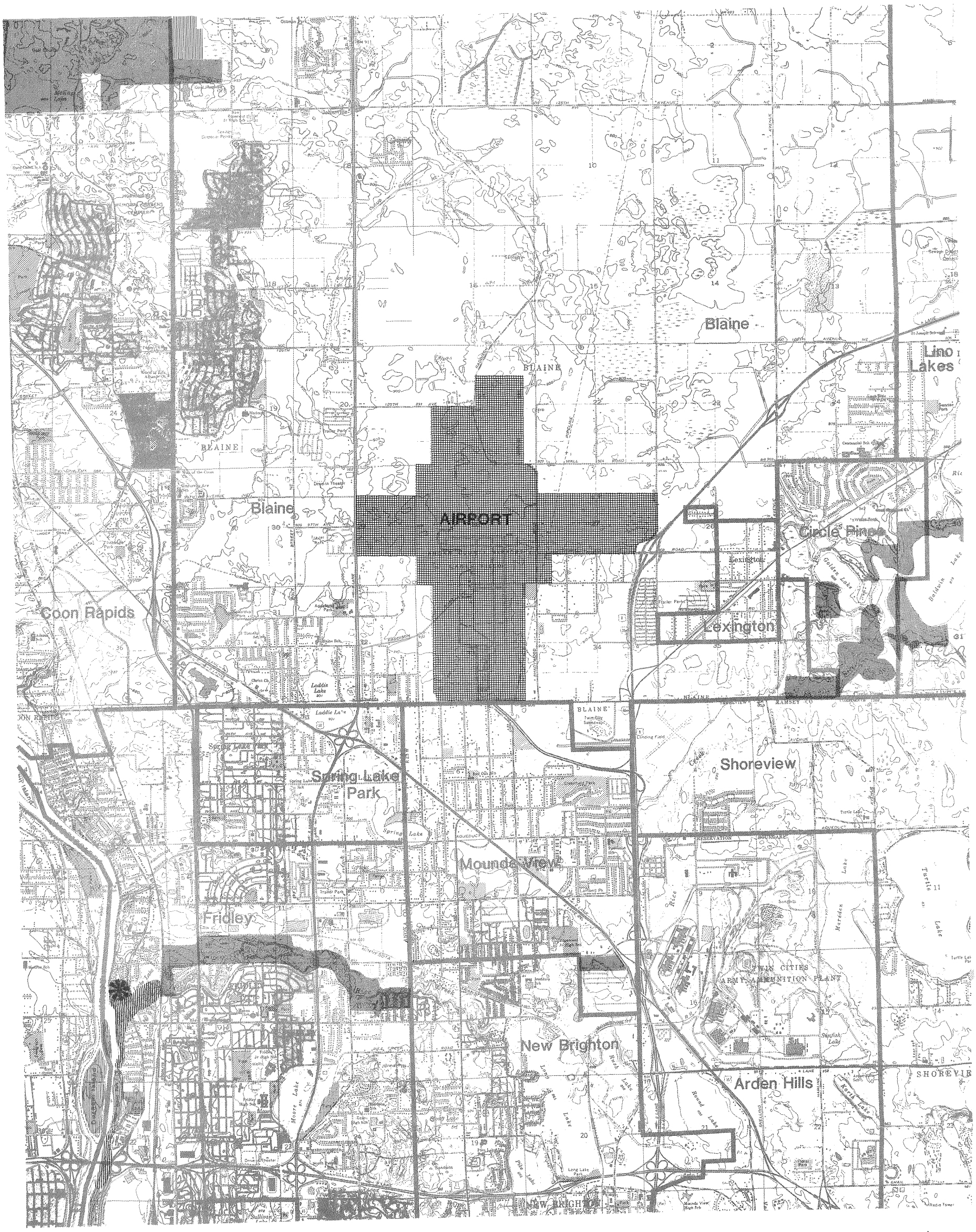
feet in thousands
0 1 2 3 5
miles
0 1/4 1/2 3/4 1

acres
160
40
10

NOISE - SENSITIVE RECEPTORS

Exhibit 7-23



Existing City Park

Existing County Park

Proposed County Park

Proposed Co. Scenic Easement

Airport

National Register Historic Site
Cassius M. Locke House

N

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Anoka County Minnesota
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feet in thousands
0 1 2 3 5
miles
0 1/4 1/2 3/4 1

acres
160
40
10

SPECIAL SITES

Exhibit 7-24

Red Oak Elementary in Mounds View is the closest school to an existing runway end. It is approximately 1.2 miles south of the southern threshold of Runway 17-35, and is located approximately one-third of a mile west of the southern approach and departure path from the runway.

Blaine Elementary School is the second closest school to an end of an existing runway. The school has been closed and presently serves as a County Achievement Development Center. The school building is located on 89th Avenue Northeast in Blaine, approximately 1.3 miles southwest of the west threshold of Runway 8-26, and approximately 1.5 miles west of the southern threshold of Runway 17-35. Blaine Elementary is also several hundred yards west of the commonly used downwind leg of the local approach pattern for Runway 35, and may currently experience occasional overflights.

Four public schools and one private school are between 1.5 and 2 miles from the end of an existing runway. The schools are Westwood Junior High, Westwood Elementary, Madison Elementary, and St. Timothy School (a private school not presently functioning as a school), all in Blaine; and Pinewood Elementary in Mounds View. However, none are in the direct flight path for local or itinerant approaches to the airport. The remainder of the schools within the airport vicinity are all beyond 2 miles from the ends of the existing runways and are not under local flight paths.

Numerous city parks considered to be special sites exist in the vicinity of the airport. The nearest is a small playfield called Airport Park along Xylite Street on the eastern portion of the airport. Xylite Park, a small playground, is nearby. A triangularshaped neighborhood park is 1,000 feet south of the airport property along Long Lake Road in Mounds View, and is directly south of Runway 17-35. Several other Mounds View city parks also exist in this general vicinity.

Other special sites in the vicinity include existing and proposed county parks, a proposed county scenic easement, a national register historic

site in Fridley, and four general areas of recognized prehistoric archaeological value.

Exhibit 7-24 shows the location of special sites in the airport vicinity.

Impacts

The Unity Hospital and the six long-term care facilities in the airport vicinity will not be affected by any of the three alternatives, because of their distance from the airport.

None of the schools in the airport vicinity fall within the Ldn 55 or above noise contours. Thus, according to FAA guidelines, no significant impacts to noise-sensitive receptors will occur. However, Alternatives A and B contain a set of parallel runways in only one direction, and will concentrate aircraft traffic and noise on either end of those parallel runways. While projected cumulative noise levels would be within acceptable limits, aircraft activity and noise would be concentrated near different schools for each alternative.

Alternative A would concentrate operations in a north-south corridor, with southern approaches and take-offs passing overhead east of Red Oak Elementary in Mounds View. Red Oak Elementary and Blaine Elementary both border the common base leg and downwind flight path corridor for local approaches to Runway 35. Overflights of these schools can be avoided by designating flight patterns for local operations on each runway.

Alternative B would concentrate operations in an east-west corridor. Straight in and out operations east of the airport would pass overhead of Lovell Elementary in Lexington, approximately two miles east of the runway threshold. Straight in and out operations west of the airport would not overfly any school, and would pass general corridor south of University Avenue Elementary and north of Westwood Junior High and Westwood Elementary. Local flight patterns could be designated north of the airport and thereby avoid overflights near any existing schools.

Alternative C offers the best opportunity to distribute aircraft operations in both operational orientations so as to not concentrate noise exposure in any one direction. Flight patterns associated with each orientation would be similar to those for Alternatives A and B. Alternative C would decrease the total amount of time any one runway is in use, thereby decreasing cumulative noise exposure in any one direction.

The only special site to fall near the boundary of the Ldn 55 to 65 noise contours for any alternative is the triangular city park on Long Lake Road in Mounds View. According to FAA guidelines, parks and recreational activities are acceptable within the Ldn 55 to 65 noise exposure area. Thus, the noise exposure at this park is considered acceptable. However, Alternative A would cause a higher noise level at this park than would either of the other alternatives.

None of the alternatives will affect recognized historic or archaeological resources.[27]

7.3.3 Land Use Compatibility

Land Use Compatibility Guidelines

In 1976 the U.S. Department of Transportation and the FAA jointly issued a policy for the abatement of aviation noise.[28] The policy recognizes the need for coordinated efforts to reduce airport noise and delineates responsibilities to four major actors: the FAA, air carriers and aircraft operators, airport operators, and local communities adjacent to airports.

Airport noise impact can be reduced by three general categories of actions. They are: (1) controlling noise emissions at the source (the aircraft), (2) controlling flight operational procedures at airports to reduce noise exposure over populated areas, and (3) controlling urban development and land use around airports to minimize conflict with noise-sensitive land uses.

As an airport operator, the MAC can take actions in the latter two categories to reduce community noise exposure. Such actions include improving airport design, developing noise abatement plans and adopting noise abatement ground procedures, acquiring land easements or other rights, and controlling airport operations.

In addition to these direct actions to reduce noise exposure, airport operators can also cooperate with local government to develop land use plans, zoning, and other land use controls to insure that future land use around airports will be compatible with expected noise exposure levels.

As discussed in the following section on zoning compatibility, Minnesota makes provision for special zoning controls around airports which, together with airport master planning and community land use planning, can insure future compatible development.

Determining compatible land use depends on the pattern of noise exposure expected from airport operations. It is appropriate for the airport operator to determine where land use compatibility conflicts may occur, and work with local government to plan for compatibility. Control of off-airport land use is outside the authority of the MAC, and is the responsibility of local government.

The FAA has developed guidelines for compatible land use planning in the vicinity of airports.[29] Local governments and airport operators can voluntarily apply the generalized guidelines to specific airports to determine land use compatibility.

The FAA guidelines categorize the airport and adjacent land into four "Land Use Guidance Zones" (LUG zones), depending on the projected noise exposure level. LUG zones within which each specific land use is compatible are identified and conditions where compatibility controls should be applied are suggested. Exhibit 7-25 indicates how LUG zones are identified, and Exhibit 7-26 shows the FAA suggested assignment of land uses to LUG zones.

Exhibit 7-25

Land Use Guidance Chart I: Airport Noise Interpolation

Land Use Guidance Zones (LUG)	Noise Exposure Class	Ldn Day-Night Average Sound Level	Suggested Noise Controls
A	Minimal Exposure	0 to 55	Normally requires no special considerations
B	Moderate Exposure	55 to 65	Land use controls should be considered
C	Significant Exposure	65 to 75	Noise easements, land use, and other compatibility controls recommended
D	Severe Exposure	75 & higher	Containment within airport boundary or use of positive compatibility controls recommended

Source: FAA Advisory Circular 150/5050-6.

Exhibit 7-26

Land Use Guidance Chart II: Land Use Noise Sensitivity Interpolation

LAND USE		LUG ZONE[1]		LAND USE		LUG ZONE[1]		LAND USE		LUG ZONE[1]	
SLUCM NO.	NAME	SUG-GESTED	STUDY	SLUCM NO.	NAME	SUG-GESTED	STUDY	SLUCM NO.	NAME	SUG-GESTED	STUDY
10	Residential.	A-B		30	Manufacturing (continued).[2]			60	Services.[4]		
11	Household units.			31	Rubber and miscellaneous plastic products—manufacturing.	C-D		61	Finance, insurance, and real estate services.	B	
11,11	Single units—detached.	A		32	Stone, clay, and glass products—manufacturing.	C-D		62	Personal services.	B	
11,12	Single units—semiattached.	A		33	Primary metal industries.	D		63	Business services.	B	
11,13	Single units—attached row.	B		34	Fabricated metal products—manufacturing.	D		64	Repair services.	C	
11,21	Two units—side-by-side.	A		35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks—manufacturing.	B		65	Professional services.	B-C	
11,22	Two units—one above the other.	A		39	Miscellaneous manufacturing.	C-D		66	Contract construction services.	C	
11,31	Apartments—walk up.	B						67	Governmental services.	B	
11,32	Apartments—elevator.	B-C		40	Transportation, communication, and utilities.			68	Educational services.	A-B	
12	Group quarters.	A-B						69	Miscellaneous services.	A-C	
13	Residential hotels.	B		41	Railroad, rapid rail transit, and street railway transportation.	D		70	Cultural, entertainment, and recreational.		
14	Mobile home parks or courts.	A		42	Motor vehicle transportation.	D		71	Cultural activities and nature exhibitions.	A	
15	Transient lodgings.	C		43	Aircraft transportation.	D		72	Public assembly.	A	
19	Other residential.	A-C		44	Marine craft transportation.	D		73	Amusements.	C	
20	Manufacturing.[2]	C-D		45	Highway and street right-of-way.	D		74	Recreational activities.[5]	B-C	
21	Food and kindred products—manufacturing.	C-D		46	Automobile parking.	D		75	Resorts and group camps.	A	
22	Textile mill products—manufacturing.	C-D		47	Communication.	A-D		76	Parks.	A-C	
23	Apparel and other finished products made from fabrics, leather, and similar materials—manufacturing.	C-D		48	Utilities.	D		79	Other cultural, entertainment, and recreational.[5]	A-B	
24	Lumber and wood products (except furniture)—manufacturing.	C-D		49	Other transportation, communication, and utilities.	A-D		80	Resource production and extraction.		
25	Furniture and fixtures—manufacturing.	C-D		50	Trade.[4]			81	Agriculture.	C-D	
26	Paper and allied products—manufacturing.	C-D		51	Wholesale trade.	C-D		82	Agricultural related activities.	C-D	
27	Printing, publishing, and allied industries.	C-D		52	Retail trade—building materials, hardware, and farm equipment.	C		83	Forestry activities and related services.	D	
28	Chemicals and allied products—manufacturing.	C-D		53	Retail trade—general merchandise.	C		84	Fishing activities and related services.	D	
29	Petroleum refining and related industries.[3]	C-D		54	Retail trade—food.	C		85	Mining activities and related services.	D	
				55	Retail trade—automotive, marine craft, aircraft, and accessories.	C		89	Other resource production and extraction.	C-D	
				56	Retail trade—apparel and accessories.	C		90	Undeveloped land and water areas.		
				57	Retail trade—furniture, home furnishings, and equipment.	C		91	Undeveloped and unused land area (excluding noncommercial forest development).	D	
				59	Retail trade—eating and drinking. Other retail trade.	C-D		92	Noncommercial forest development.	D	
								93	Water areas.	A-D	
								94	Vacant floor area.	A-D	
								95	Under construction.	A-D	
								99	Other undeveloped land and water areas.	A-D	

1. REFER TO LAND USE GUIDANCE CHART I, PAGE 12.
2. ZONE "C" SUGGESTED MAXIMUM EXCEPT WHERE EXCEEDED BY SELF GENERATED NOISE.
3. ZONE "D" FOR NOISE PURPOSES; OBSERVE NORMAL HAZARD PRECAUTIONS.
4. IF ACTIVITY IS NOT IN SUBSTANTIAL, AIR-CONDITIONED BUILDING, GO TO NEXT HIGHER ZONE.
5. REQUIREMENTS LIKELY TO VARY — INDIVIDUAL APPRAISAL RECOMMENDED.

SLUCM: STANDARD LAND USE CODING MANUAL, SEE PARAGRAPH 21

Source: FAA Advisory Circular 150/5050-6.

Existing Land Use

Anoka County-Blaine Airport is located entirely in the city of Blaine, and borders the city of Mounds View to the south. Blaine is among the northern suburbs of the Twin Cities Metropolitan Area, currently one of the most rapidly urbanizing portions of the entire region. As discussed in Chapter 3, rural open space land is being converted to more intense urban uses throughout the northern suburbs.[30]

According to the City of Blaine comprehensive plan, the greatest increase in urban land use during the past decade was for single-family residential, commercial, and institutional land uses.[31]

Existing land use adjacent to the airport within the cities of Blaine and Mounds View includes low and medium-density residential, commercial, industrial, park land, agricultural land, and vacant land. Exhibit 7-27 shows the existing land use pattern surrounding the airport.[32] Heavily developed low-density residential areas exist south of the airport in Mounds View, to the west and southwest in the cities of Blaine and Spring Lake Park, and to the east in Blaine, in the community of Lexington, and the City of Circle Pines. The area to the north of the airport is largely undeveloped, with isolated single-family residential and light industrial land uses.

Future Land Use

Planning for future land use and provision of public services within the Twin Cities Metropolitan Area is a responsibility shared by Metro Council and the individual cities, under the 1976 Metropolitan Land Planning Act.[33]

Metro Council has prepared a Metropolitan Development Guide for the metropolitan area including a "Development Framework Plan."[34] The plan includes the delineation of a "Metropolitan Urban Service Area Line" (MUSA Line), within which the provision of urban services and the accommodation of urban land use growth should occur. The MUSA Line is based

on forecasts of future land area needs for urban land uses and an inventory of available vacant land suitable for urban development. Provision of public services, including extension of sewer service, must be contained within the MUSA Line, in order to be approved by Metro Council.

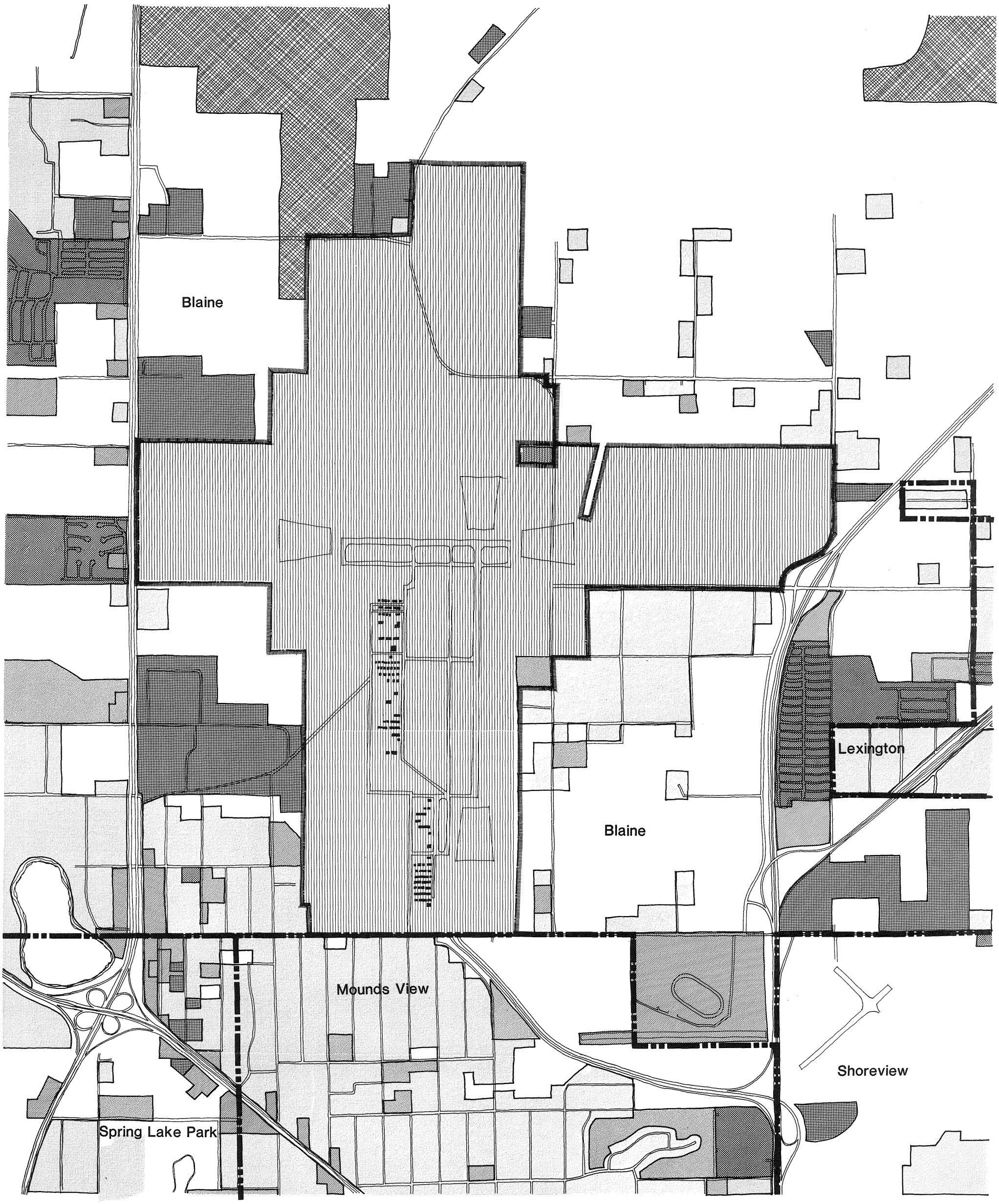
The existing MUSA Line occurs to the north of the Anoka County-Blaine Airport property lines, excluding the northeast portion of Blaine from the urban service area. The City of Blaine has requested that the MUSA Line be redesignated further to the north, so that the entire area surrounding the airport would be included in the MUSA Line.[35] Blaine has also requested the extension of a metropolitan sewer interceptor northward from the city of Mounds View to the area Blaine has requested be included inside the MUSA Line. Metro Council has taken the position that redesignation of the MUSA Line and extension of the sewer interceptor are not justified at this time.[36] However, the matter is still under study by Metro Council.

If the MUSA Line is redesignated and the sewer interceptor extended, the interceptor would likely cross the eastern portion of the airport property, and would allow more intensive urban use of the area north and northeast of the airport.

In summary, both the City of Blaine and Metro Council project continued urban growth in the area surrounding the airport, although they differ somewhat on the amount of urban growth to expect, the availability of vacant land to accommodate such growth, and whether development should be limited to the area to the southeast and west of the airport, or include the area to the north and northeast.

Impact

According to the FAA guidelines, the Ldn 65 noise contour delineates the maximum noise level limit for residential use.[37] As discussed in section 7.3.1, noise exposure above Ldn 65 (LUG Zones C and D) would be entirely contained on airport property, in all three alternatives. The only Ldn



MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet
0 400 800 1600 2400
miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

EXISTING LAND USE

Exhibit 7-27

noise contour to extend off airport property in each alternative is the Ldn 55 contour (LUG Zone B).

Existing and planned land use in the off-airport portions of LUG Zone B for Alternatives A and C would be fully compatible. Alternative B would have the only conditions considered not fully compatible. Where LUG Zone B extends off the airport property to the west, it overlaps a portion of an existing mobile home park, and vacant land zoned partially for industry and partially for high-density residential use. Both industry and high-density residential uses are considered compatible in LUG Zone B, but mobile home parks are suggested for LUG Zone A.

East of the airport, LUG Zone B for Alternative B would overlay the highway I-35W corridor and vacant land zoned for industry, and would be compatible with both land uses according to the guidelines.

While the mobile home park west of the airport is suggested for LUG Zone A, it is not necessarily incompatible in LUG Zone B. The FAA guidelines emphasize that the "suggested" compatible LUG zones should be considered starting points from which local governments can develop their own guidelines, via citizen involvement and local community planning goals.

In summary, Alternatives A and C when fully developed in the year 2000 would be compatible with adjacent land use. Alternative B when fully developed in the year 2000 would create cumulative noise exposure levels one category higher than suggested by the guidelines, in a portion of the existing mobile home park west of the airport at Highway 65 and 97th Avenue Northeast.

7.3.4 Zoning Compatibility

Zoning controls are the method most commonly used by local governments to implement a future land use plan and to control the pattern of urban development. Zoning is an exercise of the police powers of state and

local governments which designates the uses permitted on each parcel of land within the zoning jurisdiction.

Exhibit 7-28 shows a composite of the existing zoning pattern of the communities adjacent to the airport. The existing zoning pattern generally reflects the existing land use patterns of the area. The major exception is that portion of Blaine to the north, northeast, and east of the airport. The existing land use pattern of this area is largely vacant land and agricultural land, interspersed with scattered single-family residential and light industrial uses. The existing zoning of the City of Blaine designates all of this area for industrial land use.

Impact

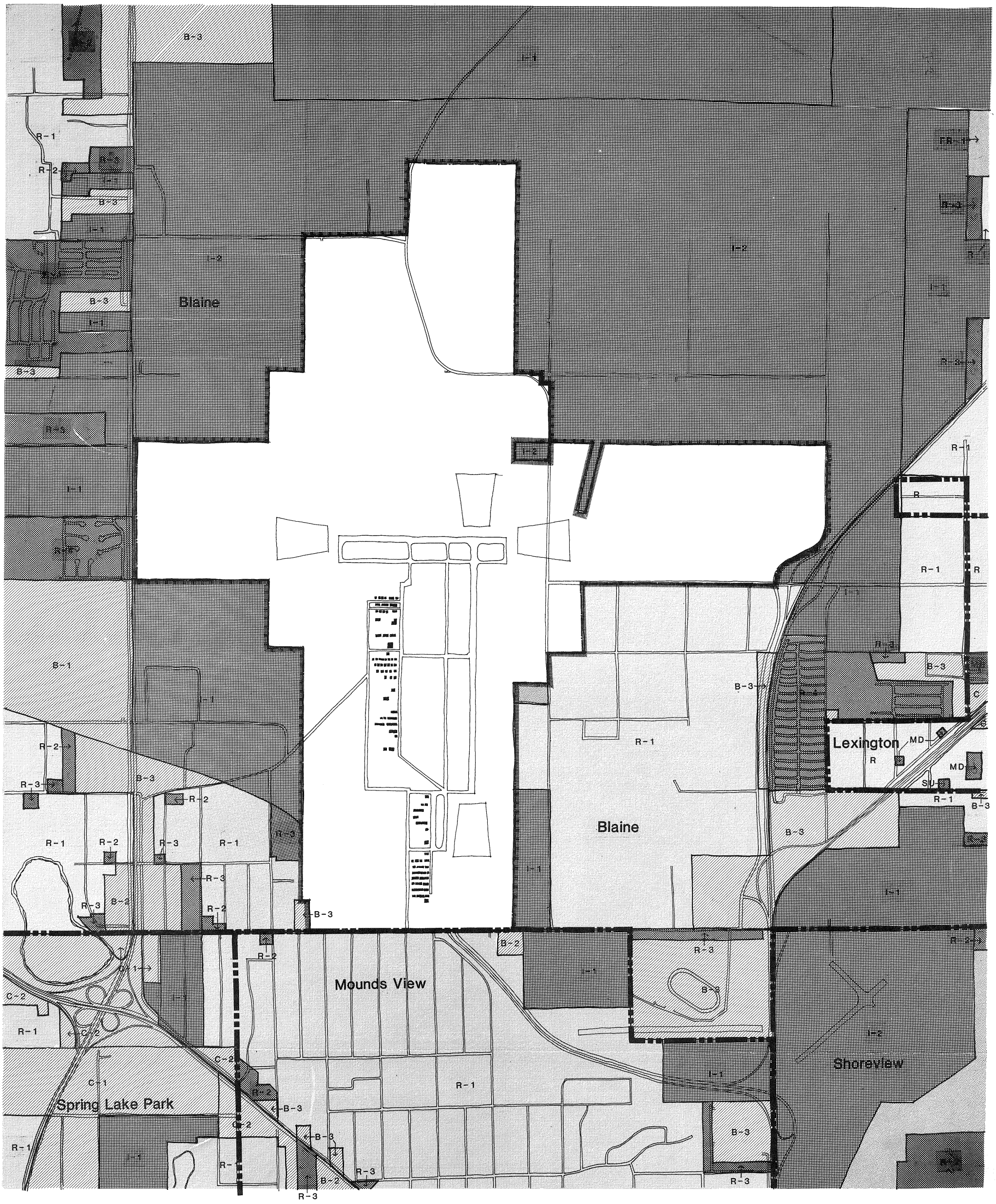
The State of Minnesota has recognized the need for special land use and zoning controls around airports, and has provided for the establishment of a special zoning district and zoning board with powers to establish and enforce zoning compatible with airport operation.[38]

The Minnesota Division of Aeronautics has prepared a "Model Zoning Ordinance for Minnesota Airports," that when applied to specific airports, establishes "airspace obstruction zones" and "land use zones," and allows a special airport zoning board to implement land use restrictions within each zone.[39]

Exhibit 7-29 shows the land use zones that would result from applying the model zoning ordinance to Alternative A. Exhibit 7-30 shows the zones for Alternative B. Exhibit 7-31 shows the zones for Alternative C.

Zone A is considered the most restrictive zone and is to contain no above-ground structures. The exhibits show that all A zones would be contained on the existing airport property for each alternative.

Zone B is intended to be less restrictive than Zone A. On Zone B site population would be limited by restrictions on lot and building size.

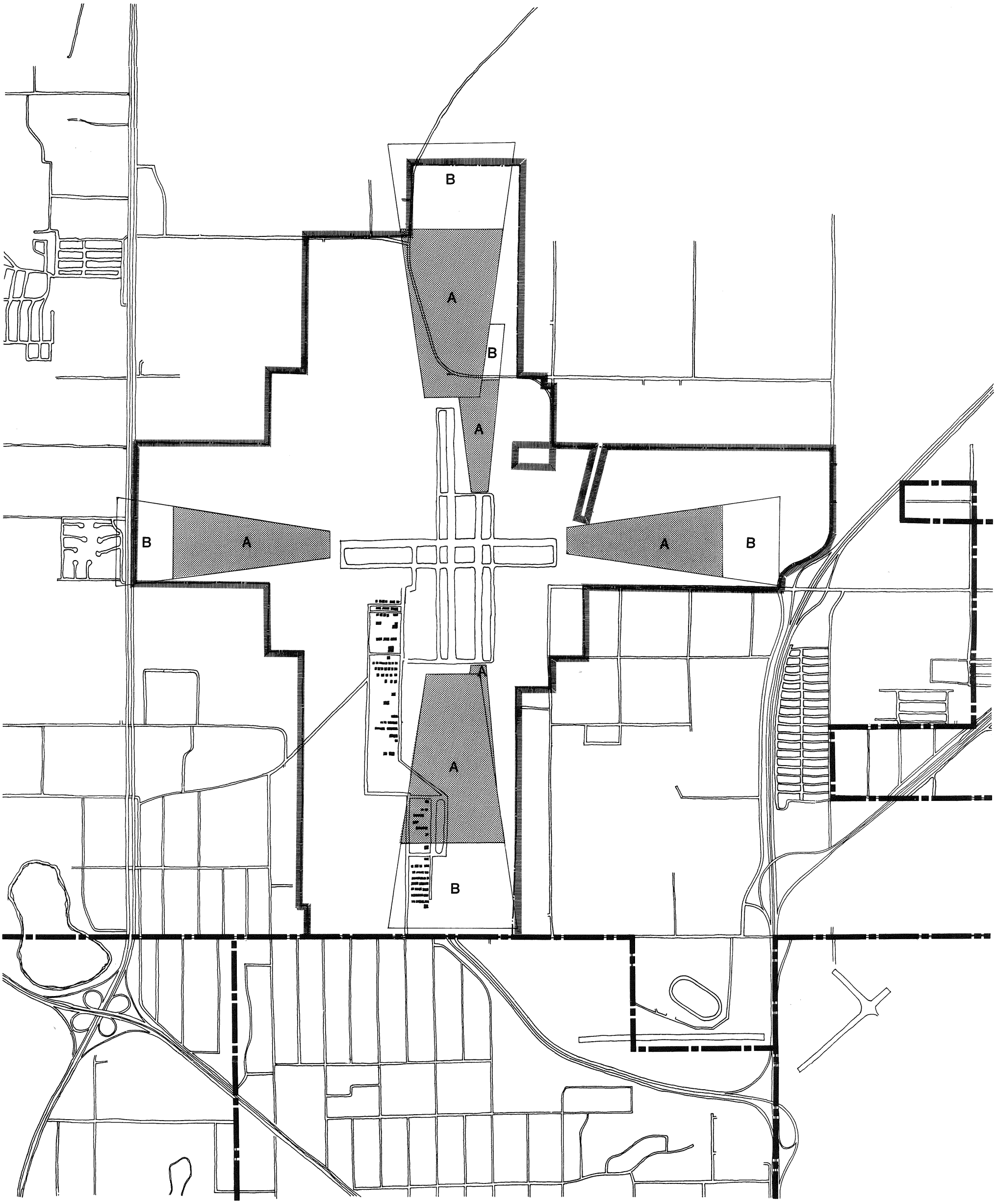


MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400
miles 0 1/8 1/4 3/8 1/2
acres 40 10 2.5

EXISTING ZONING

Exhibit 7-28



A ZONE A

B ZONE B

MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

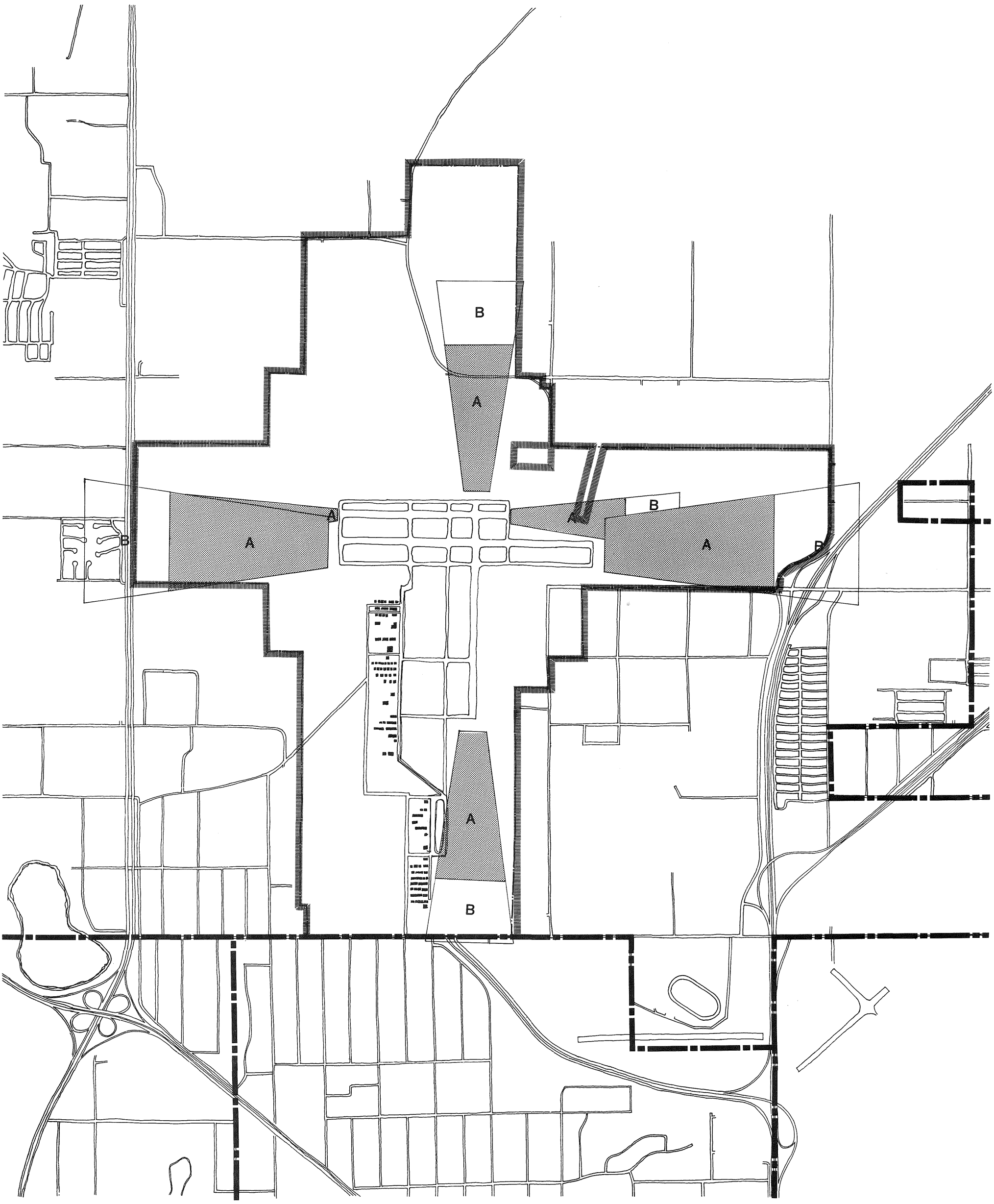
feet
0 400 800 1600 2400
miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

ALTERNATIVE A
LAND USE ZONES

MODEL AIRPORT ZONING ORDINANCE

Exhibit 7-29



A ZONE A

B ZONE B

MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

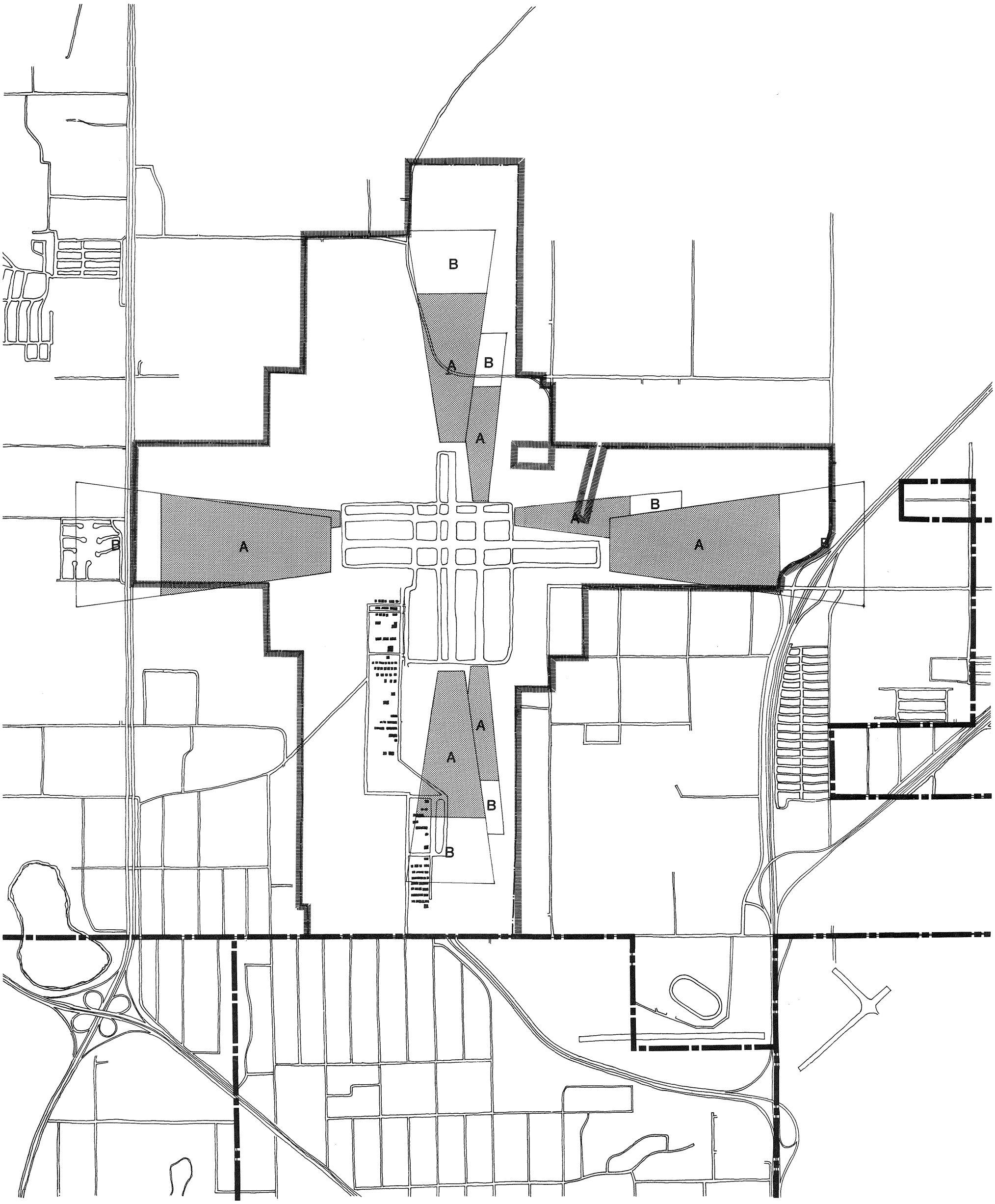
feet 0 400 800 1600 2400
miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

ALTERNATIVE B
LAND USE ZONES

MODEL AIRPORT ZONING ORDINANCE

Exhibit 7-30



A ZONE A

B ZONE B

MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet
0 400 800 1600 2400
miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

ALTERNATIVE C
LAND USE ZONES

MODEL AIRPORT ZONING ORDINANCE

Exhibit 7-31

The regulations outlined in the model zoning ordinance would apply only to new land uses established after enactment of a specific zoning ordinance at Anoka County-Blaine Airport. The regulations could be modified from the model ordinance, but cannot be applied retroactively.

Alternative A would require Zone B to overlap property boundaries on the north, east, and west sides of the airport. The area to the north is vacant land. The area to the east is largely occupied by the I-35W corridor. The area to the west is largely occupied by an existing mobile home park.

Alternative B would require Zone B to slightly overlap the airport property in all directions. The largest overlap would occur to the south, where it would overlap a portion of the existing segment of relocated Highway 10, and several existing residences. To the east and west the entire area of overlap would be occupied by highway corridors. Only a slight overlap would occur to the north, over currently vacant land.

Alternative C would require the same Zone B overlap of airport boundaries as would Alternative A.

In summary, all three alternatives would require some overlap of Zone B in areas where the existing land uses would not be considered fully compatible according to the model zoning ordinance. The actual adoption of an airport zoning ordinance, designation of land use zones, and regulation of those zones would occur following the adoption of an airport master plan by the MAC.

7.3.5 Community Access

The existing airport facilities are accessible from two locations. The main entrance to the airport is from 85th Avenue Northeast, also called County Road J, along the southern airport boundary. Approximately 900 feet east of the airport entrance is the entrance to the existing segment of relocated Highway 10, which connects with highway I-35W approximately

one mile to the east. Approximately one mile west of the airport entrance, 85th Avenue Northeast intersects with State Highway 65 and existing Highway 10.

Secondary access to the airport is gained from Highway 65 west of the airport, approximately 1.2 miles via Radisson Road.

Xylite Street, 95th Avenue Northeast, 101st Avenue Northeast, and Radisson Road cross undeveloped portions of the airport property, although access to airport property is generally not available. The airport property also borders the 95th Avenue Northeast interchange with I-35W.

Impact

All three alternatives include extension of Runway 8-26 eastward, requiring closure and relocation of a portion of Xylite Street.

Alternatives A and C include extension of Runway 17-35 northward and construction of a new runway parallel to Runway 17-35. FAA airport design guidelines require that a minimum clearance of 15 feet be maintained over public roads, considering a 20:1 slope commencing 200 feet from the runway end.[40] Assuming the new Runway 17R-35L were constructed at the same elevation as Runway 17-35, only approximately 12 feet of vertical clearance would be maintained over 101st Avenue Northeast, to the north. The Minnesota DOT maintains even more demanding standards. Because the minimum clearances could not be maintained, Alternatives A and C would require partial relocation of 101st Avenue Northeast where it meets Radisson Road on airport property.

Alternative B would maintain approximately 100 feet vertical clearance according to FAA standards and over 50 feet vertical clearance according to MnDOT standards, over 101st Avenue Northeast. Therefore, Alternative B would not affect the road. Alternative B would only require closure and relocation of Xylite Street.

NOTES TO CHAPTER 7

1. Public Law 91-190, National Environmental Policy Act of 1969.

2. U.S. Department of Transportation, Federal Aviation Administration, FAA Order 1050.1C, "Policies and Procedures for Considering Environmental Impacts." Washington, D.C.: December 20, 1979.

   FAA Order 5050.4, "Airport Environmental Handbook." Washington, D.C.: March 21, 1980.

3. Executive Order 11990, "Protection of Wetlands," and Executive Order 11988, "Floodplains."

4. Minnesota Stat. 116D.04, subd. 2 (1974).

5. 6 MCAR 3.021.

6. 6 MCAR 3.024(B).

7. Minnesota Noise Pollution Control Regulations, NPC-1, NPC-2.

8. U.S. Department of Agriculture, Soil Conservation Service, "Soil Survey of Anoka County, Minnesota," 1977.

9. Minnesota Department of Natural Resources, "Master Plan for the Carlos Avery Wildlife Management Area," draft, 1979.

10. Minnesota Department of Natural Resources, personal communication with C. Henderson, Wildlife Biologist, Section of Wildlife, St. Paul, Minnesota.

11. Minnesota Department of Natural Resources, "Twin Cities Metropolitan Area Wetland Inventory," 1978.

12. U.S. Department of Interior, Fish and Wildlife Service, Circular 39, "Wetlands of the United States," 1978.

13. U.S. Department of Housing and Urban Development, Federal Insurance Administration, "Flood Insurance Study, City of Blaine, Minnesota, Anoka County," May 1979.

14. Consulting Engineers Diversified, Inc., "City of Blaine Comprehensive Storm Drainage Plan," 1975.

15. Harry Parker and J. W. MacGuire, "Simplified Site Engineering for Architects and Builders." New York: John Wiley and Sons, 1954.

16. U.S. Environmental Protection Agency, "National Ambient Air Quality Standards," EPA Regulation, 40 CFR 50, as amended.

17. Metropolitan Council of the Twin Cities Area, "Air Quality Control Plan for Transportation in the Twin Cities Metropolitan Area," supplement number 2 to the Transportation Policy Plan, June 14, 1979.

18. Ibid., p. 13.

19. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, "Compilation of Air Pollutant Emission Factors," 3rd ed., AP-42, 1977.

20. U.S. Department of Transportation, Federal Aviation Administration, "Revision of the Box Model Method for Ascertaining Aircraft Emissions at Airports," 1975.

21. G. C. Holzworth, "Mixing Heights, Wind Speeds, and Potential for Urban Air Pollution throughout the Contiguous United States," U.S. EPA, AP-101, 1972.

22. Minnesota Noise Pollution Control Regulations, NPC-1, NPC-2.

23. U.S. Department of Transportation, Federal Aviation Administration, "Airport-Land Use Compatibility Planning," AC 150/5050-6, December 1977.

24. Public Law 89-670, Department of Transportation Act of 1966, as amended by Public Law 90-495.

25. Metropolitan Council/Metropolitan Health Board, "Consumer's Guide to Long-Term Care, Nursing Homes and Alternative Services in the Twin Cities Metropolitan Area," March 1979.

26. Metropolitan Council of the Twin Cities Area, "Schools and School Districts - 1979," Publication No. 08-79-018, and U.S.G.S. 7.5 minute Quadrangle Series maps.

27. Minnesota Historical Society, Russell W. Fridley, State Historic Preservation Officer, letter of January 14, 1980 to TRA, and Anoka County Historical Society, Maxine A. Larson, President, communication in January 1980.

28. U.S. Department of Transportation, Federal Aviation Administration, "Aviation Noise Abatement Policy," Washington, D.C.: November 1976.

29. U.S. Department of Transportation, Federal Aviation Administration, "Airport-Land Use Compatibility Planning," AC 150/5050-6, December 1977, and;

_____, Federal Aviation Regulations, Part 150, Airport Noise Compatibility Planning, Interim Rule.

30. Metropolitan Council of the Twin Cities Area, "Land-Use Trends in the Twin Cities Metropolitan Area, 1960-1975," Resource and Development Report No. 4, October 1978.

31. Isberg, Riesenberg, Chelseth and Associates, "City of Blaine Comprehensive Plan," 1979.

32. Ibid. Also, City of Blaine, "Vacant Land Study," 1979; Midwest Planning and Research, "Mounds View Comprehensive Plan Update," 1975, updated 1979; and aerial photographic interpretation, 1980.

33. Minnesota Statutes, 1976, Section 473, "Land-Use Planning in the Twin Cities Metropolitan Area."

34. Metropolitan Council of the Twin Cities Area, "Metropolitan Development Guide; Development Framework: Policy, Plan, Program," 1975.

35. City of Blaine, "Vacant Land Study," 1979.

36. Metropolitan Council of the Twin Cities Area, Charles Weaver, Chairman, letter of November 15, 1979 to Mr. Leslie M. Johnson, Manager, City of Blaine.

37. U.S. Department of Transportation, Federal Aviation Administration, "Airport-Land Use Compatibility Planning," AC 150/5050-6, December 1977.

38. Minnesota Statutes 360.061-360.074.

39. Minnesota Division of Aeronautics, "Model Zoning Ordinance for Minnesota Airports," 1977.

40. U.S. Department of Transportation, Federal Aviation Administration, "Utility Airports, Air Access to National Transportation," AC 150/5300-4B, 1975.

CHAPTER 8
PLAN IMPLEMENTATION

8.1 INTRODUCTION

In late 1979, the present master plan study for the Anoka County-Blaine Airport was initiated. The study was based upon the Aviation Chapter of the Metropolitan Development Guide which recommended development of Anoka County-Blaine Airport as an Intermediate airport. The study was initially oriented, therefore, toward evaluating the differential social, environmental, and aeronautical impacts associated with development of the airport as either an Intermediate or Minor facility. Also in 1979 the Minnesota Legislature, in House File No. 1 (Special Session), established a two-year development moratorium at the airport and directed preparation of a master plan.

At the outset of the plan, a broad citizen participation process was established to ensure both that the public would be kept continually informed and that the public would have a meaningful input to plan development. The process included three major types of activities: (1) large public meetings, (2) a series of workshops with an Advisory Task Force, and (3) periodic newsletters. An initial large public meeting was held on October 30, 1979, at the Blaine Senior High School. Opinion both in support of and in opposition to airport development was expressed at this meeting. Concern expressed at this meeting focused primarily on development of the airport as an Intermediate facility, and the safety and environmental issues inherent in this development.

Early in the study four conceptual alternatives were identified: (1) development of an Intermediate airport primarily oriented in the north-south direction; (2) development of an Intermediate airport primarily oriented in the east-west direction; (3) development of an Intermediate airport with an entirely new orientation rotated to the northwest-southwest; (4) development of a Minor airport.

Through a series of meetings with the Advisory Task Force, the conceptual alternatives were refined into three Intermediate and three Minor airport configurations. Each Advisory Task Force workshop was an informal working session and included active participation by all members. Within the week following each workshop a summary memorandum to the MAC was prepared. This synthesized the discussion in the workshop and detailed the Task Force's position on the issues. This memo was also sent to the Task Force members and to public reserve files at the Anoka County Library branches at Blaine, Circle Pines, and Fridley.

In early 1980 the Minnesota Legislature, in the Supplemental Appropriations Bills, approved a provision precluding the MAC from upgrading an existing Minor airport to Intermediate status. As a result of the 1980 legislation, the MAC took action at the June, 1980 Commission meeting "...to terminate the master plan for Anoka County-Blaine Airport as an Intermediate Airport...[and]...to complete a Master Plan as a Minor Airport...." Pursuant to the Commission action, the master plan study has been limited to an evaluation of alternative development concepts consistent with the airport's role as a Minor facility. In refining the Minor airport alternatives, the primary goals were (1) to improve the compatibility of the airport with the surrounding communities to the greatest extent possible, and (2) to provide facilities that would maximize the safety of aircraft operations at the airport.

Based on the two goals established for the airport, a series of alternatives were developed for evaluation. These alternatives are described as follows:

- Alternative A. Existing Runway 17-35 would have its southern threshold relocated 2,655 feet to the north, would be lengthened to the north for a total runway length of 3,200 feet, and would serve as a visual runway for flight training operations. A new 4,800-foot-long runway would be constructed 500 feet to the west. This parallel runway, designated Runway 17R-35L, would include an Instrument Landing System (ILS) and would serve as the airport's primary runway. Existing crosswind Runway 8-26 would be lengthened 800 feet to the east for a total length of 4,000 feet.

- Alternative B. The existing Runway 17-35 threshold would be relocated 1,70 feet to the north, and the runway length would be reduced to a total of 4,000 feet. It would serve as a crosswind runway. Existing Runway 8-26 would be lengthened 1,600 feet to the east, for a total length of 4,800 feet, would become the airport's primary runway, and would have an ILS installed with precision approaches from the east. A new parallel runway 3,200 feet long would be constructed 500 feet to the north. It would be a visual runway, and would serve for flight training operations.

- Alternative C. This alternative includes parallel runways in both orientations, providing equal capability, maximum operating flexibility, and greatest potential for minimizing aircraft noise exposure. The north-south parallel runways would be in the same location as those for Alternative A. The east-west parallel runways would be in the same location as those described for Alternative B. The primary runway in the east-west direction would include an ILS with approaches from the east.

Parallel runways are proposed in the alternatives to increase operational safety by physically separating high-performance aircraft and itinerant operations from single-engine training activity. Potential conflicts both in the air and on the ground can be avoided and the airport can operate more safely and efficiently than if all traffic is mixed on a single runway. The parallel runway also has important environmental benefits in that it places the repetitive training activity over areas that are less densely populated, i.e., to the north of the airport for Alternatives B and C, and between the existing runway and I-35 and north of relocated T.H. 10 for Alternatives A and C.

All of the alternatives have been designed to reduce noise exposure to the south in Mounds View. This is accomplished by moving the southerly threshold of the runways to the north either 1,700 feet or 2,600 feet. This shift will significantly raise the altitude of aircraft over the community and could, in fact, virtually eliminate overflights.

In addition to the improvement in safety obtained from parallel runways, further improvement is provided by an air traffic control tower and Instrument Landing System (ILS). The air traffic control tower will provide a more orderly environment for aircraft operations. It will be a necessity to operate parallel runways. The ILS will provide positive guidance to pilots operating into the airport in terms of both heading and altitude. As such it allows a higher degree of operational safety; the ILS also provides environmental benefits by reducing low-altitude overflights.

The evaluation of alternatives included consideration of both the natural and human environment. The natural environmental parameters considered were: (1) geology and soils, (2) vegetation and wildlife habitat, (3) wetlands, (4) hydrology and water quality, and (5) air quality. The human environmental parameters considered were: (1) noise, (2) sensitive receptors and special sites, (3) land use compatibility, (4) zoning compatibility, and (5) accessibility.

In general terms, the evaluation showed that no negative impacts exist in the areas of geology and soils, vegetation and wildlife habitat, hydrology and water quality, air quality, and accessibility. Some minimum level of impact can be expected on wetlands near the airport. Alternative A will have the least impact, Alternative B will have a greater impact than Alternative A, and Alternative C a slightly greater impact than Alternative B.

The greatest difference between the alternatives is in noise exposure. In the analysis, the following conditions were evaluated: (1) the existing configuration with present-day traffic, (2) the existing airport configuration with traffic at capacity, (3) Alternative A, (4) Alternative B, and (5) Alternative C. The primary operating condition for Alternative A would be in the north-south direction. Alternative B would be in the east-west direction. Total noise emissions would be the same for either alternative, however. Alternative A would largely concentrate noise exposure in the north-south direction. Alternative B would concentrate noise exposure in the east-west operating direction. Since wind

conditions at Anoka County-Blaine Airport will permit operating in both directions, Alternative C provides runways in both directions.

Alternative A would result in the greatest cumulative noise level off the airport property to the south, but would produce a lower noise level than if the existing configuration were to reach capacity. Alternative B would produce the highest cumulative noise levels off the airport property to both the east and west. Further, it would produce a noise exposure pattern to the north and south approximately the same as exists today. Alternative C would reduce cumulative noise exposure in both operating directions by distributing an equal amount of traffic in both directions.

Following preparation of a draft report containing the preceding analysis, a public meeting was held in Blaine on May 14, 1981. Again, both support and opposition to airport development was expressed. Concerns about airport development raised at this meeting focused on several issues. These included consistency of the airport plan with the Metropolitan Development Guide, providing a 4,800-foot runway and an ILS at a Minor airport, and the absence of Commissioners at meetings regarding the airport.

A 4,800-foot runway was included in each alternative because it is the runway length presently available at the airport. The addition of an ILS provides significant safety benefits to both airport users and to those living in the surrounding area.

Following a careful evaluation of the analytic material contained in Chapters 1 through 7 of this report, staff advice, and public commentary, the Minneapolis-Saint Paul Metropolitan Airports Commission selected Alternative C for implementation. At the same time the MAC instructed that this alternative be modified slightly. Specifically, the Commission directed that the length of all runways be limited to 4,000 feet in order that the airfield be consistent with the guidelines of a Minor category airport. Later, Alternative C was adjusted an additional time in order to meet the requirements imposed by House File 1290. This prohibits MAC

from reducing the length of existing runways. As a result, Runway 17-35 retained its present length of 4,855 feet. The primary runway east-west was lengthened from 4,000 feet to 4,855 feet. In final form, Alternative C is referred to as Alternative C - Modified.

A draft final report was published in January 1983. The recommended plan was Alternative C - Modified with dual parallel runways, the primary runways in each direction being 4,855 feet long and the parallels 3,200 feet long.

A public hearing was held regarding the draft master plan on June 28, 1983, at the Spring Lake Park High School. Three Commissioners served as hearing officers. A presentation on the plan was made followed by the receipt of statements from elected officials and the public.

The Hearing Officer's report was presented to the Planning and Physical Development Committee of the Metropolitan Airports Commission at its meeting on August 2, 1983. This recommended that the length of the primary east-west runway, Runway 8R-26L, be reduced to 4,000 feet.

At the Commission's direction, the length of Runway 8R-26L was reduced from 4,855 to 4,000 feet in length and the final master plan prepared on this basis.

In this chapter an implementation plan for Alternative C - Modified is presented. Development is divided into three phases which are related to the levels of traffic indicated in the forecast of demand. In general the three phases correspond to the following time frames: Phase 1, 1980-1985; Phase 2, 1986-1990; and Phase 3, 1991-2000. Development will, of course, actually be implemented only when a need is demonstrated.

Within each phase, specific projects to be implemented are identified. For each project, a construction cost is provided. Noise exposure associated with each phase is also documented.

8.2 PHASE 1

8.2.1 Phase 1A

Phase 1A development includes the following improvements: East Building Area site preparation (20 acres); Runway 17L-35R taxiway construction (40 feet by 2,000 feet); and cross-over taxiway construction (three taxiways, 40 feet by 500 feet).

Exhibit 8-1 identifies the specific projects and preliminary cost estimates for each. Phase 1A development is illustrated in Exhibit 8-2.

8.2.2 Phase 1B

Phase 1B development includes the following improvements: West Building Area site preparation (30 acres, including perimeter taxiway); Runway 8R-26L construction (100 feet by 800 feet -- widen existing runway to 100 feet and relocate Xylite Street); Runway 8R-26L taxiway construction (40 feet by 800 feet); cross-over taxiway construction; Runway 17L-35R construction (75 feet by 950 feet); 17L-35R taxiway construction (40 feet by 950 feet); Runway 35 threshold relocation and taxiway removal.

Exhibit 8-3 identifies the specific projects and preliminary cost estimates for each. Phase 1B development is illustrated in Exhibit 8-4.

8.3 PHASE 2

Phase 2 development includes the following improvements: Northwest Building Area site preparation (30 acres, including perimeter taxiway and access road), Runway 8L-26R construction (75 feet by 3,200 feet); Runway 8L-26R taxiway construction, including cross-over taxiways; and Runway 17L-35R taxiway construction.

Exhibit 8-5 identifies the specific projects and preliminary cost estimates for each. Phase 2 development is illustrated in Exhibit 8-6.

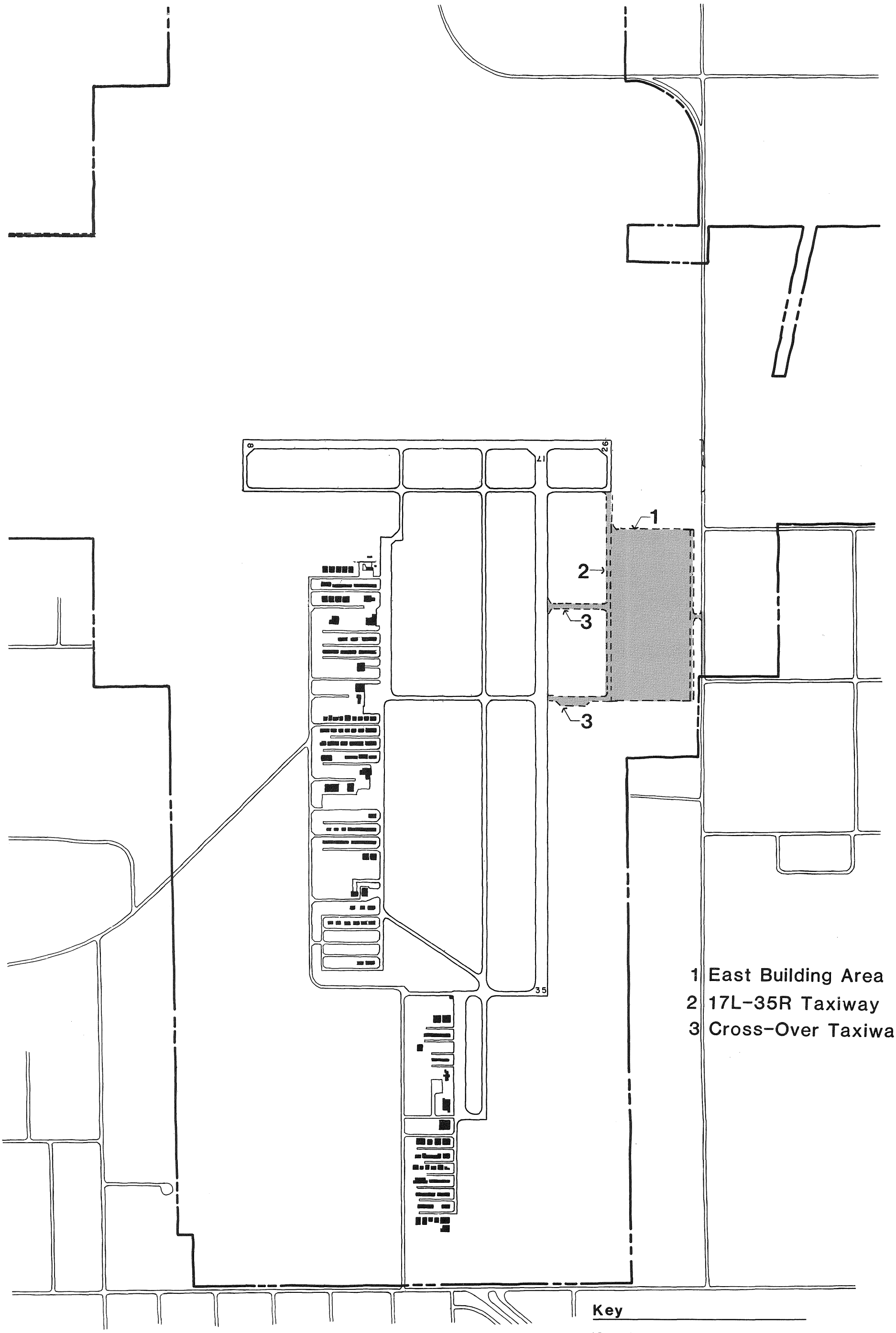
Exhibit 8-1

Cost Estimate
Phase 1A Development
Anoka County-Blaine Airport

Improvement Number	Improvement	Estimated 1982 Cost
1	East Building Area site preparation	$470,000
2	17L-35R taxiway construction	140,000
3	Cross-over taxiway construction	160,000
	TOTAL PHASE 1A	$770,000

Source: TKDA.

Note: All costs shown include 20% Engineering and Contingencies.



MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

PHASE 1A DEVELOPMENT

Exhibit 8-2

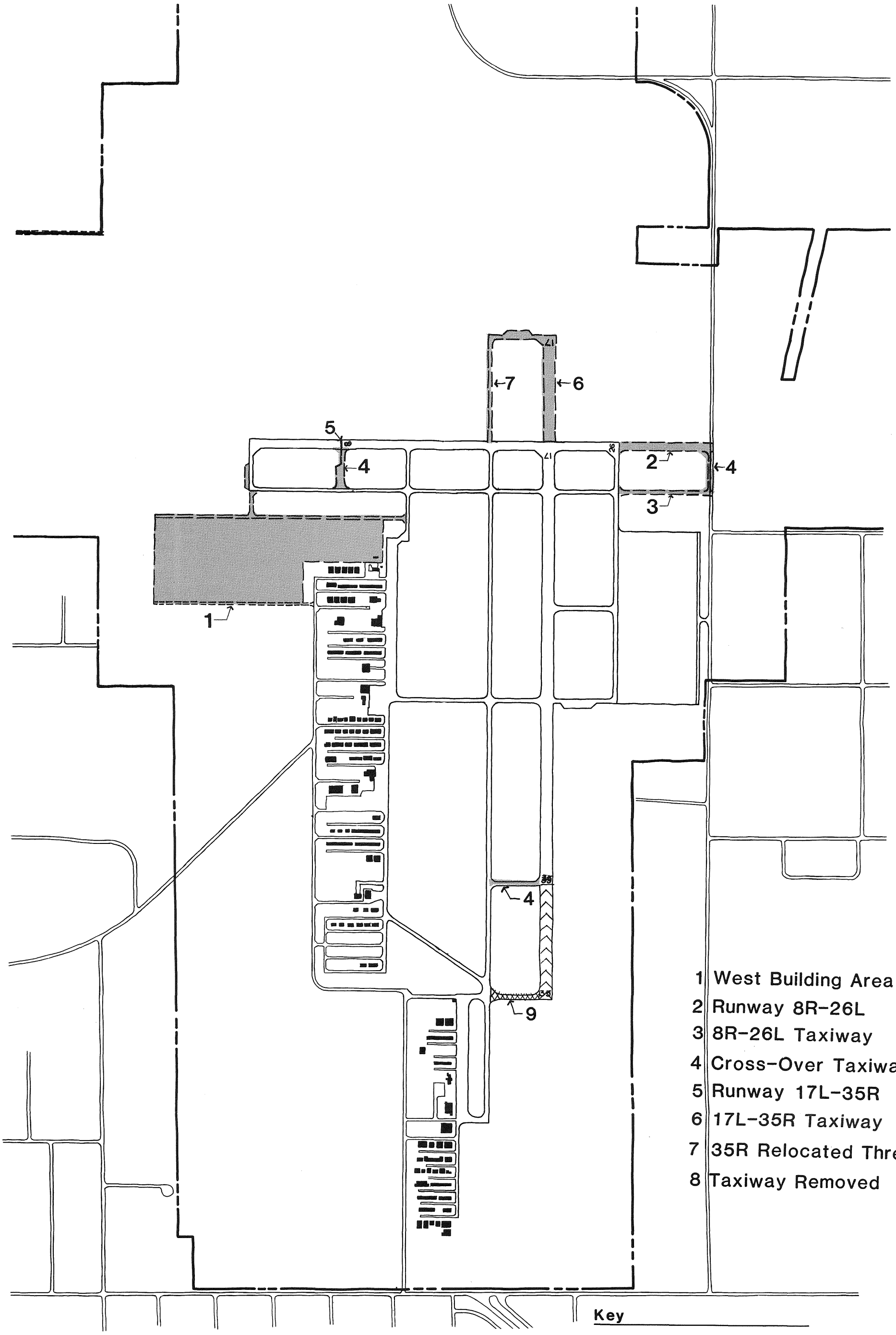
Exhibit 8-3

Cost Estimate
Phase 1B Development
Anoka County-Blaine Airport

Improvement Number	Improvement	Estimated 1982 Cost
1	West Building Area site preparation	$ 600,000
2	Runway 8R-26L construction	930,000
3	8R-26L taxiway construction	200,000
4	Cross-over taxiway construction	100,000
5	Runway 17L-35R construction	400,000
6	17L-35R taxiway construction	260,000
7	Runway 35R threshold relocation	5,000
8	Taxiway removal	5,000
	TOTAL PHASE 1B	$2,500,000

Source: TKDA.

Note: All costs shown include 20% Engineering and Contingencies.



MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

PHASE 1B DEVELOPMENT

Exhibit 8-4

8.4 PHASE 3

Phase 3 development includes the following improvements: continued Northwest Building Area site development (20 acres, including perimeter taxiway); Runway 17R-35L construction (75 feet by 4,855 feet); Runway 17R-35L taxiway construction; Runway 35R threshold relocation and taxiway removal.

Exhibit 8-7 identifies the specific projects and preliminary cost estimates for each. Phase 3 development is illustrated in Exhibit 8-8.

Exhibit 8-9 shows a composite of all development phases for Alternative C - Modified.

8.5 NOISE ANALYSIS

Noise exposure was measured using a methodology developed by the U.S. Environmental Protection Agency and approved by the FAA. The day-night sound level (Ldn) describes the average total daily noise exposure by considering the cumulative effects of all single events throughout a 24-hour day. This measure is most useful when considering an airport with continuous operations. Detailed information on this methodology was provided in Chapter 7.

Exhibits 8-10 through 8-12 illustrate Ldn noise contours for each year with the existing runway configuration remaining unchanged. Exhibit 8-13 illustrates conditions for 1985 after completion of Phase 1B. Exhibit 8-14 shows noise contours for 1990 after Phase 2 completion, and Exhibit 8-15, the year 2000 after Phase 3 completion.

8.6 SUMMARY

The development phases are designed to bring the airport's capacity to a level compatible with the forecast increase in demand. This is accomplished through taxiway and runway improvements which occur in each phase. The capacity of the airport at the completion of Phase 3 will handle forecast increases in peak hour and annual operations through the year 2000. While the existing airport configuration is adequate to

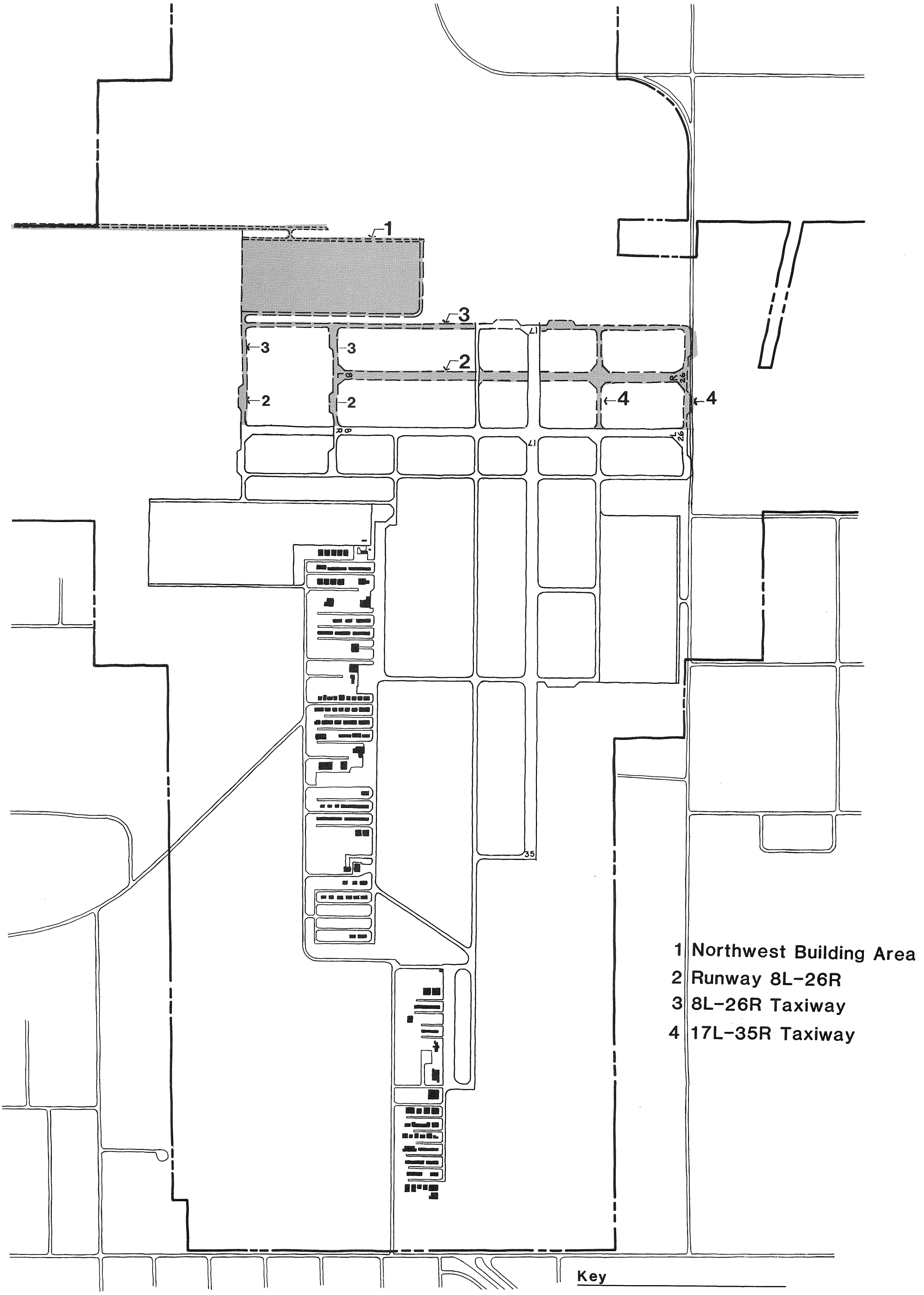
Exhibit 8-5

Cost Estimate
Phase 2 Development
Anoka County-Blaine Airport

Improvement Number	Improvement	Estimated 1982 Cost
1	Northwest Building Area site preparation	$ 770,000
2	Runway 8L-26R construction	1,200,000
3	8L-26R taxiway construction	850,000
4	17L-35R taxiway construction	100,000
	TOTAL PHASE 2	$2,920,000

Source: TKDA.

Note: All costs shown include 20% Engineering and Contingencies.



1 Northwest Building Area
2 Runway 8L–26R
3 8L–26R Taxiway
4 17L–35R Taxiway

Key

Existing Pavement

New Construction

N

feet

0 400 800 1200

PHASE 2 DEVELOPMENT

MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

Exhibit 8-6

Exhibit 8-7

Cost Estimate
Phase 3 Development
Anoka County-Blaine Airport

Improvement Number	Improvement	Estimated 1982 Cost
1	Northwest Building Area site preparation	$ 120,000
2	Runway 17R-35L construction	900,000
3	17R-35L taxiway construction	830,000
4	Runway 35R threshold relocation	10,000
5	Taxiway removal	20,000
	TOTAL PHASE 3	$1,880,000

Source: TKDA.

Note: All costs shown include 20% Engineering and Contingencies.

1 Northwest Building Area
2 Runway 17R-35L
3 17-35L Taxiway
4 35R-Rel Cate Threshol
5 Taxiway Removal

Key

Existing Pavement

New Construction

N

feet

0 400 800 1200

PHASE 3 DEVELOPMENT

MASTER PLAN
Anoka County-Blaine Airport
Anoka County Minnesota
TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

Exhibit 8-8

4,855'

3,200'

4,000'

3,200'

R
35

35

Key

Existing Pavement

New Construction

N

feet

0 400 800 1200

MASTER PLAN

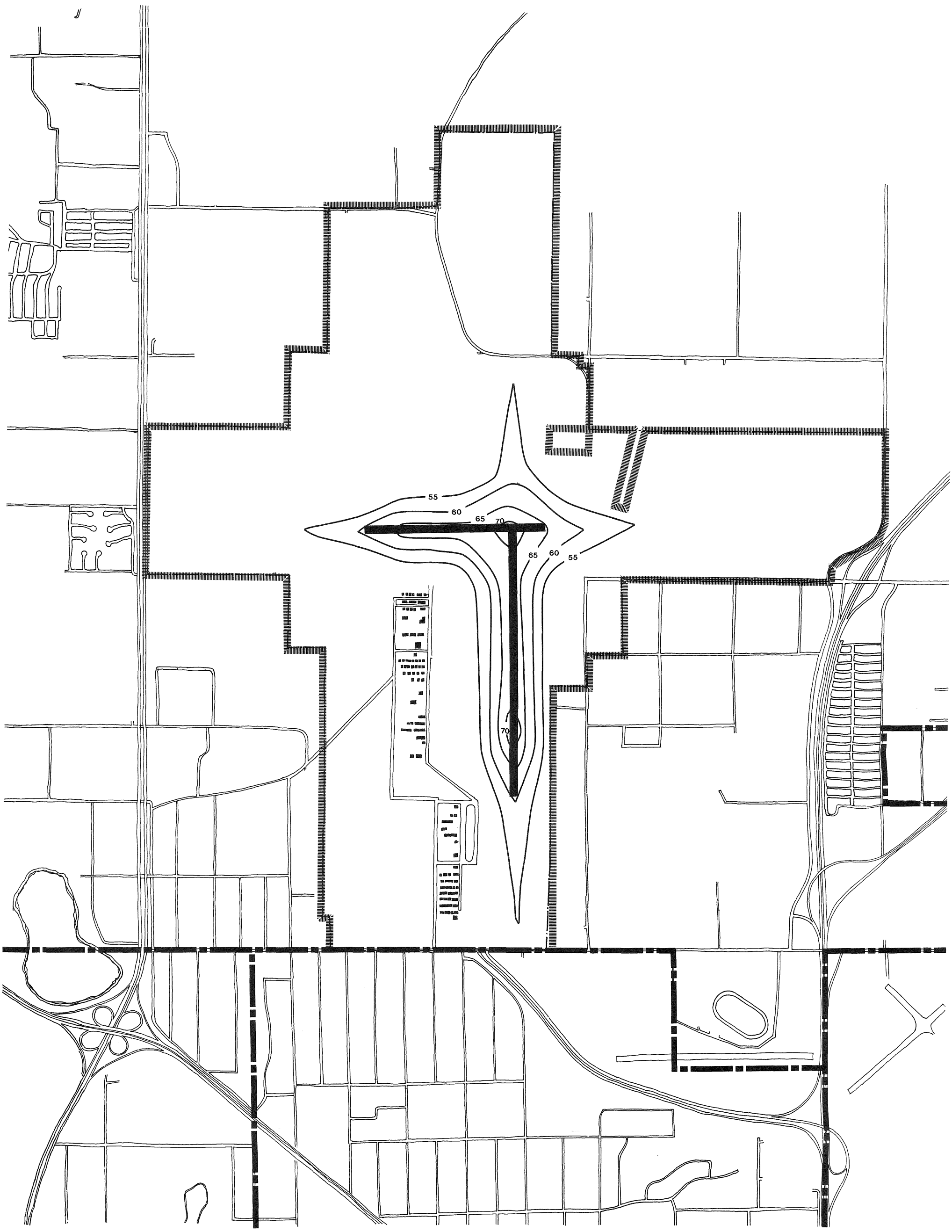
Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

COMPOSITE DEVELOPMENT

Exhibit 8-9



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

N

MASTER PLAN

Anoka County-Blaine Airport

Anoka County — Minnesota

TRA AIRPORT CONSULTANTS — SEATTLE, WASHINGTON

feet: 0 400 800 1600 2400

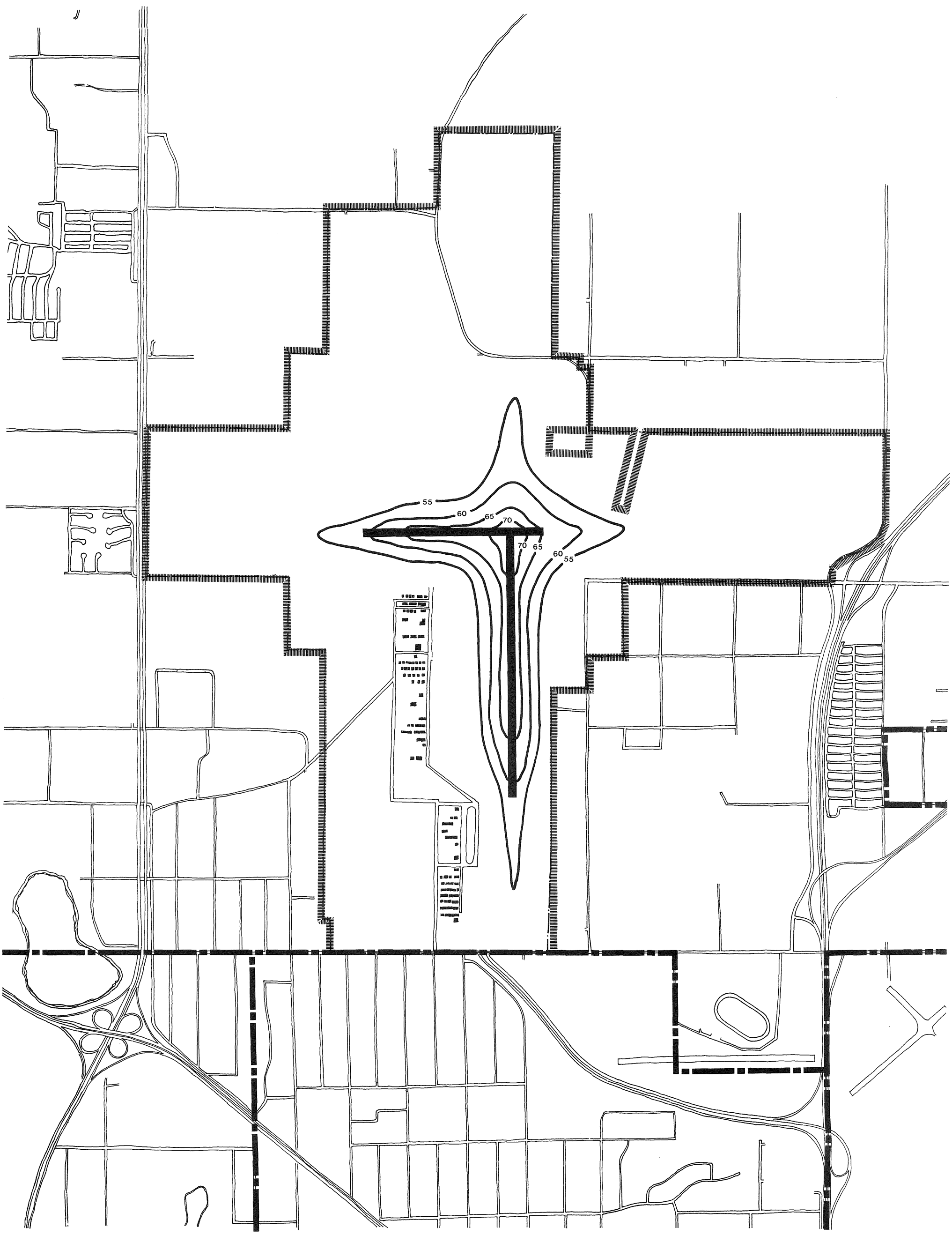
miles: 0 1/8 1/4 3/8 1/2

acres: 40 10 2.5

NOISE CONTOURS

Year 1980 Existing Configuration

Exhibit 8 10



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

N

MASTER PLAN

Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet
0 400 800 1600 2400

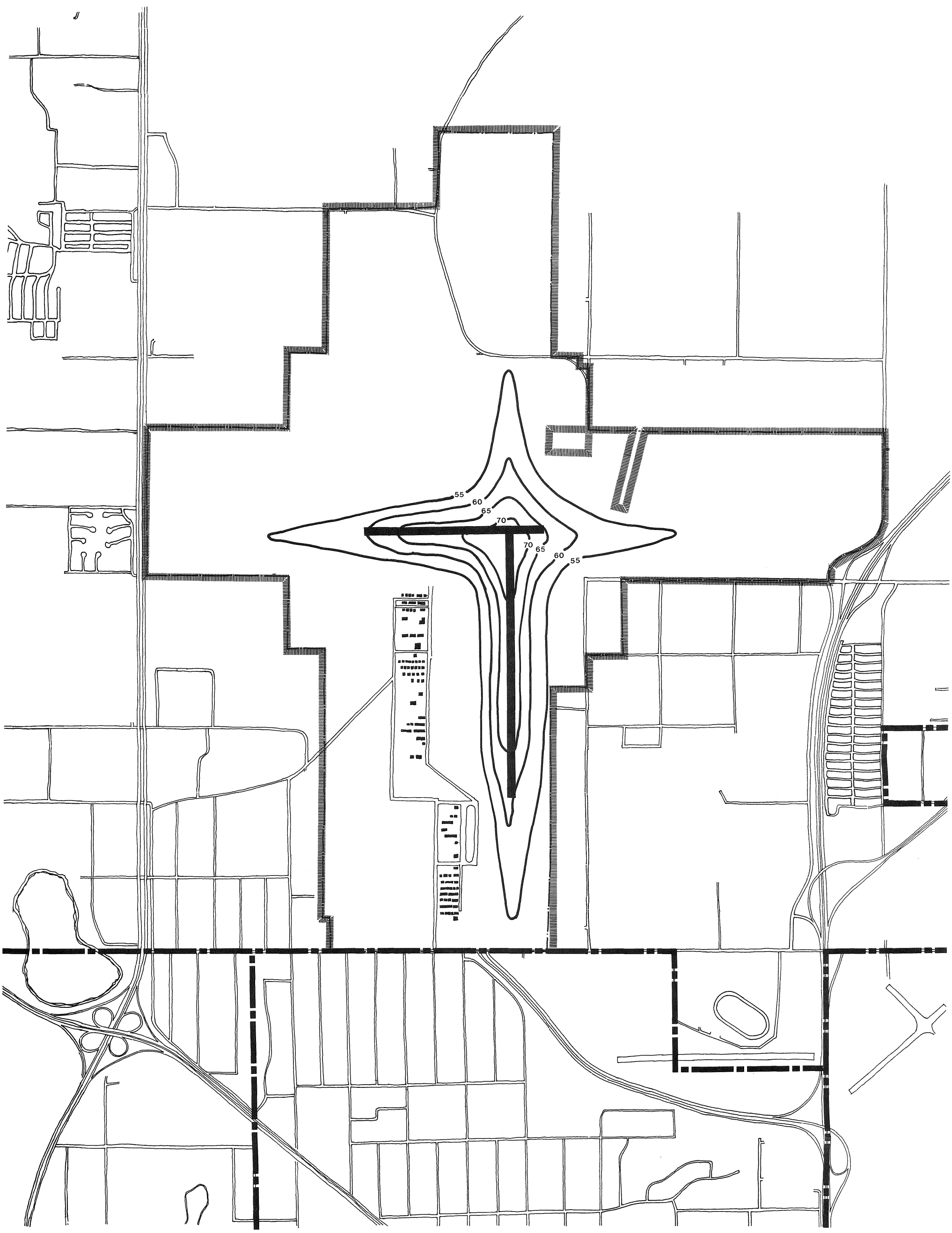
miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

NOISE CONTOURS

Year 1985 Existing Configuration

Exhibit 8 11



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

N

MASTER PLAN

Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400

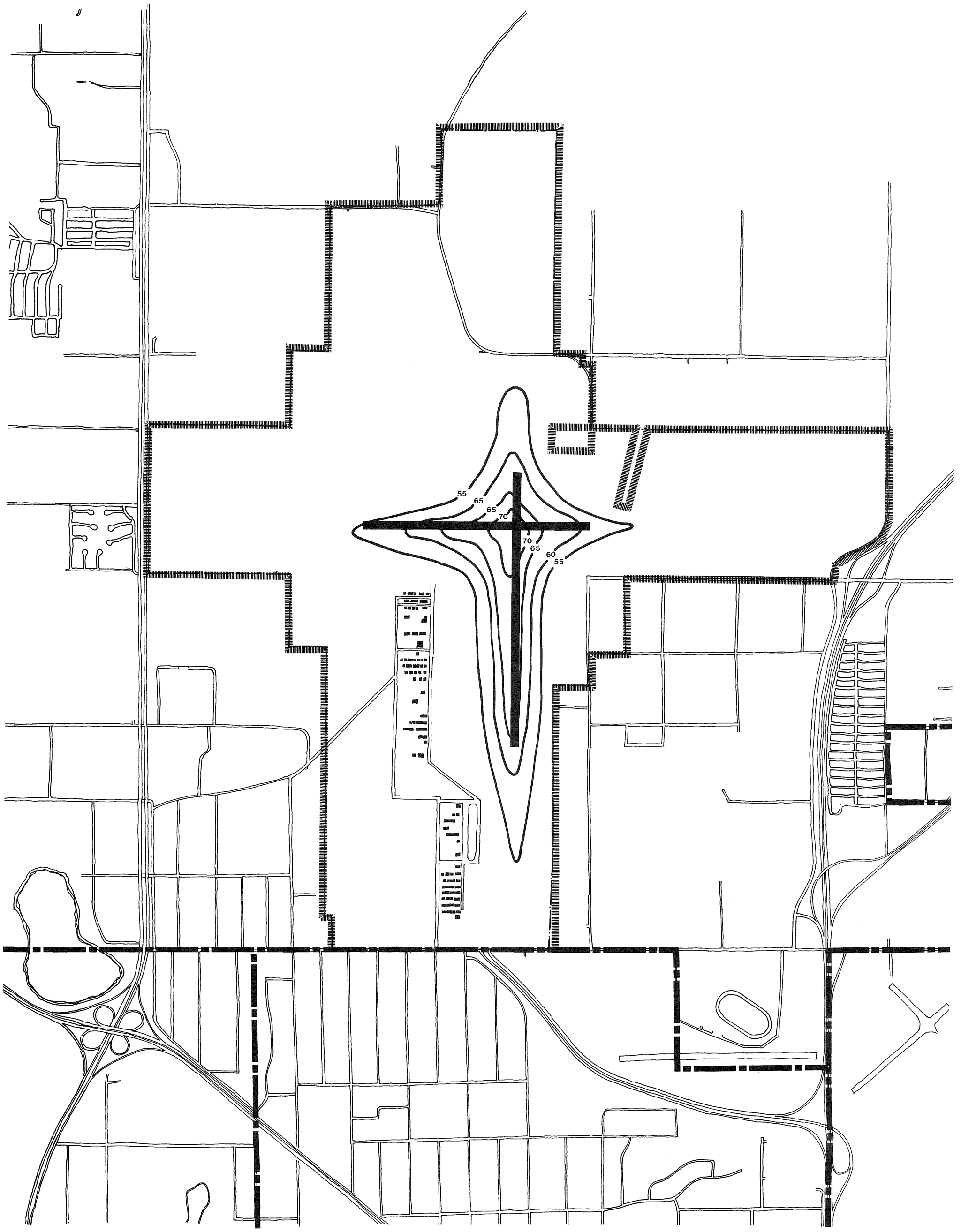
miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

NOISE CONTOURS

Year 1990 Existing Configuration

Exhibit 8 12



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

N

MASTER PLAN

Anoka County-Blaine Airport

Anoka County — Minnesota

TRA AIRPORT CONSULTANTS — SEATTLE, WASHINGTON

feet: 0 400 800 1600 2400

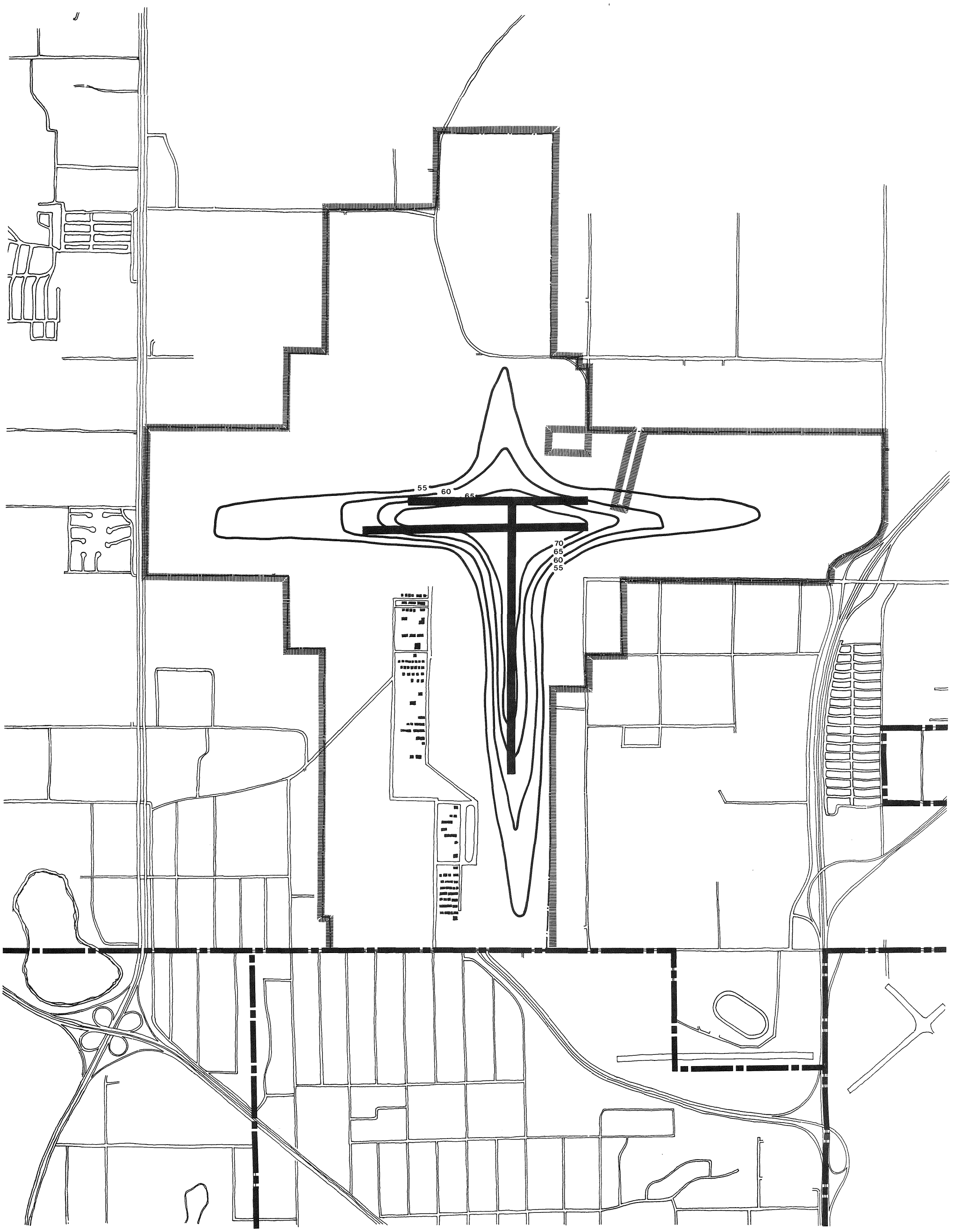
miles: 0 1/8 1/4 3/8 1/2

acres: 40 10 2.5

NOISE CONTOURS

Year 1985 Phase 1B Configuration

Exhibit 8 13



Noise Contours

Ldn 70

Ldn 65

Ldn 60

Ldn 55

N

MASTER PLAN

Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet 0 400 800 1600 2400

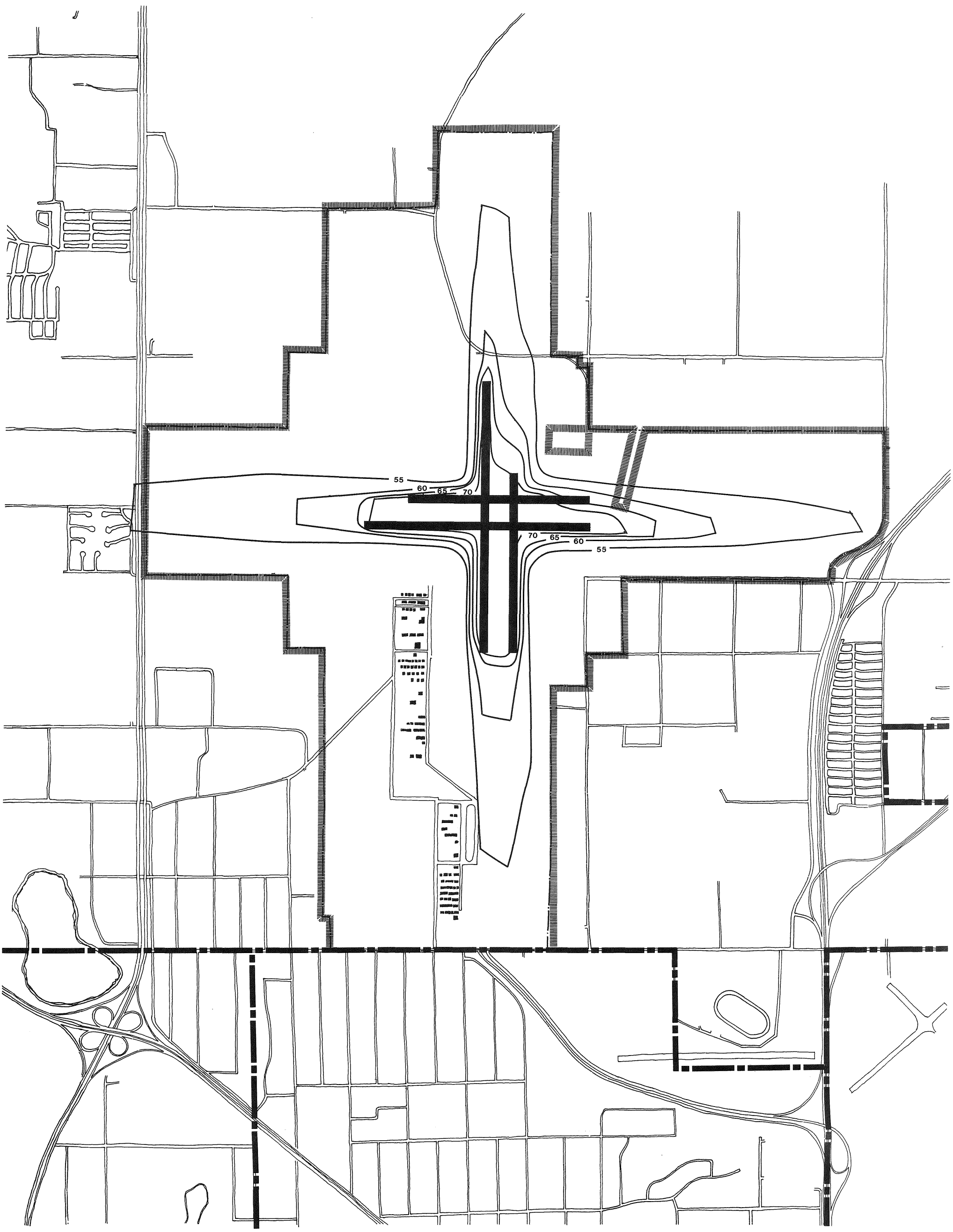
miles 0 1/8 1/4 3/8 1/2

acres 40 10 2.5

NOISE CONTOURS

Year 1990 Phase 2 Configuration

Exhibit 8 14



N

MASTER PLAN

Anoka County-Blaine Airport

Anoka County Minnesota

TRA AIRPORT CONSULTANTS SEATTLE, WASHINGTON

feet
0 400 800 1600 2400

miles
0 1/8 1/4 3/8 1/2

acres
40
10
2.5

NOISE CONTOURS

Year 1990 Phase 3 Configuration

Exhibit 8 15

handle forecast levels of peak hour demand through the 1990s, it cannot do so without a substantial increase in noise impacts on surrounding communities.

As Alternative C - Modified is implemented, the change in the airport's configuration will provide for increases in capacity and operational flexibility. This will result in a reduction of total traffic and noise exposure in any single direction.

APPENDIX A

COMMUNITY ATTITUDE SURVEY

1. INTRODUCTION

1.1 OVERVIEW

In order to ensure effective citizen participation in the planning process, it is necessary to learn who represents and speaks for various communities' groups and factions. This information has been generated for the Anoka County-Blaine Airport Master Plan by means of a community structure analysis and a survey of community leadership.

The geographic area covered by the survey includes five communities located near the airport: Blaine, Circle Pines, Lexington, Mounds View, and Spring Lake Park. Six more distant communities are also included: Arden Hills, Coon Rapids, Fridley, Lino Lakes, New Brighton, and Shoreview. Within each community, attention was paid to formal and informal community structures.

Plog Research, Inc., was responsible for the study. Results of the study will help the consultants and the Metropolitan Airports Commission (MAC) to understand how the community perceives the problems associated with the airport. The results will also be used to identify groups and individuals who might serve in a continuing community involvement effort.

1.2 NEED FOR EFFECTIVE CITIZEN PARTICIPATION

When the storehouse of knowledge in the behavioral sciences is examined, it becomes clear that human beings develop strong patterns of habit. It is equally clear that human beings, whether acting individually or collectively, do not respond well initially to changes in their environment. However, in contemporary culture where change is constant, there is a continuing challenge to maintain balanced constructive change between the static and the chaotic.

In the past decade, it has become increasingly evident to planning professionals that citizens will not understand, accept, or support programs of change hich are pressed upon them. The citizen is

frequently right in taking this position. Such programs are often inappropriate because professional planners have had too little input and do not understand the problems. Some communities affected by change have demanded that consideration be made for their ideas. For this reason, citizen participation is now encouraged throughout the planning process.

There has been a continuing history of airport controversy in the Northern suburbs of Minneapolis-Saint Paul, particularly in the communities immediately adjacent to the Anoka County-Blaine Airport. A number of suggestions, plans, options, and ideas have been put forth in the past decade until the airport has become "all things to all people."

Response to the present proposal to develop Anoka County-Blaine Airport as an intermediate facility is also controversial. For this reason, the general goal of the community involvement program is to effectively integrate the local communities into the planning process. The responsibility of Plog Research, Inc. is to provide the best possible information to help facilitate that integration.

Final balancing of political and social considerations as well as environmental impacts, against the system requirements in the decision-making process, is the responsibility of the Commissioners of the Metropolitan Airports Commission.

1.3 HOW TO READ THIS REPORT

The following subsections provide a summary of the content of each of the sections of this Appendix.

1.3.1 Introduction

The introduction to this report includes a brief synopsis of the relationship of the community survey consultant, Plog Research, Inc., to TRA and MAC. The concerns and needs for effective citizen participation, general parameters of the formal and informal survey of community leadership and the continuing community involvement program

are noted. Description of the methodology and brief sketches of the impacted communities are included.

1.3.2 Findings

The findings of this report are based on perceptions of a relatively small but involved sample. Findings are not meant to be exhaustive, but rather information-gathering and representative of community and individual perceptions.

Organization of the findings follows the Discussion Guide shown in Exhibit A-1. Briefly, the topics are:

- Perceived background and history of the airport controversy.
- Major findings: both those which emerged spontaneously and those for which the interviewer was required to probe.
- Perceived need for more air facilities in the Twin Cities area.
- Reactions to specific proposals of alternatives.
- Ideas concerning the ideal solution.
- Expections for ultimate resolution of the controversy.

1.3.3 Conclusions

The summary and conclusions drawn from the findings indicate broad issues as well as individual concerns.

1.4 STUDY METHODOLOGY

Initially, a community survey based on a random sample with followup interviews also on a random basis was considered. While this method would have been exhaustive, valued input of involved and concerned citizens would have been omitted. Therefore, a second plan was developed.

1.4.1 Development of a Representative Community Structure Matrix

Basically, a community can be conceptualized as a conglomeration of organizations involving the formal and the informal leadership structures. In general, these formal and informal structures include members of managerial and political groups, maintenance and civic organizations, and productive and economic groups.

For this project, two other groupings were considered especially important: (1) those organized specifically opposed to airport development, and (2) residents in the immediately impacted areas.

The purpose of this organizational structure was to identify, from different points of view, what the issues are thought to be, and who appear to be main spokespersons in the formal and informal structures.

Major considerations for each category were:

- Managerial and Political -- Elected officials (rather than staff personnel) predominantly at the local level.
- Maintenance and Civic Organizations -- School representatives and those of various religious organizations.
- Productive and Economic -- Individuals who both reside and have their businesses in the locally impacted area.
- Groups Organized Specifically to the Issue - Any group organized to the issue or known to have a strong position, either favoring or opposed.
- Residents of the Impacted Communities -- Focusing on those living close to the airport.

1.4.2 Development of the Discussion Guide

The purpose of the Discussion Guide was to elicit the attitudes, opinions, and concerns of those interviewed. Pertinent topics were drawn from a body of work available in the field of airport planning as well as from background information about the Anoka County-Blaine Airport area. The Discussion Guide is shown in Exhibit A-1.

1.4.3 Development of the Contact Methodology

It was necessary to include an appropriate variety of respondents within each grouping without over-sampling any single one. Initially, names of officials and those active in past airport controversies were obtained from published records and newspaper files.

Telephone calls were made to arrange interviews. Each person interviewed was asked to suggest names of other potential interviewees, and in this way, a substantial pool of names was developed.

1.4.4 Development of Interviewing Guidelines

The basis for selecting the interview location was where the interviewees felt most comfortable -- home, public facility, place of business. The length of each interview was determined by available time for adequate subject coverage.

At the beginning of each interview, the non-advocacy position of the interviewers was stated. Interviewers also indicated they had no knowledge about the airport, their responsibility being to listen rather than to offer information.

1.5 DESCRIPTION OF THE COMMUNITIES SURROUNDING THE AIRPORT

The eleven communities located near Anoka County-Blaine Airport are located in the Minneapolis-Saint Paul area known as the Northern suburbs. Major growth patterns in the Twin Cities area have moved more slowly north than in other directions. However, in recent years these communities have experienced rapid residential expansion as well as commercial and industrial growth.

1.5.1 The Five Communities Closest to the Airport

Five communities are located near the airport. These are Blaine, Circle Pines, Lexington, Mounds View, and Spring Lake Park. A brief description of each follows.

Blaine

Largest of the five communities, Blaine is mainly in Anoka County, with

a small corner in Ramsey County. Approximately 31,070 people reside in Blaine's 33 square miles. The Anoka County-Blaine Airport is in Blaine, takes approximately 10 percent of the land area, and divides the community.

Blaine is also separated into three school districts and three municipal districts. District 1, sometimes called "Old Blaine", has close ties to the Ramsey County communities of Mounds View and Spring Lake Park. District 2 includes parts of "Old Blaine", new housing developments, and a combination of farm-residential zoning. District 3 is located near Circle Pines and Lexington.

Because of the high water table and the large amount of peat present in the soil, 60 percent of Blaine's land is undevelopable. Of the remaining 40 percent, 25 percent is reserved for residential, and 15 percent for commercial-industrial. At present, Blaine is approximately 45 percent developed residentially, single-family and multiple dwellings, as well as five trailer parks. One major electronic firm employing 500 local people, several trucking depots, and a broad variety of service businesses are located in Blaine. More than than half the local residents leave the community to work.

Circle Pines

Circle Pines is two-and-a-half square miles with a population of approximately 4,100. It is situated two-and-a-half miles from the east end of the Anoka County-Blaine Airport. The community, founded in 1946 as a cooperative development, retains vestiges of its idyllic beginnings. These are manifested in a community-owned credit union and gas company. The original spirit is kept alive by another community enterprise, The Circulating Pines newspaper.

Land in Circle Pines is almost totally developed in single-family homes. One major industry, and the community-owned business employ some people locally. Others commute to the Twin Cities areas.

Lexington

Lexington, less than one square mile, has approximately 2,400 people.

It is one mile east of the airport. Lexington is approximately 90 percent developed, 50 percent homes, 50 percent mostly local business. Approximately 70 percent of the people who live in Lexington work elsewhere. Although the community is thought of as relatively stable, a recent reevaluation has resulted in some redivision of property and some rebuilding.

Mounds View

Mounds View, situated directly to the south of the Anoka County-Blaine Airport, has a population of approximately 13,340. The community of four square miles is 95 percent developed, with approximately 2,500 single-family dwellings, 600 mobile homes, and 1,200 apartment units. The majority of residents commute to work in other areas. Highway 10 intersects the community of Mounds View.

Spring Lake Park

Spring Lake Park is also intersected by Highway 10. The community is located directly southwest of the Anoka County-Blaine Airport. It is two-and-a-half square miles and the present population is 7,370. Spring Lake Park is approximately 25 to 30 percent developed in business and small industry. Approximately 70 percent of Spring Lake Park is made up of single-family, duplex, and multiple dwellings. The majority of people own their own homes.

1.5.2 Six Other Communities in the Airport Vicinity

Six additional communities located near Anoka County-Blaine Airport are included in the study. The six are Arden Hills, Coon Rapids, Fridley, Lino Lakes, New Brighton, and Shoreview. Each is described in the material which follows.

Arden Hills

Arden Hills is approximately 18 square miles with a population of 7,450. The community is located six miles southeast of the Anoka County-Blaine Airport. One-third of the area is a federal arsenal. The remaining land is almost 100 percent developed with approximately 1,800 single-

family owner-occupied dwellings, two college campuses, a large retirement facility, and corporate headquarters for several national companies.

Coon Rapids

Coon Rapids, located in Anoka County, is 25 square miles with a present population of 37,500. The community is two miles west of the Anoka County-Blaine Airport. Fifty-four percent residential, Coon Rapids is presently three-quarters developed, mostly in singlefamily dwellings. The economic base, 65 percent developed at present, is in commercial property and two major industrial parks. More than half the residents leave the area to work.

Fridley

The community of Fridley has a population of over 30,000 and is 11 square miles. It is situated approximately two miles south/southwest of the Anoka County-Blaine Airport. Twenty-seven percent (high by comparison with the other Twin Cities communities) of Fridley is zoned industrial-commercial, presently 60 percent developed. Two major firms are located in Fridley. Residential areas are 97 percent developed, 85 percent single-family owner-occupied homes, 15 percent multiple-family dwellings, and one mobile home park.

Lino Lakes

Lino Lakes, four miles west of the airport, is 36 square miles, with a population of 4,760. Approximately 50 percent of the land is developable. (A county park and a water district take up nondevelopable acreage.) Lino Lakes is 15 to 20 percent developed, 99 percent in single-family dwellings. There is no sewer to support industrial development at present, so little industry exists. Lino Lakes is in three school districts. Most residents work outside the area.

New Brighton

New Brighton, two miles due south of the airport, has a population of approximately 24,000 people. It is seven-and-a-half square miles. New Brighton is about 85 percent developed, 99 percent single-family owner-

occupied residences. Multiple dwellings are about 25 percent owner-occupied; there are two trailer parks. Several firms are headquartered in New Brighton, which is approximately 85 percent industrially developed at present.

Shoreview

The community of Shoreview, approximately four miles southeast of the Anoka County-Blaine Airport, is thirteen-and-a-half square miles. The population is 16,650. Mainly residential, approximately 95 percent of the available land is 80 percent developed in single-family owner-occupied dwellings. Most residents leave the community to work. A number of tall television towers are located in Shoreview.

2. FINDINGS

2.1 INTRODUCTION

Over a period of several weeks during July and August, 1979, 71 in-person interviews were conducted with a total of 149 residents of the Anoka County-Blaine Airport area. Another 15 interviews were conducted by phone.

Interviews were held wherever most convenient for the interviewees, a local home, place of business, City Chambers, libraries, restaurants, and public halls. Willingness to accommodate the researchers was overwhelming. The interviewers were frequently told this was the first time anyone had "listened to their side of the story."

2.1.1 About the Interviews

Part of the responsibility of Plog researchers was to provide confidentiality to respondents. The decision to neither include names of respondents in this report nor attribute quotes directly to any one person is a continuation of respect for that confidentiality.

Throughout the report, wherever possible, if a majority view developed, it is noted. The same is true of minority views.

The terms "opponent" and "proponent" are used frequently throughout this report. These terms can be taken generally to mean that respondents either oppose or favor development of the airport as an intermediate category facility. **However, because the term "upgrading" is interpreted in such a variety of ways, no indication of consensus can be deduced by use of the terms.**

2.1.2 About the Content of the Study

In reading this appendix, it is most important to remember that people act on the basis of their perceptions. The Discussion Guide was designed to elicit perceptions -- **what people perceive to be taking place with the Anoka County-Blaine Airport project.** The body of the report,

then, relates to these perceptions -- points of view which may or may not be in accord with actual fact.

It is also important to recall that the findings are based on a sample small by comparison to the entire population of the area. Moreover, the sample was not selected through the use of scientific random sampling methods. For the most part, respondents were chosen because they were known to be more involved, more interested, and potentially more knowledgeable about the airport. Therefore, while they may represent or speak for others, that is not necessarily the case.

2.2 PERCEIVED BACKGROUND AND HISTORY OF THE AIRPORT AND THE CONTROVERSY

For the most part what is remembered about the history of the airport and ensuing controversy depends upon how long the respondent has lived in the area, and when and how he or she became involved.

2.2.1 Early Remembrances

Natives and long-term residents remember a time during World War II when the airport was only a grass strip and "they were fighting about it even then!" A 50-year resident says, "First they complained because they didn't want it, and then, after it was built, they complained that it wasn't big enough." Another native of the area, a current proponent of airport development, remembers with a certain amount of anguish when the present airport site "took our farm and demolished our home."

Yet another long-time resident, actively against the development, recounts in detail his involvement and antagonism to the proposed National Guard move in the 1950s. "They wanted to make this an overhaul base up here. The Air Force was going to come in too. But we fought that and got rid of it."

2.2.2 The International Airport Controversy

Whether they themselves were active at the time or simply recall others speaking of it, the proposed Ham Lake International Airport site is frequently referred to as the beginning of the present controversy. (The Anoka International site and the other Northern Area Search Sites are infrequently remembered.) Those favoring a Northern Area International Airport developed a pro-North support group and "thought it was great for the area." Many proponents never truly believed the airport would come North "because there was too much power in the South but it was great exposure." More than one person credits that exposure to the current economic expansion in the Northern suburbs.

Opponents to the Ham Lake site feel they and "the Carlos Avery people, the environmentalists and the University of Minnesota people" were responsible for dispatching the proposed international airport. But the development of larger jets and their effect on the site selection is also noted.

For people active in the Ham Lake controversy and presently opposed to the development, there is weariness about the response -- "What! Again? I thought we buried that thing once and for all." Many perceive the airport issue to be "one long fight of them against us." This perception is fueled by confusion and lack of information. Some perceive the present proposal to be a repeat of the North Site proposed International Airport.

2.2.3 The National Guard Helicopter Controversy

The National Guard's proposed move to Anoka County-Blaine Airport approximately two years ago created an enormous uproar. People who had never paid much attention to the airport, in fact who hardly knew its location, suddenly became aroused and incensed. This arousal intensified anti-airport sentiment of past years and angered new residents, blossoming into a real controversy.

According to reports, the National Guard has been training at the airfield intermittently for the past four or five years. "But they were

having problems with flood control at their base and wanted to move." Initially there was considerable support for the move. A group of people, mostly from Blaine, actively sought the move, feeling the trade-off of an armory (to be used as a community center by local residents most of the time) and other benefits equalled if not surpassed any disagreeable effects that might occur.

But when National Guard helicopters began to appear in large numbers on weekends and "hover right over our backyard," "look down at us all the time," and "make that 'whupwhupwhup sound' all day long," then an overwhelming anti-Guard, anti-helicopter feeling arose and remains. "The timing was bad and the noise was just too much." Many people were alienated, aggravated, and fears of an international airport rose to the surface once again.

The National Guard issue is not thought of as settled by all opponents. Some know legislation was enacted through the efforts of State Representative McCarron. But the majority think the issue is "dormant rather than dead."

The announcement that Anoka County-Blaine Airport would be classified as an Intermediate Airport is perceived by many to have been poorly timed since the helicopter controversy had not been forgotten. In the minds of most it was all part of the same issue. Groups already organized to oppose the issue began serious in-depth studies of present, past, and planned airport status. Extensive materials have been compiled including notes on the historical context, reports from MAC, Metro Council, environmental statements, and other information pertinent to airports in general and to the Anoka County-Blaine Airport in particular.

2.2.4 Development as an Intermediate Category Airport/The System Plan

Another controversy mainly involving Mounds View residents, took place at a Metro Council hearing held at Spring Lake Park High School in late Fall, 1977.

At this hearing, 200 residents speaking on behalf of the 1,200 who had signed a petition were asked not to repeat opposition to issues. Wishing to "play by the rules," not everyone spoke. Even so, it took four-and-a-half hours to record the testimony. In the end, that testimony was reduced to two-thirds of a page in the summary. Worse still, in the eyes of the residents of Mounds View, it did not accurately reflect their concerns. Instead of indicating the number of people actually opposed to a particular issue, only the number who spoke was recorded.

The Metro Council hearing on Highway 10, held in June 1979, is remembered for a different reason. By now the airport controversy for many had become intertwined with the Highway 10 issue. Thus, when the public hearing for Highway 10 was held, people believing the issues as combined, became angry because they were not allowed to speak about the airport issue or obtain information. This infuriated those who attended the hearing and intensified resentment of perceived bureaucratic attitudes about ordinary people.

2.2.5 Development as an Intermediate Category Airport/The Master Plan

At the time of this research, approximately a quarter of the respondents were not yet aware of the recent two-year moratorium to prevent development of the airport legislated by State Representatives Gordon Voss and Paul McCarron in June 1979. Opponents to the airport regard Representatives Voss and McCarron as local heroes. Proponents see the legislation as a political maneuver by legislators in the South to prevent economic expansion in the Northern suburbs.

How the moratorium will be interpreted is not yet defined. One opponent states that "not a thing can happen out there, not even a blade of grass can grow." Many opponents interpret the moratorium to mean that nothing can ever happen at the airport. Still others note that it will take two years, the duration of the moratorium, to complete the studies prior to any changes.

The research team from Plog Research, Inc. is seen as part of the ongoing history and controversy of the Anoka County-Blaine Airport.

Responses range from hostility and suspicion to interest and hope. The majority seemed pleased, albeit skeptical, to have the opportunity to air their concerns.

2.3 Major Issues: Probed For and Spontaneous

There are no simple groupings -- community, profession, political affiliation -- that can be used to categorize who is opposed to or favors development of the airport. There are many versions of what development as an Intermediate Category facility might mean or what development as a Minor Category airport will entail. But of the number of individual issues and general concerns which emerge from this research, **the most pervasive and prevailing are seen as trade-offs between personal quality of life and potential economic benefits. The unspoken and underlying questions are: What are the trade-offs? Who decides what for whom?**

2.4 GENERAL ISSUES

A number of general issues surfaced during the interviews. They are explained below.

2.4.1 Personal Quality of Life

Concern for the quality of life is not limited to those who oppose the airport. However, it is the opponents' major concern. It surfaces in a variety of ways, clearly articulated at times, but more frequently buried in other issues --noise, safety, pollution, "our homes, our children, our schools."

"The people were here first"

This phrase was heard many times. It does not mean that all the people presently living around the airport were there before the original airport. It means...

> "...there are a hundred thousand more people living in the impact area now than when the Ham Lake site was investigated. This expansion is too late. The area is too heavily populated now."

"We were here before they decided to change the airport."

"We came out here sixteen years ago to be quiet, now it's all those helicopters and noise."

"The people were here first" also refers to a specific incident involving the community of Mounds View. Originally, land south of the airport was little developed; only a few dwellings were built on hummocks above the high water table. Several years ago developers approached the Mounds View City Council with plans to build residential dwellings in the area directly south of the North/South runway.

The Mounds View City Council was in the process of preparing their Comprehensive City Plan for Metro Council approval. "Metro Council was approached as to what was going to happen at the airport. Would it be expanded? Metro Council assured the residents of Mounds View, through their government, that the airport would not be expanding."

The housing developers proceeded with their plans. Shortly after permission to develop residential dwellings was obtained, Metro Council announced plans to develop the airport as an Intermediate Category facility. By this time, Metro Council had accepted Mounds View's Comprehensive Plan, which allowed the housing development.

Now several million dollars worth of new homes are situated south of the runway of Anoka County-Blaine Airport. Ranging in price from $60,000 to $120,000, these homes are, in the eyes of the owners, in the eyes of the present and past City Council members, and in the eyes of the community, legitimately "there before the airport."

Importance of the Home

For the majority, the home is their most important possession. It is tangible security, life savings, investment, retirement -- everything. Many who are so opposed to the airport are not movers. "We buy and dwell rather than buy and sell." For these suburban dwellers there develops:

> ...An intuitive dissatisfaction with outsiders who come in, with their big money, their power, their everything, and run over the little guy who has invested not only his financial resources but his time, his energy, his life, into his home. There ought to be a law...

And when it turns out that there is a law, and it is not much in favor of the small homeowner, then "people are put into a position by government action that ought not to have happened."

The question arises "Should the good of the many be traded off for the benefits of the few?" If the answer is yes, without consultation or consideration, then the results "are like Hitler, Russia, China." More importantly, if the decision is made without input of the people, and is made by those not elected to represent them, "then this is not unlike another time in our history when the dissatisfied dumped tea in Boston Harbor."

Quality of Neighborhood

"Owning a home is important for pride." Basically, most who moved into the area did so because they could acquire more for their money -- more house, more yard, "more serene residential area." Moving North was a way to achieve "the good life like the wealthy southern suburbs, but without all the social climbers, status, and without the bills too."

A very important quality of this life is the small town atmosphere as manifested by the neighborhood. Neighborhood translated into a number of concepts -- lots of space, a big yard, broad tree-lined streets, "where I can look out my kitchen window and watch squirrels and birds and the occasional deer." It means near the schools and near the churches although it may mean "far from my work." The lifestyle is "leisurely and pressures few. Women don't have to work."

One gentleman, eloquent in his plea for serene neighborhoods, works daily in the inner city restoring homes and reviving neighborhoods where breakdown in traditional structures has caused major urban

decay. The noise and disruption from a potentially upgraded airport, the increased surface traffic on side streets including his own, in addition to other changes he envisions, will disintegrate his neighborhood. "And when the neighborhood is in shambles, the family and the community will fall apart. I don't want that to happen here."

The "Not Like..." Thought Pattern

Aside from no airport, it was frequently easy for people to articulate what they didn't want: "...not like Bloomington," "...not like South Minneapolis," "...not like around International Airport."

These locations are where some grew up. Others have relatives and friends who live there still. They talk about "stopping conversations while the planes take off and land," "losing television transmission every few minutes," "dishes rattling and cracks on the walls." These are visual manifestations of phenomena they don't like. They live in or have moved to a place that doesn't have those happenings and they don't want them now.

Social Impact on Family Existence

Social impact on family existence is related closely to neighborhood quality. "The effect of noise on everyone increases stress, and that causes the family to break down." The home is no longer a "nice place to come to." Perceived potential economic benefits resulting from expanding the airport's function are not worth the costs as the majority of people see it. "We would like the economic development, but we don't want all the other things that go with it."

2.4.2 Potential Economic Benefits

There is keen awareness that trade-offs between potential economic benefits and personal quality of life is a vital issue. "While the sympathy is with those people that live under the flight patterns, this area is just growing and that's that."

That fact is not in question. The 100,000 people who have moved to the Northern suburbs in the past 10 to 15 years have created need for many

services. These needs are evidenced by the numbers of restaurants, shopping centers, banks, and churches -- all recently built -- that dot the countryside.

Reasons forwarded for this Northern expansion are that both land price and development costs are low. "Land here is as little as $200 per industrial acre whereas it is 800 in the South." There is the feeling that "the urban pressures are to develop the land and the developers are willing to develop." And, "if a business has to move, why should it move to Rochester? Why shouldn't it move to the North?"

As far as trade-offs are concerned, expansion proponents say:

- "There are just two factions, those who want to stay in the past and those who want to grow."
- "People came here to escape. They are opposed to progress. You can't escape progress."
- "There are those that want the technology and the benefits -- the benefits here, the technology in the South."
- "There has to be a willingness to accept the responsibility for the social value of the surrounding communities, to accept the responsibility to support more than yourself, or move on."
- "The people came here because they wanted to change. Right after they came, then no more change was supposed to happen."

Relationship of Economic Expansion to the Airport

Enthusiastic supporters for economic expansion in the Northern suburbs see the airport as only part of the trend. The perception is that nothing important is moved to the Northern area as a result of Metro Council decisions, "except those that don't produce income. Instead of the zoo, or the stadium, what we get is that youth facility which is tax free." Therefore, communities with developable industrial, commercial, and residential areas are actively seeking economic infusion.

In recent years, several trucking firms have relocated from inner parts of the city. A number of small- to medium-size companies have moved

or will be building corporate headquarters or satellite enterprises in the Northern suburbs. This provides local employment in that "the Northern suburbs are already heavily into the building trades. About one in every three or four people works right around here for a contractor or builder."

At least one firm is said to have relocated because the owner flew his private plane out of Anoka County-Blaine Airport. When his company was sold to a major conglomerate, his suggestion that their new facility be located near the airport was followed.

Economic Hopes

While there is great enthusiasm for what may result economically with airport development, most of the enthusiasm is practical. The advantages are throught to be:

- "Stimulating an air-oriented industry and also stimulating additional commercial industry."
- "Will have a positive effect on the area, especially the tax base and the relationship to the schools."
- "Should bring a more balanced community. We have to go out of the community for so many services now and we don't like that."
- "There will be more employment and the chances for larger employers coming in are better."
- "The trucking industry could work together to bring decent manufacturing here."
- "It might bring more light industry, motels, restaurants, subsidiary services."
- "There might be some corporate headquarters that come here and while no one is likely to move from the South to the North, maybe we'll get some spin-offs, a division, or some warehouses."

Concerns by Opponents

According to reports, one MAC spokesman has said, "The airport will

have no great economic impact on the area. The businessman downtown won't move up here." Opponents fear potential penetration by unattractive industrial development bringing with it the "wrong kind of people" and pollution. There is strong feeling that proponents of the airport have grossly misjudged the industrial benefit. "The only way to get lots of activity is to make it a major commercial airport and nobody wants that."

Location of recent buildings is noted. "We could have done zoning trade-offs 10 or 15 years ago and put the industry near the airport, the homes far away." The concern now is that business and industry will "pop up willy-nilly."

Complications of Fiscal Disparity

When discussing local economics, the issue of fiscal disparity complicates matters. According to one long-term resident:

> Ten years ago, the thinking was that it would be better if a community was half industry and half different kinds of housing. But then about five years ago the fiscal disparity bill passed. This had to do with sharing revenues. It said it is okay for a town to be a bedroom community. So towns with no economic base don't have to seek one to survive. Instead, a certain portion of the revenue generated from business in another community that has a broader economic base goes to the suburban community.

Thus, the fiscal disparity bill alleviates pressure on the part of suburban communities to be anything other than residential. In turn, it frustrates the efforts of a community with many times the developable land in the quest for broader economic base. Results of fiscal disparity are seen, then, to further complicate the airport issue.

2.4.3 The Communications Gap

For both opponents and proponents, one issue is outstanding -- **a serious lack of information.** One perceived reason for this serious information gap is government mismanagement of communications. A commonly held notion is that information is being deliberately kept from people --"because they intend to do something big out there."

Another reason for the information deficiency is lack of available media which reaches everyone. Much information is exchanged by word-of-mouth. Not all the same newspapers are read or the same television stations watched. Nor are newsletters shared, bulletin boards seen by all, nor does any other kind of centralized news network distribution exist.

There is a strongly perceived idea that the information flow lacks two-way direction. Opponents of the airport see themselves as providing all the information that is necessary: **"WE DO NOT WANT THE AIRPORT."** Information flow the other way is perceived as nonexistent. A few people have "learned who to telephone at which agency about what problem." Many others now recognize that the problem is one of "too many agencies all in the same pie," but lack of information is yet a major complaint.

Conclusions reached about the airport on the basis of poor information or none at all have engendered suspicion, hostility, anger, and many questions. Examples of questions arising and the variety of responses are:

- Question: What <u>is</u> the name of the airport?

  Responses:

  - "Blaine"
  - "Anoka County"
  - "Ham Lake"
  - "Janes' Field"
  - "County Airport"

- "University of Minnesota Airport"
- "Anoka County-Blaine Airport"

o Question: What is the present function of the airport?

Responses:

- "It is functioning as an intermediate airport right now"
- "It is a minor airport by law, that is what Voss and McCarron did."

o Question: What is the designation of the airport?

Response:

- "It is a minor airport that can be used by D and E planes only."

o Question: Is it an intermediate airport right now?

Response:

- "It can be used by anyone who wants to land out there."

o Question: What does it mean to develop the airport?

Responses:

- "a utility reliever"
- "a light utility reliever"
- "a commercial reliever"
- "general aviation airport"
- "aviation reliever"
- "general reliever"
- "key system"
- "landing strip system"

- Question: Can jets land there now?

  Responses:

  - "No, it is against the law (McCarron's law). They can't, but there's at least one out there right now."
  - "A 747 can land there if it wants to."
  - "They questioned this at Crystal and found out that any jet can land there."

- Question: Does upgrading mean that Northwest Orient and the rest of the jets will come here?

  Responses:

  - "They'll never switch from International. They will bring only their cargo planes here."
  - "Commuter flights will come here. It will be a reliever for O'Hare [sic] Airport."

- Question: Why don't officials know what is going on?

  Responses:

  - "They don't read each other's documents."
  - "They <u>don't</u> know what's going on."

- Question: Don't they talk to one another?

  Responses:

  - "They do. They all want this thing to go through and that's why they're doing it. This is all a big scheme."
  - "They don't talk to each other."

- Question: Who's in favor of developing the airport anyway?

  Responses:

  - "I don't know anyone that's for the developing of the airport."
  - "The Chamber of Commerce and the business community are."
  - "The City of Blaine is and all of those big landowners are too."
  - "The Daytons and Davidsons and all those people down in the South want it. They don't have an airport where they are though."
  - "By 1982 the Pentagon wants it."
  - "The speculators and supervisors and officials. They are privy to special knowledge."
  - "The industrial and trucking development already know about it here. They have wind of the airport coming and that is why they moved here."

The combination of information gaps, unanswered questions, and concerns about the quality of life, plus the notion that there are secret plans for the airport, all lead to considerable apprehension and anxiety:

- "They are only telling you a little bit right now. They are planning a lot for the airport. That's why they have so much land out here."
- "The airport is never on the agenda and it is not referred to. There is no discussion publicly but they are sneaking the plan in the back door."
- "The man with the sound (truck) has been here and there"s never been anyone taking off and landing, so whether he's really legitimate or not we don't know."
- "Metro Council has made up its mind. They need to use the land by 1985. They lose it if it's not used."

- "They'll take an inch until they have what they want."

High Level of Fear

Among a small number of people, there is evidence of excessive suspicion, hostility, and anger. For these airport opponents a real paranoia appears to be developing, with mention of phone taps, police lists, being followed, and harassment at work.

In this context, the words used in MAC, TRA, Metro Council, and Plog reports -- community profile, leadership profile, others -- have been interpreted to mean "psychological experts are preparing dossiers to be used against us by the CIA, the FBI, or someone who knows something." The idea that a secret plan exists prompts these comments:

- "The airport is very important to someone."
- "There is already a master plan hidden away somewhere and they are trying to bring it around. That's why they brought Plog Research in."
- "A group of people want the airport enough to hurt other people if they stand in the way."
- "There are secret plans for the airport expansion, secrets that the big landowners have and the trucking firms know something that the rest of us don't."
- "It will be a central Air Force base of the Capitol of the world when it is all one regional government."
- "It will be a second International Airport with no benefits for this area, only cargo. Why do they have to extend the runways to 8,000 feet? Wold Chamberlain is only 9,000 feet. It proves that they are certainly going to do more than they are telling us."

However, for the overwhelming majority interviewed and responding, the issues are straightforward and the concerns, whether for personal environment, economic expansion, or both, are profoundly important.

At present there is a verbalized need for more input and information.

- "We need information and facts to discuss this intelligently. The credibility of statements of MAC and of others is not clear at all."
- "It's hard to react because we don't have any information."
- "Some things might be of benefit, it's just that we don't know anything about it."
- "It's all censored so completely that it's hard to make any judgments."

Public Perception of Government Agency Staffs

At least part of the miscommunication and perceived "bungling of things from the word go," is blamed on government agency staff. Conflict develops between professional staff personnel and "the ordinary people" who see agency staff coming between them and their own officials and representatives. A major complaint voiced about agency staff in general is an inability to obtain or have access to the right information, thus hindering efforts by ordinary people to be involved or influential in decision-making processes.

Staff personnel are also thought of as taking independent action not viewed as in the best interest of community residents. Harried and in some cases part-time officials "are fed what staff wants them to hear and they have then little time for what the people want." As people often feel they want something different, staff personnel are seen as impediments, suppressing information which does not "fit with their schemes." Criticism is directed toward idealistic young planners who encourage with utopian ideas. "All those fancy plans aren't too realistic when you get out here in the community."

An Identifiable Positive Note

Some respondents mentioned enhanced communication as a positive attribute of this controversy, "getting together with others who feel the same way." For proponents, this means pilots discussing the issues with government agencies and with people in the business community. For opponents, it translates to "the citizens in the community becoming

more aware" with greater communication both "within the community and among communities." For example, members of Mounds View local government "have accepted the responsibility of going to other city councils requesting they pass resolutions against the airport." How this is viewed varies from community to community, in some cases as intrusive, in others informative.

2.4.4 The Effects of Regional Government on Local Citizenry

The effects of regional government on local citizenry undergirds many other issues. It surfaces repeatedly in one form or another. The regional issue is seen as pitting appointed (by the Governor) officials against elected representatives at both state and local levels. A profusion of emotions and feelings emanates, ranging from rage to resignation. Hardly anyone is without an opinion.

- "Metro Council, from an original land use coordination monitor, has changed considerably. They are now in a power position and this brings friction."
- "It's the appointment of a very select group with the power to tax and that is no good. There is no communication and what there is is by their request only."
- "Suddenly we are not an entity as a city but part of a whole. Who decides who will benefit from what becomes a problem. They want to alleviate something somewhere and then they make a problem in another area."
- "The mathematics is all wrong. When you elect 65 people to represent you and then someone else gives the power to 18 people it doesn't come out right."
- "They're not politically accountable and they keep things hidden until decisions are made."
- "They don't attend each other's meetings even though they are supposed to by law, but the law is not enforced."

Artificial Boundaries

Regionalization brings about development of artificial boundaries. Communities may be separated into three or four municipal districts. The school districts cut across as many as three communities. Legislative districts differ from Metro Council districts. There are judicial districts, congressional districts, sewer districts, water districts.

The County Commissioners are responsible for administering yet another bureaucratic district. And then there are the agencies -- MAC, the Minnesota Department of Transportation, and others -- and their spheres of responsibility and influence. To add to the confusion, stronger loyalties may develop for the artificial unit, e.g., the school district, than for the more natural boundaries, e.g., the community.

Local citizens indicate they have "just about had it" with regionalization. They end up "falling through the cracks in the bureaucracy" and they are tired of it, angry about it, and frustrated by it. "We have, in its infancy, a regional government coming in conflict with local control. We would like them to coordinate but not to dictate."

Those who have tangled with the bureaucracy once or twice come away "stymied and soured. The necessity to go through all that friction was very unpleasant no matter what the issue was." This feeling is augmented by perceptions that "city staff and government staff are all working with each other and it's the staff against the people." There is strong feeling of individual impotence when confronted by the bureaucratic intricacies. Expectations of how "the system" should respond to individuals and communities in this present controversy is indicated by one observer:

> The bureaucratic structure must play fair with the community and the community must perceive it is being played fair with. The credibility of TRA, Plog, MAC, and Metro Council is on the line.

Being "Punished"

Another problem of regionalization is the perception of being punished for not doing as Metro Council directs:

> We didn't get any funds for storm sewers from Metro Council because our city refused to put in low cost housing. We assessed our situation and developed our community in what we feel are our best interests rather than in the best interest of the Minneapolis/Saint Paul area as a whole. Therefore, we have to figure out how to pay for our storm sewers and drains by ourselves.

The Forgotten North

Another effect of regionalization is described in such words as "forgotten," "abandoned," "dumped on -- literally." Apparently a recent issue actually did propose that a diseased tree dump be located in the Northern suburbs. The word "dump" has now become a "catch word" for the idea that "they are trying to dump on us all the things that they don't want."

There were repeated mentions of a minimum security institution being upgraded to medium security, creating anxiety among local residents. Another security facility was thought to have been proposed for the Northern suburbs recently. The affluent suburbs (none thought to be in the Northern area) are seen as powerful and "what they want they will get. More important, what they don't want, what is unpleasant in their lives, they'll dump on us."

This sense of abandonment frustrates opponents. They feel the airport is here because it is not wanted anywhere else. They envision themselves as "poor people at the mercy of the rich down South." Those who favor airport expansion are equally frustrated. They recognize that obvious growth and expansion is currently taking place in the Northern suburbs. They would like the recognition that it is happening from Metro Council as well as more visible signs of support.

Although the "old names, the Daytons, the Davidsons," were mentioned occasionally in terms of power, proponents were quick to point out the

new Chairman of Metro Council is from Anoka County and the Executive Director of the Minnesota DOT also lives in the Northern suburbs. Both are considered positions of great power and the hope is that more positive progress North will be evidenced soon.

2.4.5 The Highway 10 Issue

In the eyes of many the airport issue has become inextricably intertwined with another extremely sensitive issue -- Highway 10. It is thought that the two issues are tied together and that the responsible agencies (MAC, the Minnesota DOT) are also working together. This notion arises because:

- The present spur from Highway 35 that will become the link to Highway 10 ends at County Road J located immediately adjacent to the southern boundary of the airport.
- The proposed extension continues along the southern boundary of the airport and then cuts across a small corner of MAC-held airport land. (This is taken to mean the two agencies cooperated on the issue.)
- One of two presently proposed interchanges involves Red Oak Drive (in Mounds View). Red Oak Drive is directly south of the North/South Runway. Not only is there concern for what will happen to the area, the neighborhood, and the surrounding community when the road is widened, but there is apprehension that MAC will put their approach lights "on top of the telephone poles," "on top of the houses," "even down the middle of the road."

Homeowners on Red Oak Drive are upset and organized. According to one respondent, "it is again the case of the bureaucracy deliberately deluding the individual, with perhaps an occasional real estate agent deluding as well." This reference acknowledges that Red Oak Drive "instead of being just another local street," is in fact a county road which, along with the rest of the Highway 10 project, has been projected for upgrading or potential interchange for some time.

At least three citizens' groups formed initially against the airport, are now actively against the combined anti-10/airport issue. In turn, other homeowners and groups, especially those near the flight paths, are beginning to regard the issues as combined. Highway 10 opponents who live near the proposed Blaine interchange have incorporated opposition to the airport into their fight.

Highway 10 has been planned for approximately 20 years. The present design projects it crossing County Road J (including the highway-airport section), continuing near Blaine City Hall, and intersecting the present Highway 10 at the Coon Rapids line. According to this plan, approximately twelve homes would be demolished, the path would cut through some residential sections and near at least one school.

The alternative route, developing Highway 10 more or less along its present path, will create other problems. It may dislocate between seventy and several hundred businesses and homes, and will also divide northern and southern sections of Mounds View and Spring Lake Park.

The combined airport/10 issue in some cases affects support for each. The total Northtown Corridor Plan includes a bridge over the Mississippi linking Northern Ramsey County and Southern Anoka County more firmly to the Twin Cities area. While many are felt not to care one way or another, some (e.g., Representatives Voss and McCarron) are said to support 10, yet are against airport upgrading. Others do not regard both issues as equally unattractive.

There is evidence of growing unity among some other facets of the community. It is possible a pro-10 group may emerge to promote that issue and may provide support for the airport as well.

2.5 SPECIFIC ISSUES

Some specific issues also came up during the interviews. These are detailed below.

2.5.1 Noise

In discussing specific issues, the first mentioned is usually noise. For a very few -- mostly airport proponents -- noise is not an issue, but a given.

- "The airport was there first."
- "There is nothing you can do about the noise."
- "The experts will take care and make sure noise levels are not exceeded."
- "I don't know anything about it, I'll leave it to the experts."
- "The older primitive aircraft are a lot noisier than the new ones."
- "The noise will only bother a few anyway. If you buy and build near the airport you'll always have to sign a statement on all the loans about airports and noise."
- "Snowmobiles make more noise than any airplane."

Noise also translates into specifics. For those who remember the National Guard incident, noise immediately means helicopters. And helicopters are not desired by either proponents or opponents.

For opponents a few single-engine planes, making little noise, flown by responsible people, at sensible hours, seem acceptable to almost everyone. It is the addition of the "more" which produces mounting criticism.

More Planes

Residents living at the end of the runway, pilots who use the airport, and others in the general vicinity perceive that small plane air traffic, and in fact all traffic, has drastically increased in the past two years, especially in recent months.

The perceived increase is attributed to Anoka County-Blaine Airport being a local airfield. Instead of other recreational sports, e.g., snowmobiling, skiing, local people take up flying. Some own their planes, some fly with others, and some rent aircraft. The increase is also

attributed to "the fact that people know the airfield is going to expand and they want to get their space before they are all gone." Increased business use is specified as yet another reason and the greater number of business planes flying in and out is evidence. "It is functioning as an intermediate airport anyway -- MAC is trying to sneak in by sending more planes up here and then saying it's necessary to upgrade. They have jets out there right now."

More Noise

The jet is thought of in connection with both noise and safety. Jet noise is more aggravating for many than "just planes." For the most part, small planes are not thought to have very disastrous crashes. Jets do. Jets are thought of as big and also as military.

People attending the jet demonstrations sponsored by MAC, the Chamber of Commerce, and others, were "startled because the jet made quite a bit less noise than one of the small single-engined planes." Residents close to the airport, especially those directly south, say "the jets are much less noisy than the little ones buzzing the house." However, residents living several blocks from the airport report the jet as more noisy than small planes. Very little reference is made to larger propeller-driven planes, the DC-3, or the two-engined private planes. When they are mentioned, it is more in terms of having seen than having heard them.

More Responsible People

Both noise and safety are issues associated with student pilots. There is a perception of a proliferation of student flying schools, flying services, rentals, sales, and other aircraft facilities. It is assumed that students fly poorly, and are responsible for a great many of the things that people in the surrounding community dislike. Besides "buzzing houses," there is the matter of "practicing takeoffs and landings right over the homes," "flying in and out at only 500 feet," "practicing touch-and-goes at the wrong end of the runway," and "starting early and going late."

Comparison was made with cars "dragging" up and down the highway. "After all, if a car was going up and down the highway making all that noise a ticket would be issued. Why can't that be done at the airport?" The question was asked why airplanes can't have mufflers on them just as do cars. Indeed, many feel aircraft makers should be required to standardly equip planes with them.

Noise and The Schools

The anti-noise issue and the safety issue are both frequently connected with area schools. Several schools are near the airport, some in the direct flight paths. There is anxiety expressed that noise will simply disrupt classes. "We'll have to wait every few minutes while a plane passes overhead because the noise level is so intense that learning cannot take place."

There is also apprehension expressed involving the effect of noise on learning. Results of research on a variety of studies, including the relationship of noise to stress, emotional disturbances, and learning have been gathered by several homeowners:

> There are nine schools in the Mounds View School District (#621) involving 6,000 students in schools from an eighth of a mile to 4.6 miles, six within two miles. By safety and environmental standards from several sources, it is considered questionable whether this is permissible.

2.5.2 Safety

Safety is mentioned more frequently and by more respondents than any other single issue. It is frequently mentioned in relation to noise, as well as with the other issues.

Uncontrolled Airspace

A great degree of concern among those who fly is expressed over uncontrolled airspace. A total of 190,000 takeoffs and landings (including touch-and-goes) were estimated to have occurred at Anoka County-Blaine Airport in 1978. Pilots say:

> ...with that number, it's only been good luck that has prevented the occurrence of accidents. The potential for tragedy is there because the increased traffic in uncontrolled airspace creates a dangerous hazard.

The tower is actually in operation eight hours on Saturday and Sunday by National Guard members training or maintaining skills. Apparently there are few other navigational aids and those who fly rely for the most part on visual navigation.

There was also mention of the differential needs of the two kinds of aircraft using the Anoka County-Blaine Airport, the jets and the small private planes and how "the possibility exists for a crash like the one involving a Pacific Southwest Airlines jet in San Diego."

As one person stated, "everyone who flies wants a safe trip," and upgrading of only safety aspects at Anoka County-Blaine Airport is mentioned frequently as a compromise plan. "Safety is a potential problem that can be solved once the FAA had taken over the tower. They have standards and will make it safe." What development is proposed, how much will be involved, and who will be responsible appear to be the main questions.

For the Homeowner

Homeowners express their concern about safety very simply, but the images behind the expressions are stark and frightening. Safety translates to fears that a plane will drop out of the sky and crash on their home or worse, onto one of their schools. Although few envision the situation beyond a crash -- the need for emergency equipment, procedures -- the fear and anxiety are real and alarming. Almost no one interviewed can really remember specific plane crashes, although two feel that several occurred in the last year or two.

In spite of their safety concerns, the feeling among opponents is "that it is not unsafe enough right now out at the airport to justify the upgrading." Little connection is seen between a potential air disaster

involving their homes or their schools and the uncontrolled airspace above them.

Other Comments on Safety

It is remembered that the Ham Lake site was rejected in part because of frequent fog conditions. Several raise the question: "What effect will heavy fog have on safety if the Anoka County-Blaine Airport is expanded?" Another worries that a plane crash involving fire would burn for several months as the area is predominantly peat.

2.5.3 Housing

The impact which airport development will have on housing values around the site surfaced without probing in almost every anti-airport session. It did not come up as an issue quite as spontaneously among people who were for the airport expansion. Some of the attitudes of the proponents were:

- "Depreciation is usually talked about a lot. It doesn't, in fact, actually happen very often these days."
- "The better home was purchased for fewer dollars and as the initial investment was less, it won't appreciate that much either."
- "Property around the airport (Bloomington) hasn't gone down in value at all. It's gone up instead."

For the homeowner directly under the flight paths there are other responses. One family interviewed is in the process of attempting to sell their home. They are experiencing difficulty, not only because of noise but because of the proliferation of rumors concerning the future function of the airport. They consider themselves fortunate to have had a buy-back agreement with the original developer:

> We've lost a good five thousand dollars on our home value because of the airport. Actually, it's the way that the house has not appreciated as much, rather than actually losing money on it. But at least we got rid of it.

This particular family verbalizes the trepidation that everyone living in the vicinity of the airport anticipates concerning the one major investment of their lives -- their home.

Several versions of an alleged redlining incident involving Crystal Airport also are reported.

> When Crystal Airport was upgraded usage increased a lot there. Somebody was charged by the legislature in 1978 to redefine what are safety hazard zones at airports. The homes around Crystal were found in violation. They defined the homes as being in noncompliance and the homeowners were red-lined. That's what will happen here.

2.5.4 Surface Traffic

Increased surface traffic does not often come up for discussion spontaneously. With prompting, increased traffic congestion is noted on both main thoroughfares and formerly little-traveled roads.

> It's not only the main arteries where the surface traffic will increase -- Highway 10 is bad enough now -but it's on the side streets where the children play and ride their bikes.

When increased surface traffic was linked by opponents to the Highway 10 issue (and on occasion to Highway 35 -- "which we didn't want either"), specific problems which an improved airport might cause were completely overshadowed.

For those who view economic expansion as positive, including development of the facilities at the airport, "any problems with increased traffic will be fixed just as soon as 10 is finished."

Increased surface traffic is often connected with the new trucking depots recently built near Highway 35 in Blaine. Those opposed to the airport forward the idea that "the truckers know something we don't." Others see little connection between trucking firms and the airport.

2.5.5 Flooding and Drainage

In the general area surrounding the airport the water table is very high. One person states: "If you dug 10,000 holes in Blaine alone Minnesota would immediately have 20,000 lakes." Water is an important topic, both at a political and personal level. Nearly everyone is reported to have had water in their cellar at one time or another, and a sewer issue precipitated a recent political change in Mounds View. It was surprising, then, that the majority of people interviewed did not, until it was mentioned, indicate potential drainage or flooding problems resulting from airport development.

The issue is not, however, necessarily thought of as less important. Rather, "drainage and drainage problems are seasonal events and this is not the season." Also, consequences of "covering up all that area out there with cement" have not yet been addressed by the majority.

A major concern is "who pays for drainage ditches, storm sewers, facility sewers" that it is assumed will be needed. Another concern notes that the water "runs downhill" and this has led to problems in the past. It is mentioned that "the rain in Blaine must stay mainly there in Blaine." While lightly stated, underlying the issue is that whatever development is undertaken at the airport must not affect the communities lying south, specifically in Spring Lake Park and Mounds View. One official notes, however, "that (the sewer) capacity was reserved years ago for the airport."

At least a dozen respondents mention the Northern District as an aquifer recharge area "for at least Saint Paul." It was feared that pollution from jet fuel would poison the water table.

Several other people otherwise opposed to many aspects of the issue wonder if one advantage of developing the airport as an Intermediate Category facility might result in better drainage and decreased sewer problems. One developer noted that "200 new homes would do more damage than cementing over the whole airport area." Other responses

include "developing more ponds will solve the water problem in a creative way."

2.6 OTHER ISSUES

In addition to the general and specific issues detailed above, several other issues were also raised.

2.6.1 Energy

Although Minnesotans were not subjected to long gas lines during the energy crisis of 1979, they did experience some disruption during the national truckers' strike. But the question of energy is very much on people's minds and is raised as an issue by opponents on a number of occasions in a variety of ways. Recreational flyers are scorned as "wasting precious fuel." Corporate flying is seen as "unnecessary." The number of commercial jets assumed to be flying empty or only half full seems to call for curtailment of some kind.

Many respondents think of themselves and even refer to themselves as non-flyers, either commercially or in private planes. For them the energy crisis is "only for the poor people. You don't see any planes in gas lines. Why are people pleasure-flying when there is not enough gas? Why are there racetracks, why are their snowmobile races?" There are many nostalgic remarks about bringing back the trains and the trolleys.

2.6.2 Air Quality

Air quality surfaced as a separate issue in several sessions and was frequently mentioned in conjunction with other issues as well, e.g., quality of life. There were references to noxious smells and "what we can't see or smell," and several pointed out that emissions from jet engines filter into the ground, poisoning the water. In another context, an expanded airport facility would encourage "the kind of industry we don't want that brings all kinds of air pollution."

2.6.3 Cost of Airport Improvements

The question of who pays for what is important to proponents and opponents both, and is linked to specifics such as:

- Who will purchase and who will maintain adequate fire and safety equipment at the airport?
- Who pays for the drainage ditches, sewer lines, and any damages resulting from cementing over the airfield?
- Who will pay for pollution damage and for purifying the water?
- How much land is taken off the tax rolls for the airport expansion?
- During transportation of dangerous chemicals, who will pay in the event of disaster?

Few people are aware of how much land actually is included within the airport perimeter. Some believe that there is insufficient land available at the site and it will be necessary for MAC to purchase more. If more is needed, opponents feel MAC should have to pay a high price for the land. Some think MAC should buy even more land to buffer the airport if it is going to be developed. More frequently, though, there is the feeling that MAC has already quietly made additional land purchases. "They have been planning to upgrade this airport for a long time. It proves it because they already bought the land for it."

2.6.4 Sources of Funds for Airport Improvements

People want to know not only who pays for what but where is that money generated? The gas tax presently collected on aviation fuel is mentioned several times. There are questions raised as to how those funds are utilized. If a tax on those using the airport is employed, then people who are opposed "think it should be high enough to discourage much use."

Present airport users express discontent because "they don't get their money's worth of what they need, snowplowing or fire protection, and they have to pay for things they don't use, the schools."

2.6.5 Wildlife

The concern for wildlife is brought up frequently in vague references to environmentalists or "the Carlos Avery people." In personal terms, "being able to look out my own window, my own back yard, and see the occasional pheasant, rabbit, or even deer," is highly prized. The airport is thought to be detrimental to wildlife.

It is anticipated that increased surface traffic may also increase traffic accidents involving wildlife, especially adjacent to the airport. "Nearly a hundred deer are killed by cars around the airport as it is now." Other concern is voiced for the effects of noise on the unborn, the lack of appropriate mating space, the poisoning of the water, quality of life in general.

2.6.6 Positive Outcomes: Present and Potential

In addition to the above issues, a number of positive outcomes were brought up during the interviews.

Enlivened Economy

Respondents who see airport expansion as part of a healthy and vital economic growth pattern in the Northern suburbs anticipate a quickened business pace resulting from airport development. One industrial developer sees potential "for a good labor market, low development costs, excellent transportation, and a good place to live." Development of the airport will attract business and in turn hiring of local people will increase. Opponents say "there are too many people here already and that will bring the wrong kind of people anyway."

Better Schools

Quality education is highly valued in these communities. The schools are dependent on the local tax structure and are very sensitive to the local economic conditions. Additionally, school personnel may have a broader view of community needs than many. "There are quite a few local people who need more (income, jobs). The computer types make enough to live pretty well. But there are lots of people around who don't." A very cautious note of support, involving many conditions, is:

> ...if this airport is expanded responsibily, and if concerns for noise and safety and other issues are appropriately taken care of, and if the right things are done in the communities, then the need for economic expansion is certainly there and the schools especially will be the ones to benefit the most.

User Benefits from Airport Development

Utilization of facilities at Anoka County-Blaine Airport is increasing. Almost all pilots anticipate and hope that development of the airport will result in additional safety factors. Better ground services and municipal benefits are also desired.

2.7 MAJOR FORCES IN THE CONTROVERSY

Extensive confusion exists regarding (1) what agencies and groups are involved in this controversy; (2) what is the relationship of one to another; and (3) what responsibility does each have. The confusion is intensified by lack of information. In this section, the nature of this confusion is discussed.

2.7.1 Local Governments

The Governments of the Communities Closest to the Airport

Five communities (Blaine, Mounds View, Lexington, Circle Pines, and Spring Lake Park) are located close to the airport. Observations regarding each are presented in this subsection.

In Blaine, a majority of the people interviewed perceive the airport and the controversy in strictly local terms. Because the airport is physically located within the boundaries of the community of Blaine (and totally within Anoka County), it is frequently thought of as the local Blaine Airport only. The Blaine City Council, staff, and Mayor are criticized by local residents and outsiders for not providing information concerning the current airport status.

Local residents who are hoping for economic expansion and development want a more positive pro-airport response from their local officials. On the other hand, those who use Blaine as a "bedroom community" are

more concerned with quality of life than economic growth. They are more vocal and aggressive in demanding that their city council move to thwart expansion of the airport.

There is a division at the city council level which reflects, to some degree, a divergence in attitudes found among residents.

Residents of Mounds View expect their city council, regardless of constituency, to be the focus of their defense against the airport. Because it is a major issue to most Mounds View residents, it is a major issue at the city council level and the city council takes responsibility for standing with the people against the airport. "Ninety percent of the residents of Mounds View don't want the airport and they have been checked with." Mounds View City Council has, since 1977, begun active community involvement and a number of resolutions have been drafted by the council against development or expansion of the airport.

The Lexington City Council has taken the opposite view and passed a resolution in favor of airport development. The general feeling on the council is that the area will benefit as a result and their town will, too. However, reactions within this community are mixed, with some residents in support of the council's action, and others opposed. The same response exists outside the community. Some are in agreement with the council; others wonder, "What on earth are they doing, what do they have to gain?"

The communities of Circle Pines and Spring Lake Park are officially opposed to airport development. The impression is given that most of the residents of the two communities also do not favor development. This appears more true for Circle Pines because of the community's special characteristics. Founded after World War II as a cooperative community, the founding spirit has been kept alive by "original settlers," especially through the local newspaper, The Circulating Pines. A recent real estate development of 240 homes, "all the rest of the space left in town," was bitterly fought; but the houses are under construction.

Residents of Spring Lake Park are less unified in their opposition. The community appears to be more in the mainstream of commercial activity and economic expansion, this in turn affecting attitudes. While many residents are adamantly opposed to airport development, the percentage does not appear to be as high as in Mounds View or Circle Pines.

The Governments of the Communities in the Airport Vicinity

Six communities are located just beyond the inner five discussed in the preceding subsection. The six outer communities are Coon Rapids, Lino Lakes, Arden Hills, Shoreview, New Brighton, and Fridley. Because fewer people were interviewed in the outer six communities, less information is available than on the inner five communities.

Of the six, Coon Rapids appears to be the most directly involved and concerned in the airport issue. At the present time, the city council is thought to be divided on the issue. Concerns are more for generally promoting economic expansion in the area than a specific feeling for or against the airport. There is a recognized need for more information about the airport.

Lino Lakes is currently in the midst of a controversy between developers, who see economic expansion as vital and exciting, and those who "live in Paradise and don't want any more people to come in." The city council appears to favor airport development and the feeling is that the airport is far enough away that it won't negatively affect the community.

In the community of Arden Hills, there is a general lack of awareness about specific airport issues. It is thought people are more in favor of airport development than opposed. Local economic expansion, especially the recent relocating of several corporate headquarters (at least one of which maintains a corporate jet), far outweighs negatives. "Besides, we're a long way from the airport anyway."

There appears to be relatively little concern in Shoreview because "we're pretty protected with the towers. They're not going to tear

them down just for an airport." Shoreview, too, is experiencing some economic expansion. However, there is expressed homeowner awareness of airport issues.

Residents of New Brighton and Fridley are personally and politically aware of the airport issue. The community of Fridley is seen as more organized and more opposed. However, members of the Fridley business community wonder "why people are so much against it."

In both New Brighton and Fridley the issue has reached the attention of the city councils which are "generally thought to be against upgrading." The New Brighton Council has requested information for a study prior to decision-making. Individuals in both communities have embarked on studies of how the airport issues will affect them.

2.7.2 Legislators and the Legislature

The State Legislature is perceived in two ways: "Our legislators are pretty good," or "most of them are there to protect their own constituencies. You can forget about them. They'll forget about us."

Proponents aware of legislation about the airport -- the recent two-year moratorium at Anoka County-Blaine Airport -- responded that they thought "they are doing a terrible job. They let the legislation pass." Opponents of the airport see the legislature as the "be-all and end-all. It can be stopped in the legislature."

For the majority, the State Legislature translates into Gordon Voss and Paul McCarron, rather than the legislature as a whole. Even by their political adversaries, both legislators are spoken of with respect. Opponents of airport development have faith that "they can stop it and they will." Proponents are not as sure: "That legislation passed once. It won't again. MAC has too much pull with the legislative leadership."

Interestingly enough, neither spontaneously nor frequently is the senatorial level mentioned. References are in distant terms -- "He's for it." "He's definitely against it." "He doesn't care much." "He's more into State things."

The governor is referred to by opponents as the last resort -- "We'll take it to the Governor."

A general feeling about the elected officials is aptly summed up by one respondent:

> The real thing is that some people are elected to represent the people while the others feel they are elected to do the best thing for the people. There is a big difference.

2.7.3 Metro Council

For some, mainly airport proponents, the feeling is that Metro Council is responding to the needs of the Northern area and "it is about time." For most, though, there is such dissatisfaction expressed about effects of regionalization and conflicts with Metro Council over a number of issues, that the airport matter tends to become obscured.

Additionally, a great many people do not differentiate between MAC and Metro Council. This occurs in part because of the similarity of names. There is also little understanding of the differing function and responsibility of the two agencies in the controversy. Therefore, the staff at Metro Council, including those responsible for airport planning, is less well known in the communities than are staff personnel of MAC.

2.7.4 The Metropolitan Airports Commission

In the airport issue, some respondents are aware of the relationship of the Metropolitan Airports Commission (MAC) to Metro Council. Of the two agencies, "MAC is thought to have a great deal of influence with the press." They are also "thought to have a lot of friends in the legislature." The Executive Director of MAC is moderately well known by name in the community and, although distrusted by many, he is also thought to be an excellent administrator and politician. Almost no one is aware there are commissioners of MAC, whether they are appointed or elected, or who they are.

Those who have contacted MAC concerning airport questions or issues report that for the most part staff personnel have been responsive.

The feeling is that MAC has gone out of its way to "supply correct information, were always helpful, even arranged a flight over the area, but it didn't change my mind one bit." A few, however, report they have wanted more information or more action from that agency than did occur.

Some proponents of airport expansion say that MAC is "handling as it ought to be. They are doing an excellent job of providing ways for the public to express itself. They have notified people of hearings and have accepted at hearings all statements. That's more than Metro Council has done."

More critical proponents say MAC has been "walking backward for a year. It's a mystery to me. Why did they ever give up their supremacy to do what they thought was the best?"

2.7.5 The Federal Aviation Administration

The Federal Aviation Administration (FAA) is generally an unknown agency, not much connected with this airport. Their responsibilities are mentioned in vague terms if at all. As an agency, the FAA is thought of as neutral, regulatory, and involved with air safety. At least two people were under the impression they licensed citizen band radios.

2.7.6 Other Agencies and Groups

Other agencies thought to be involved in or responsible for airport activities or decisions are:

Minnesota Department of Transportation

The Minnesota Department of Transportation (Mn/DOT) is seen by some as fairly powerful in the airport issue because of the link with the Highway 10 issue. Mn/DOT is perceived as wanting the Highway 10 extension and "they are in cahoots with MAC in order for it to go through."

> Mn/DOT has all the agencies tied together, the highway to the airport and the freeway to the interchange. It is not a separate issue but a crossword puzzle. One cannot live without the other.

Another quote states that in 1976 "Mn/DOT formed a super-agency which used to be separate before and now they can coordinate freeways, pipelines, and airports." (This last is a reference to a present controversy in another part of the state which involves not pipelines but power lines.)

The County

Another government entity which appears involved is the County. This means Ramsey County for some, Anoka County for others. On the whole, County Commissioners are not seen as very responsive to the ordinary people. Rather, they are seen as "the big people who get everything they want at the expense of us." Some respondents are sure the County is opposed to development of the airport. Others are certain they favor it. County officials view the airport issue "as a hassle over which we have very little control."

Other Public Agencies

Other agencies mentioned in conjunction with the airport issue were the Civil Aeronautics Board, the State Aeronautics Board, and the State Economic Development agency. All were thought to be strongly for development of the airport.

Those for whom the issue of the airport is a long struggle, "them against us," still see the National Guard as one agency supporting airport development. Some suspicion exists that the Guard is "behind the pro-expansion group."

Groups

Frequently, the only group opponents can think of as favoring airport development is the Blaine Chamber of Commerce. This Chamber and the others in the area take a discreet pro-business, pro-economic expansion stand. This includes development of the airport if it appears to be in the best interest of the business community.

One Chamber representative indicated "that it was good business practice to try to do everything that would stimulate business to come to

the area." Another representative, located in the outer communities, is actively soliciting business, especially corporate headquarters. "One of the drawing cards is clearly the basing of corporate jets at Anoka County-Blaine Airport."

The Mounds View League of Women Voters, having investigated the airport issue several years ago, continues to monitor information and make it available to other Leagues, groups, and individuals. Although the investigation was intended as non-partisan, apparent disadvantages were obvious to Mounds View residents, and the report is basically opposed to development of the airport.

Of several homeowners' associations contacted, two are completely unaware of the airport issue, but intend to investigate and "will probably be against it." Other homeowner associations already organized to one issue (Highway 10, water), have or are in the process of adding the airport. At least one homeowners' assocation is organized specifically in opposition to the airport and will continue to fight the plans for development.

In the Mounds View neighborhoods south of the runways, several strong anti-airport organizations are operational -- the Mounds View Concerned Citizens Airport Task Force, the Mounds View Concerned Citizens Action Task Force, and the Citizens Corps of Airflight Monitors.

Others thought to have stands for and against are: The Carlos Avery Group (against); the environmentalists (against); the University of Minnesota environmental groups (against); the University of Minnesota Flying School (for); the flying schools at the airport (for); AOPA members (for); sportsman's groups (against); the Department of Natural Resources (against).

Other Factions For and Against

Other factions mentioned frequently by both opponents and proponents as favoring or opposing airport development are:

o "the big landowners"

- "the spectators who bought up all the land around Ham Lake"
- "the big names, the Daytons, the Davidsons"
- "the business community -- local and outsiders"
- "the politicians"

Less frequently mentioned as proponents are:

- "the old Guard"
- "those that don't know anything about it"

Those thought to be opposed to airport development and mentioned frequently are:

- "those homeowners who live directly under the runways"
- "those who are against economic expansion and who want to turn back the hands of time"
- "the ones that live in the good old days. They want everything to stop after they get their share."
- "those that don't know anything about it"

Individuals

There is no clear consensus as to which individuals might favor or oppose airport development except those clearly associated with an agency, a group, a business, or a publication.

2.8 PERCEIVED NEED FOR MORE AIR FACILITIES IN THE TWIN CITIES AREA

2.8.1 Those Who Oppose Airport Development

Considerably less than half the interviewees perceive International Airport/Wold Chamberlain to be at capacity. For them, it follows that there is no need to develop Anoka County-Blaine Airport. If there is a need:

> ...it certainly isn't an overwhelming need because there are lots of planes flying now that take off half full. It will take a lot more than just someone

> standing up here and telling me they need it. They'll have to prove it to me.

The impression of no need for development of the facilities at Anoka County-Blaine Airport is based on "my flights in and out of Wold Chamberlain," or "what I hear from people who fly." Feelings of many opponents are summarized by one respondent who states:

> For commercial aircraft Wold Chamberlain is an excellent facility and easily handles a big load so there's no justification for a new airport. There is no justification for cargo needs either. As a reliever, there is no indication that upgrading Anoka will eliminate small plane use at Wold Chamberlain. Housing and homes is more important than expanding this airport. Anyway it's hard to know because you can't believe the figures that MAC gives you any more.

2.8.2 Those Who Favor Airport Development

For proponents who perceive a need for more air facilities in the Twin Cities area, the obvious answer is full expansion of Anoka County-Blaine Airport. However, this is interpreted in a number of ways. Almost every proponent expresses negative reaction to expanding for cargo planes, large planes (large in some cases was defined as two-engine, "like the DC-3 already out there," or "larger planes"), big jets, and helicopters.

Only a few respondents think in terms of a major cargo center at the airport. Most view the perceived need as having to do with smaller planes. "There is no reason why private planes have to be at Wold Chamberlain anyway, but it's nice to be able to do it," notes one pilot.

References are made to the crash of a Pacific Southwest Airlines jet in San Diego and this is seen as prompting the necessity to get small planes out of Wold Chamberlain. "The situation is critical or near critical in that corporate and private planes need to be out of Wold Chamberlain."

Several of the most enthusiastic supporters for development of the airport want it developed with every conceivable safety feature but with no runway change or expansion. Most of the others want the runway longer, more safe for the "jets that are already using it now." Improvement of both ground services and municipal maintenance services is seen as needed and important.

2.8.3 Those Who Favor Airport Development But Not at Anoka County-Blaine Airport

A number of opponents indicated there was probable need for more air facilities in the Twin Cities areas say, "but not at Anoka County-Blaine Airport." Suggested alternatives to development of Anoka County-Blaine Airport frequently involved using one of the other MAC fields. (Some people knew several names; most knew one or two.) Examples from the data collected include:

- Wold Chamberlain

  "...why under-use what is a first class facility and expand Blaine/Anoka foolishly. You end up paying more taxes, using more tax dollars than necessary."

  "...if they need more facilities then let them expand at Wold Chamberlain. Take the homes out of there."

  "At Wold Chamberlain something must be done. Why don't they fill the planes, have fewer flights, get consolidated, schedule better and more conveniently for people. Expand that area."

  "They've got 1900 acres plus 2000 acres of federal property down at Wold Chamberlain. Why don't they use that?"

- Holman

  "...they are crying for business in downtown South Saint Paul."

  "...they just got a couple of million dollars grant to fix that place up for the National Guard."

  "...except for the National Guard, hardly anyone uses that field."

"...Holman is a bad site because it floods. Anyway, it's too close to the city."

- Crystal

"There is a lot of land between the city and the airport but there is opposition by the money people down there because they don't want the planes flying around."

"...It's already upgraded and they have problems with the houses. Crystal is built up all around and has wires and highways in the way."

"...Crystal was upgraded in 1965 but no one knows this."

- Flying Cloud and Eden Prairie

"It (Flying Cloud) should be upgraded because it's closer to existing motels."

"It's no good because it would cost a lot to build and there's not good land but there is a lot of space. The Southeast takeoff is over the riverbed."

"Flying Cloud only has 500 acres."

"Flying Cloud is no good because of the cliffs in the city and it's too busy."

"Eden Prairie is too far away."

"Why don't they bring all the others up to capacity. Eden Prairie has a long way to go still, they can take a lot more planes."

- Lake Elmo

"It's just like Crystal. It's where all the money people are and they don't want the airport so they don't get it."

"Lake Elmo is about ten miles from Wisconsin, it's not built up and it's okay for expansion."

"When Lake Elmo was going to be upgraded to intermediate they only had one big show of force, then they didn't upgrade."

- South Saint Paul

  "It's private but it's in Wold Chamberlain's pattern, they won't expand that."

- Air Lake/Lakeville

  "They just got an FAA grant for two and a half million dollars. Maybe they will upgrade and not take Blaine/Anoka."

  "I don't see why that money went to Lakeland. We should have had it here at Blaine/Anoka, for safety upgrading."

2.8.4 Other Suggestions

A majority of suggestions elicited by airport opponents simply involve putting the airport "way away out somewhere."

- "...The logical solution is to sell the land the airport is on now and go away from people to build, keeping it open all around."
- "...Buy enough land out of the area to move the airport up there and set up mass transit to it."
- "...MAC owns or has options on non-developed outlying areas. Make a decent size reliever and the business will follow a decent sized airport."
- "...There is all that farm land up there with nothing but cows. Could the cows protest?"
- "...Farmington is near site B and they are begging for the airport. Why can't they have it?"
- "...Dakota County wants it. Why not put it out there? Basically Dakota County is farm land. Tell the people before and then build."
- "...It's logical that MAC develop the 1900 acres as industrial property and then sell it for a lot of money and purchase Farmington and develop where the city is already moving, toward the South."
- "...There's billions of dollars waiting in Washington for communities who don't want airports and airplanes. Expansion plans have been

scrapped and the money is there because the people have beaten down the government. Why don't they just go somewhere away from everyone and buy all the land up that they need."

- "...Build a freight satellite far away, 50 miles from here, provide good public transportation to the airport like Dallas-Fort Worth's airport."

2.9 REACTIONS TO THE PROPOSED AIRPORT DEVELOPMENT ALTERNATIVES

2.9.1 Description of the Alternatives

Four alternatives for the development of Anoka County-Blaine Airport have been set forth. These are:

1. Development of the airport as an Intermediate Category facility with the primary runway oriented in a north/ south direction.
2. Development of the airport as an Intermediate Category facility with the primary runway oriented in an east/west direction.
3. Development of the airport as an Intermediate Category facility with the primary runway oriented in a northwest/ southeast direction.
4. Development of the airport as a Minor Category facility.

2.9.2 Choices -- Perception of the Question

For the majority of respondents, in favor or opposed, selecting among these alternatives is not well received. Opponents feel "the decision to come out with the four suggestions ended up alienating people and providing fodder for all kinds of outbursts." The response of many is "the appropriate way to set the runway is the way that's the best for the use of the airspace as well as the space around it. I expect that will be done appropriately."

For those against airport expansion, presentation of alternatives is often seen as a ploy.

- "...The direction of the runway is not a factor. It is overwhelmingly disapproved by those living next to it."

- "...It doesn't solve anything to extend the runway over Mounds View rather than over Circle Pines. The traffic is still over homes and schools."
- "...Expand it over Blaine because they are the ones who want it. But that's not the answer, either."
- "...That was just a way to get us going one against the other, for them to divide and conquer."
- "...It's not logical to assume, and it's an insult to intelligence, that if we don't want it here that somebody else ought to have it. What do they think we are, stupid?"

Actual discussions concerning the perceptions of the alternatives bring these responses:

- "...There will be no expansion northwest/southeast because of the Shoreview towers. They're not going to move them."
- "...The prevailing winds in this area dictate how the runways go. Everyone knows that the winds are northwest and that is the best way for the runway. Ask any pilot."
- "...The jets can land either way except in high winds. They are going to expand them both."
- "...They are going to extend the runways and paint X's at the Mounds View end. Think we're pretty dumb. They should jack-hammer the X's out."
- "...We don't need 9,000-foot runways in any direction. There are people and schools in every direction so they can't expand."
- "...They think no one lives up north. They're wrong. A lot of people live north of the airport."
- "...Move the runway north, it's a great idea because it would solve the local noise problem. But then, public opinion says it's only one or two steps from a minor airport to an intermediate airport. Who's fooling who with painting X's on a 9,000-foot runway."

Reactions to specifically proposed alternatives are fairly predictable. Except for Mounds View residents, most favor the north/south development, mainly north. Second preference is the northwest/southeast development. The east/west development is mentioned less frequently than other alternatives, except by Circle Pines respondents who definitely oppose this alternative.

Pilot response favors a northeast/southwest development. "The winds on the runway are best in this direction. It won't increase the traffic, and it will impact the fewest."

Proponents least prefer the alternative of development as a Minor Category airport. It is interpreted as "very undesirable because of lack of the safety features and the unguided airspace." Opponents of airport development interpret the Minor Category development alternative to mean anything connected with their aversions:

- "no jets"
- "no big planes"
- "no helicopters"
- "no planes over my house"
- "only a few planes"
- "restricted time of operation, restricted number of flights"
- "curbing of unlicensed pilots and people who are learning to fly"
- "to have it like it was before"

However, for many there is not enough information provided by these alternatives to make an intelligent decision.

2.9.3 Ideas Concerning the Ideal Solution

Those most adamantly opposed to the airport respond by saying that "closing it down entirely is a fine idea." The majority of those opposed, however, are for having it remain as it is. Opponents and proponents agree there is no desire that Anoka County-Blaine Airport serve as a second international airport, a cargo port, or a passenger terminal.

The most frequently mentioned solution, either as an ideal or as a compromise, is to construct all possible safety improvements but not to change the runway length.

- "...The ideal solution is to have the upgrading to intermediate at minimum standards only to ensure that no big planes will come in. For instance, instead of doing 8,000 feet, go only 4,000 feet. The people are so mistrustful that they will figure in another five years from now, here we have 8,000-foot runways. Let's go boom! and bring in 747s."
- "...Only add a thousand feet to the north/south runway bringing it up to 5,500, cut the Mounds View end off, tear it up and re-sod it, don't have either commuter or cargo planes in there."
- "...Upgrade the tower and extend the holding pattern."
- "...Increase the impact area from 12 miles to 52 miles. Buffering the airport is good whether it is a major or minor or whatever."
- "...Leave it as it is and improve the instrumentation with full radio control and a 24-hour tower."
- "...Upgrade the tower, arrange the traffic pattern over undeveloped marsh land, and really police those guys that don't fly right."
- "...Do it now. It'll be even harder in 10 or 15 years and we'll need it more then."

If the airport is developed against the wishes of the people, suggestions include:

- "...If they can't fix the noise, then they should have to pay us a great deal for the noise and the inconvenience."
- "...They should pay us a lot for our buildings and our land."
- "...If it has to be, then post bond with the Metro Council to guarantee what is said is true. They should then be held to noise levels at such-and-such a level and pay for each and every violation."

- "...Someone said McCarron had already started the bills for legislation to pay people for their houses if the airport does go through."

2.9.4 Expectations for Ultimate Resolution of the Controversy

Those Who Think the Airport Will Be Developed As an Intermediate Category Facility

Approximately half the respondents believe the airport ultimately will be developed as an Intermediate Category facility. Supporters view this development as a logical part of the Twin Cities growth pattern finally reaching the Northern suburbs. Sympathy is expressed for the plight of those living near the airport but the feeling is "you can't stop progress."

Those who think the airport will be developed as an Intermediate Category facility, and against their wishes, are in turn resigned, angry, embittered, defeated.

- "If the government agencies decide to do it, they'll say to hell with us. The government agencies want to expand to perpetuate themselves."
- "It will go through but it will be so delayed and cost so much money that it will make the people more unhappy."
- "It's pretty cut and dried, regardless of the study. It'll be rammed down our throat unless the people go to the courts."
- "Yes, by way of MAC to Metro Council to the Legislature."
- "It will go and the politicians will slide us into it. Whatever MAC wants they'll get, so they say they'll make the study to pacify but they'll go ahead with it."
- "We're fighting endless battles. Money speaks. All the companies want it. All the environmental studies be damned. If they want it they will get it."
- "Oh, it'll go all right. But we're not going to make it easy for them. We're going to throw up every road block in sight, and some that aren't in sight, too."

Those Who Think the Airport Will Not Be Developed As an Intermediate Category Facility

Very few supporters of airport development believe it will not happen. If it does not, the attitude is summed up by one respondent. "I'll be sorry but I'll go along with whatever is decided."

Those opposed and who believe it will not be developed have a variety of assessments and feelings. Some are weary but absolutely committed to the fight. "I hope this is the last one but I think there might be one more fight in me." Others, relatively new to the controversy and to the political arena enthusiastically say: "We're the people. We can do it." The feeling is that the development of the airport as an Intermediate Category facility will be fought "every inch of the way -- locally, with the people, in the Legislature, with the environmentalists, and in the courts." Expression ranges from moderate to extreme.

- "Nothing will happen because Metro Council is not committed and MAC won't push that hard."
- "Unless the antagonism is solved the airport won't go. The communities are strong enough to block it forever."
- "Ham Lake never came about because the new planes came in and there was no need. Now with the energy crisis, the same will take place at Anoka County-Blaine Airport."
- "I'll lie down in front of the steam rollers if necessary."
- "There are the apathetic and the defeated, but the majority " are committed. And the majority, with good leadership, will block the airport."
- "I'm optimistic that the airport will not be upgraded if the government listens to the people in the community. I believe the people will rally."

3. CONCLUSIONS

3.1 INTRODUCTION

A summary of the conclusions reached by the study is presented in this chapter. Conclusions are based on findings from 86 interviews with 163 residents of the area surrounding Anoka County-Blaine Airport. The interviews were conducted during July and August, 1979.

3.2 PERCEIVED BACKGROUND AND HISTORY OF THE AIRPORT AND THE CONTROVERSY

Many opponents regard the present airport controversy as having begun with the proposed Ham Lake International site ten years ago. The intended National Guard move two years ago coalesced anti-airport and anti-noise feelings.

Perception of events at recent airport-related Metro Council hearings has intensified opponents' feelings of hostility and mistrust of government agencies.

A recent two-year legislative moratorium leads opponents to believe that if all else fails, airport development will be stopped by the legislature. Proponents do not see the likelihood of this occurring.

3.3 MAJOR ISSUES

No simple groupings categorize opponents or supporters of airport development. It is in turn, a personal issue for those living near it, a political issue for local and state government bodies, and an economic issue for those favoring expansion in the Northern suburbs.

3.3.1 Quality of Life

Concern about the quality of life surfaces in discussions about noise, safety, pollution, family, homes, schools, and churches. People say the area is too heavily populated now to safely develop the airport as an Intermediate Category facility. One hundred thousand more people live in the vicinity now than when Ham Lake was being considered.

Residents moved to this area for a safe and stable neighborhood and community environment. Living in the relatively unfashionable Northern suburbs allows many families a higher standard of living than otherwise affordable. The home, the most important possession, is seen as tangible security, life savings, investment, retirement fund -- everything. To imagine their small communities of green and serene neighborhoods and pleasant homes, disrupted by airport-related disturbances, is simply not acceptable. Many have experienced or have a vivid idea of the quality of life around Wold Chamberlain International Airport and that is not wanted here.

3.2.2 Economic Expansion

Enthusiastic supporters of economic expansion in the Northern suburbs see the airport as part of a trend. Urban pressures are pushing industrial-commercial and residential growth north where land and development costs are lower than in the south. The trade-offs are seen as between those who want the benefits in the north and the technology elsewhere. Anoka County-Blaine Airport is linked to the kind of economic expansion boosters seek to attract -- corporate headquarters rather than industrial polluters. Economic advantages will be opportunity for more local employment, extended local services, and a better tax base for the schools. Airport opponents are wary that enthusiasts may have grossly misjudged potential economic benefits.

3.3.3 Lack of Commmunication

Lack of information and communication is viewed as a major problem. In part, this occurs because no single communication medium (television, newspaper, etc.) reaches all residents. Also, government management of communication is perceived as unsatisfactory, leading to a commonly held notion that information is deliberately kept from people.

Many questions are raised. Self-generated answers allow speculation. Among a number of people there is evidence of excessive fear, suspicion, hostility, and anger. Others regard the entire airport issue as a political football. However, for the overwhelming majority

interviewed and responding the issues are straightforward and the concerns, whether for personal environment, economic expansion, or both, are profoundly important. Adequate information to form opinions and make intelligent decisions is ardently desired by the large majority.

3.3.4 The Effects of Regional Government on Local Citizenry

This issue influences many responses about the airport. Appointed Metro Council officials are seen in conflict with both elected representatives and local governments. The function and responsibilities of Metro Council, its many committees, and the relationship to MAC and the airport is not clear. Frictions and misunderstandings between agencies creates problems and intensifies feelings of impotence, frustration, and anger on the part of ordinary citizens. Lack of information is often attributed to staff personnel seen frequently as intervening between the people and their officials and representatives. Artificial boundaries which develop as a result of regionalization add confusion. Geographic abandonment by responsible agencies is also noted.

3.3.5 Highway 10

For many, the airport is connected to the extremely sensitive Highway 10 issue. Homeowners in the affected highway-airport areas see a bureaucratic conspiracy. Proponents note planning diagrams indicated Highway 10 expansion long before the majority of residences were built in either proposed interchange area.

3.3.6 Noise

The primary issue is noise, specifically helicopter noise. Frequent reference is made to the number of public schools located near the airport. Noise is often cited as having adverse effects on learning as well as disrupting classes. Vibration damage to homes, increased stress to humans and animals and other kinds of pollution are mentioned. A few small quiet planes flown by responsible people at sensible hours seems acceptable to most. Increase in the number and kinds of planes

using Anoka County-Blaine Airport, including jets, is noted. Jets are thought to be more noisy as well as more prone to crash than small planes. Flying low or too close to residences, construed as dangerous, is often attributed to student pilots. Proliferation of flying schools is criticized.

3.3.7 Safety

Safety translates mainly into fears of potential air disaster. Those who fly are concerned about hazards in uncontrolled airspace. Homeowners express anxiety that a plane will crash on a home or a school.

3.3.8 Housing

Proponents speak of lower appreciation rather than depreciation, and point to continuing high home valuation around Wold Chamberlain Airport. The homeowner directly in the flight pattern cites difficulty receiving top value for what would be considered (except for its proximity to the airport) an expensive home.

3.3.9 Surface Traffic

Increased surface traffic is not a spontaneously mentioned concern. With prompting, increased traffic on side streets and congestion on main thoroughfares is noted, particularly in conjunction with children's safety. Proponents feel that present and future traffic problems will be solved by completing Highway 10.

3.3.10 Flooding and Drainage

The general impact area has a very high water table. Despite this, flooding and drainage issues are not mentioned spontaneously.

Major questions involve: (1) who will pay for improvements, and (2) who will be responsible for resultant damages. Many, including opponents, think upgrading may result in better water management.

3.3.11 Other Questions and Issues Noted

Other questions asked and issues raised during the interview process include:

- Who assumes financial responsibility for necessary or anticipated equipment, improvements, land acquisition, etc.?
- Expressions of resentment are voiced at having any outside agency (especially federal or state) "take away my money and give it back to me for something I don't want."
- There are questions about incompatibility of unnecessary gas use (recreation flying, corporate jets) with national energy goals.
- Reference is made to pollution, not only to noxious smells and poisoning of ground water, but to an expanded airport facility attracting industry which will pollute.
- Proponents see an Intermediate Category airport as part of a healthy economic pattern. The Northern suburbs combine good labor market, low development costs, and excellent transportation, with a good place to live. The airport enhances this. Opponents say it will bring the wrong kinds of people and industry.
- Educators are positioned to see a broad cross-section of the community and its needs. School support depends on local tax structure and is sensitive to local economic welfare. Responsible airport development could result in extensive benefits to area school districts.
- Dramatically improved safety factors, controlled airspace, and better ground services are seen as needed improvements.

3.4 MAJOR FORCES IN THE CONTROVERSY

Extensive confusion, intensified by lack of information, exists regarding: (1) what agencies and groups are involved in the controversy; (2) what is the relationship of one to another; and (3) what responsibility does each have.

3.4.1 Local Governments

A majority perceive the airport and controversy in only local terms. Because the airport is geographically located in Blaine it is frequently thought of as the local Blaine airport. In that context, Blaine is seen as promoting airport development and city officials are criticized by many for not being informative about the present airport status. Blaine City Council, divided on the airport issue, reflects, to some degree, attitudes of residents.

Mounds View City Council passed several resolutions against the airport. This accurately reflects the feelings of the majority of residents. The Lexington Council passed a resolution supporting airport development. Some Lexington residents agree with this action; others express opposition.

Circle Pines and Spring Lake Park officially oppose airport development. Circle Pines residents appear to be opposed as well. Spring Lake Park residents, more in the mainstream of economic development, are not as overwhelmingly opposed, especially business people.

The airport issue appears to be more important in the communities of Coon Rapids, Fridley, and New Brighton than in Arden Hills, Lino Lakes, and Shoreview. Positions of community leaders and residents who are opposed are presently more in evidence, especially in Fridley and New Brighton.

3.4.2 Legislators and the Legislature

The State Legislature is seen by some proponents as hindering growth in the Northern suburbs by allowing the two-year moratorium to pass. Opponents see their local legislators championing their cause. The moratorium is regarded by opponents as a victory. Others see it as a grace period when appropriate pre-upgrading studies may be completed. The Senate is not seen as very involved or powerful in the controversy.

3.4.3 Metro Council and the Metropolitan Airports Commission

Many do not differentiate between Metro Council and the Metropolitan Airports Commission. The names are similar, and the functions and responsibilities of each agency are not distinct. Therefore, who is powerful in what context does not clearly emerge.

Expressed dissatisfaction with the issue of regionalization beclouds the relationship and responsibility of Metro Council to the proposed development of Anoka County-Blaine Airport as an Intermediate Category facility. Proponents assume Metro Council has finally responded to the needs of the Northern communities. Opponents, especially from Mounds View, are still angered by their perceptions of the way the airport hearing was handled by Metro Council representatives.

MAC, the older of the two agencies, and the one with the word "airport" in its name, is thought to be the major force. It is "they" who want the airport to be developed in an Intermediate role. Those who have sought information have found MAC to be responsive. The Executive Director and other MAC staff personnel are known by name in the local area. Almost no one is aware there are commissioners of MAC, whether they are appointed or elected, or who they are.

3.4.4 The Federal Aviation Administration

The FAA is generally an unknown agency, not much connected with this airport, and their responsibilities are mentioned in, at best, vague terms.

3.4.5 Other Agencies

The Minnesota Department of Transportation is seen by some as fairly powerful in the airport issue. The confusion associated with the Highway 10 issue gives credence to the idea that a conspiracy with MAC exists in order for both airport and highway expansion to be completed. Some respondents are sure the County Commissioners oppose upgrading, others are certain they favor it.

3.4.6 Groups

Most frequently mentioned proponent groups are the Chambers of Commerce, especially the Blaine Chamber of Commerce. The most frequently mentioned opponent group is the Mounds View League of Women Voters. Most homeowner associations are just becoming aware of the airport issue. Several neighborhood groups, mostly in Mounds View, are opposed, well-organized, and have strong bases of support.

3.4.7 Factions and Individuals

Several factions are frequently mentioned by respondents as thought to be favoring (e.g., speculators, big land owners) or opposed (e.g., residents living near flight paths, the no-growth, no-change group). There is no clear consensus as to which individuals might favor or oppose airport development except those clearly associated with an agency, group, business, or publication.

3.5 REACTIONS TO SPECIFIC PROPOSALS

Four alternatives for the development of Anoka County-Blaine Airport have been set forth. These are:

1. Development of the airport as an Intermediate Category facility with the primary runway oriented in a north/south direction.
2. Development of the airport as an Intermediate Category facility with the primary runway oriented in an east/west direction.
3. Development of the airport as an Intermediate Category facility with the primary runway oriented in a northwest/ southeast direction.
4. Development of the airport as a Minor Category facility.

The alternatives are perceived by some as too simple, by others as a ploy. The issue is seen most often as a whole: The outcome of airport development affects all communities and residents, not merely those in one given direction.

Because of prevailing winds, development with the primary runway oriented in a northwest/southeast direction is favored by pilots. The

idea of extending the runway north and painting X's on the south end is ridiculed. Extending the runway north, removing the pavement at the south end, and making a runway approximately 5,000 feet long, was least objectionable to the largest number of people.

Proponents interpret development of the airport as a Minor Category facility as undesirable because of the potential for disaster in uncontrolled airspace. Opponents view the Minor Category alternative as desirable, but interpretations of the concept vary widely.

3.6 PERCEIVED NEED FOR MORE AIR FACILITIES IN THE TWIN CITIES AREA

Less than half those interviewed perceived Minneapolis-Saint Paul International Airport to be at capacity. For them, it follows that no need exists to develop Anoka County-Blaine Airport as an Intermediate Category airport. More than pronouncements by MAC or Metro Council will be required as proof to opponents that need exists.

Proponents who perceive need, see full expansion at Anoka County--Blaine Airport as obvious. However, many conditions are attached -- no cargo planes, no large planes, no big jets, and above all, no helicopters.

Opponents who feel there is probable need respond: "Not at Anoka County-Blaine Airport." Instead, these people favor the development of one of the other MAC-operated fields. The majority of opponents favor moving the airport "way out away somewhere." Various search areas are mentioned, with Farmington, near Search Area B in Dakota County, thought to be actively soliciting the airport.

3.7 IDEAS CONCERNING THE IDEAL SOLUTION

Adamant opponents favor closing the airport entirely. The majority of opponents favor leaving it as it is but interpretations of "as it is" vary widely. If the airport is developed against the wishes of opponents, various kinds of compensatory programs are suggested. Proponents feel that constructing all possible safety features is highly desirable.

3.8 EXPECTATIONS FOR ULTIMATE RESOLUTION OF THE CONTROVERSY

Approximately half the respondents believe the airport ultimately will be expanded. Proponents say this is because progress cannot be stopped. Opponents say the agencies involved (MAC, Metro Council) are powerful enough to force the airport to be developed as an Intermediate Category facility.

The majority of respondents who believe the airport will not be developed are opponents. Of these, some express weary commitment to the fight. Other expressions range from the enthusiastic to the extreme. But all opponents indicate that development of the airport as an Intermediate Category facility will be fought every inch of the way -- locally, with the people, in the legislature, with the environmentalists, and in the courts. Eventually, they feel, the issue will be defeated.

EXHIBIT A-1

TRA-ANOKA DISCUSSION GUIDE

1. History: What do you know bout the background to this airport controversy?

2. Characters: Who is in the cast in this drama on both sides, and how wide is their base of support?

3. Government Agencies: Which ones are involved -- MAC, Metro Council, State Legislature, FAA, and Local Governments?

4. Handling: How has the government been handling this whole issue?

5. Issues: What are they in order -- noise, safety, surface traffic, flooding/drainage, depreciated housing values?

6. Need: To what extent do you feel there is a need for more airport facilities in the general Minneapolis area?

7. Alternatives: What is your opinion of these 4 options being studied by TRA and how would you rank them according to your preferences -- (A) Expansion North/South, (B) Expansion East/West, (C) Expansion Northwest/Southeast, and (D) No change?

8. Best and Worst: (Usually covered in the previous question.) Which of these options is the most desirable to you and which is the least?

9. Ideal Solution: If you could do anything with this airport, what would be your ideal solution?

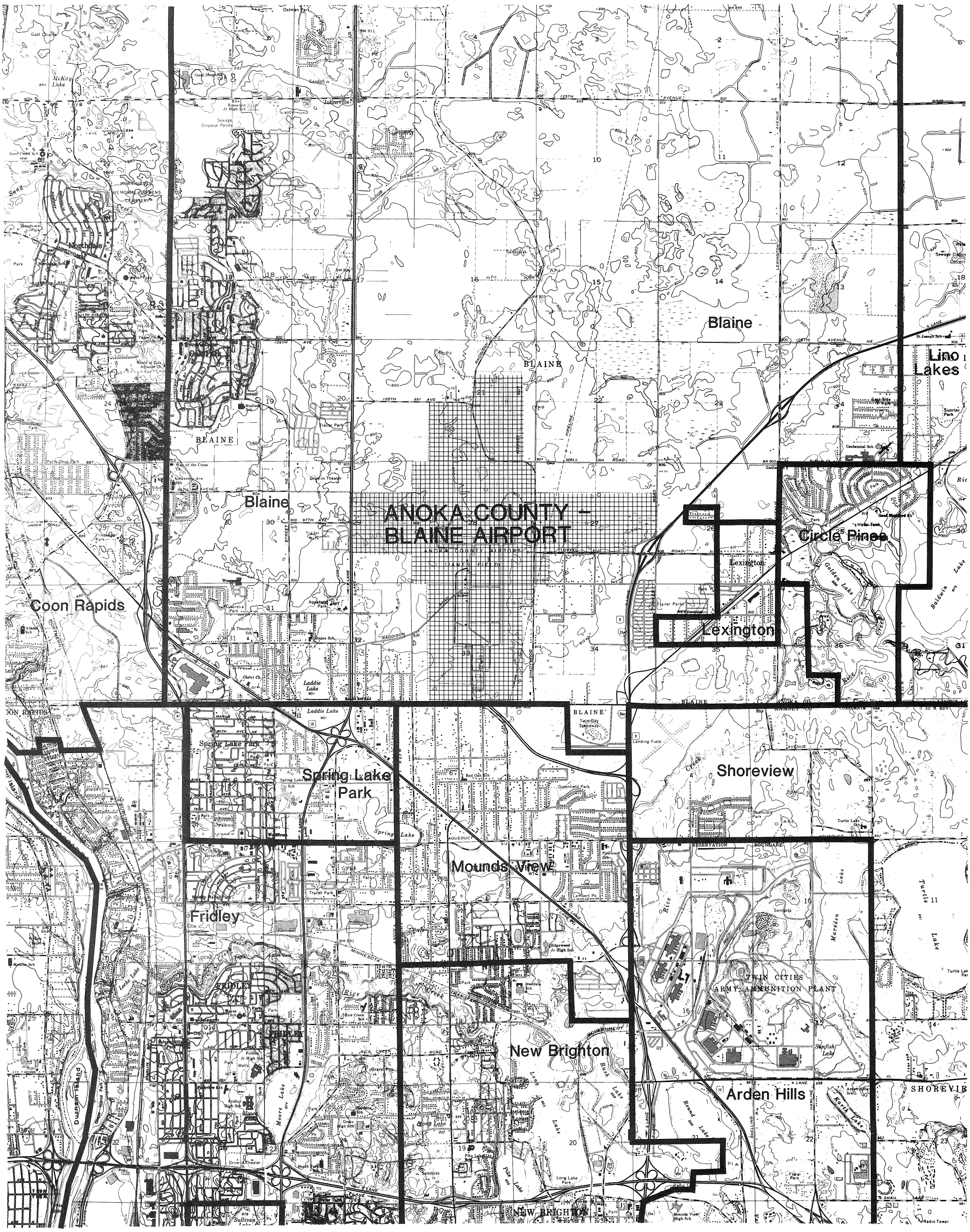
10. Good Outcomes: Have you seen any positive outcomes come from this issue yet?

11. Flexibility: To what extent do you see yourself as being more or less flexible in your position?

12a. Predict Results: What is your best guess as to how this will be ultimately resolved?

12b. Personal Involvement: To what extent do you see yourself as being personally involved in this issue?

12c. Group: Without committing yourself now, to what extent would you be interested in participating in an advisory task force/community involvement group?



MASTER PLAN

Anoka County-Blaine Airport

Anoka County — Minnesota

TRA AIRPORT CONSULTANTS — SEATTLE, WASHINGTON

feet in thousands: 0 1 2 3 5

miles: 0 1/4 1/2 3/4 1

acres: 160 40 10

AIRPORT VICINITY

Exhibit A-2

EXHIBIT A-3

SAMPLE COMMUNITY STRUCTURE MATRIX

Community: Arden Hills

Managerial and political

Name Position Address Telephone #

Maintenance and civic organizations

Name Affiliation Address Telephone #

Productive and economic

Name Position Home Address Co. Address Telephone #'s

Groups organized specifically to the issue

Name Organization (Name, if any, telephone #, position, if any.)

Residents of the impacted communities

Name Address Proximity to Airport Telephone #